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# Assisting 10-week CLIL enrichment program for Islamic-affiliated primary school students

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ARTICLE INFO	ABSTRACT
<p><b>Article history</b>            Received: 2023-11-04            Revised: 2024-01-17            Accepted: 2024-01-20            Published: 2024-01-25</p> <p><b>Keywords</b>            CLIL            EYL            Enrichment program            Islamic-affiliated primary school</p>	<p><i>Teaching English to Young Learners starts to reach its growth as parents want their children to be competent in one of the 21st century skills, it is being communicative. Having the ability to communicate in one foreign language, particularly English, is considered important for many parents whose children study at Islamic-affiliated schools, other than Arabic skill. However, English teaching at primary school level is still limited in terms of its teaching duration, they learn only for 90 minutes per week. Therefore, this community service aims at providing more opportunities for primary graders at SD Aisyiyah Kota Malang to learn English through Content Language Integrated Learning (CLIL) enrichment program which was done on weekend class that lasted for ten consecutive meetings. The program was conducted in as semester, starting from July up to December 2023. Further, the methods implemented were analyzing students' learning needs, designing science-based topics as teaching material, developing materials, implementing the learning design through 10-week teaching, and evaluating the program. Results show that the content of the subject at the school was taught in English. Some materials designed for this project were about science, thus, in this program students discussed the topic of science in English. Also, the content was designed by integrating Islamic elements, the topics were animals mentioned in the Quran such as camel, whale, bird, donkey, and crow. At the end of the session, this activity has gained a positive response from students, content teacher, homeroom teacher, and also the school principal. This indicates that the community service which was designed in the form of the enrichment program for weekend class was effectively run.</i></p>
<p><b>Kata Kunci</b>            CLIL            Pengajaran bahasa Inggris untuk anak-anak            Program pengayaan Sekolah Dasar Islam</p>	<p><b>Program pengayaan CLIL selama 10 pekan bagi siswa sekolah dasar Islam.</b> Pengajaran Bahasa Inggris untuk anak-anak mulai mencapai pertumbuhannya karena orang tua ingin anak-anak mereka kompeten dalam salah satu keterampilan abad ke-21, yaitu keterampilan komunikatif. Kemampuan berkomunikasi dalam satu bahasa asing, khususnya bahasa Inggris, dianggap penting bagi banyak orang tua yang anaknya bersekolah di sekolah Islam, selain kemampuan bahasa Arab. Namun pengajaran bahasa Inggris di tingkat sekolah dasar masih terbatas dalam hal durasi pengajarannya, mereka hanya belajar selama 90 menit per minggu. Oleh karena itu, pengabdian pada masyarakat ini bertujuan untuk memberikan kesempatan lebih luas kepada siswa kelas SD SD Aisyiyah Kota Malang untuk belajar bahasa Inggris melalui program pengayaan Content Language Integrated Learning (CLIL) yang dilakukan pada kelas akhir pekan yang berlangsung selama sepuluh pertemuan berturut-turut. Kegiatan program pengabdian ini diselenggarakan selama satu semester dari Bulan Juli 2023 sampai Desember 2023. Terlebih, Metode yang dilakukan adalah menganalisis kebutuhan belajar siswa, merancang topik berbasis sains sebagai bahan ajar, mengembangkan materi, melaksanakan desain pembelajaran melalui pengajaran 10 minggu, dan mengevaluasi program. Hasil menunjukkan bahwa konten atau mata pelajaran di sekolah diajarkan dalam bahasa Inggris. Di akhir sesi, kegiatan ini mendapat respon positif dari siswa, guru materi, dan wali kelas, serta kepala sekolah. Hal ini merupakan indikasi bahwa pengabdian masyarakat yang merancang program pengayaan kelas akhir pekan berjalan efektif.</p>

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## INTRODUCTION

Teaching English since early age has been done by many researchers. However, little attention is put on how it is integrated to other subjects such as science. Teaching English through science can build young learners' communicative competences—the competence about the knowledge and the context of a language is operated. In such notion, the concept of Content and Language Integrated Learning (CLIL) can be a way to support the belief that young learners will successfully learn a second language (Coyle, 2015; Dalton-Puffer et al., 2021; Farah & Khoiriyah, 2023, Marsh & Langé 2000). Eventhough there is a debate whether or not a second language is appropriately taught to young learners, numerous research results reveal that at least a great attainment on language learning is proven to be successful in young learners is in the aspect of pronunciation and grammar compared to their counterpart, adult language learners (Ellis, 2008; Heras & Lasagabaster, 2015; Nugroho, 2020; Xanthou, 2011).

In a similar vein, teaching English to young learners can also be a medium for intercultural communicative competence. Mattson and Norrby (2013) assert that student will gain greater achievement on intercultural communicative competence when enough time is allocated to produce the target language in a communicative context. In this case, teachers in Islamic school context can enrich their students with materials that support the discourse used in that school, i.e Islamic cultures and values. If happens other cultures are infused in the teaching process, the curriculum must be planned very carefully (Byram, 2008; Liao & Li, 2023; Torres-Velasquez et al., 2023). Thus, the idea of integrating science with Islamic content is highly suggested.

This effort supports the implementation of Culturally Responsive Teaching (CRT) that in teaching English, teachers cannot impose the idea of teaching the culture of the center (Western) but they also need to take a serious concern on learners' background and school context. In its implementation, the work of Gay (2018), Gay (2015), and Ladson-Billing (2009) view that English teachers in using the CRT use learners' linguistics and cultural resources to support their learning gain and personal development. CRT teachers value their learners' personal experience and interest to address cultural gap in English learning. The cultural gap in English teaching lies on how Western values can be brought in the textbook and methods. In such a way, teachers in the periphery culture, i.e Asian culture needs to have this awareness.

Some efforts to infuse local cultures into English teaching have been undertaken by number of researchers. Integrating Islamic content into English instruction has become a topic of growing interest, as evidenced by the icreasing number of academic works exploring this research area. For example, Indonesian researchers have tried to inculcate Islamic values through chapters in the Quran, Islamic topics, and framework of instilling Islamic values into English instruction (Anshari & Widyantoro, 2020; Asmawati & Riadi, 2022; Madkur & Albantani, 2017). In a larger area, this attempt has also been initiated in other Muslim countries like Malaysia and Jordan through English teaching need analysis of islamic content for Muslim students (Bataineh et al., 2016; Hassim & Aziz, 2021). The idea of CRT is further highlighted for number of reasons, as it caters inclusive teaching strategy, values students' cultural references, identities, backgrounds, and empowers minority students; thus, CRT can create a meaningful learning environment and help students attain academic success (McKoy et al., 2017; Rhodes, 2017; Villegas & Lucas, 2002).

However, this present study is different from the previous related research in the aspect of its context and methodology. The context where this research takes place is situated in Islamic-affiliated primary school where English is taught for young learners. Secondly, in its method, this study empowers the primary graders with series of simlaneous training on the use of Islamic topics which are derived from students' religious book, the Quran.

To provide more opportunities for students at primary school level with English exposure, enrichment programs need to be conducted. To address this concern, a program of 10-week CLIL enrichment program that infuse Islamic content was done. This community service program was held by involving English teachers, home-room teachers, primary school graders, and pre-service teachers (students of PMM Mitra Dosen program). The program is supported by the Directorate of Community Service and Research Universitas Muhammadiyah Malang (DPPM-UMM). In addition, the program is implemented to support the Sustainable Development Goals (SDGs) number 4 (United Nation, n.d.), it is quality education, mainy to improve students' English competence in receptive and productive skills. The program aims at providing more opportunities for primary graders in operating their English competence so that it prepares them for higher level of education. Thus, this community service can contribute to the improvement on students' English skill acquisition as well as the enrichment of English teaching quality at the school partner.

## METHOD

This community services aims to assist student teachers and English teachers in providing an extracurricular for primary school students. The school partner is SD Aisyiyah Kota Malang, located at Jalan Gajayana III D / 570 D Dinoyo, Lowokwaru District, Malang (See Figure 2). This community services are follow-up program from the previous one (Farah & Khoiriyah, 2023; Khoiriyah et al., 2022; Waloyo et al., 2021). Hence, in this year, based on the school's need and demand, the community service program is designed in integrating CLIL (Content and Language Integrating Learning) approach in English classes, named English CLIL program. The students in higher level of primary school, consisting of fourth grade, fifth grade and sixth grade. Further, the total number of students involved in this CLIL program were 45

students. To implement weekly program, the project team were collaborated with student teachers of English Language Education Department, Universitas Muhammadiyah Malang for assisting student to learn English. In total, the project team and school partner involved in this community services in Table. 1.

Table. 1 the participants of community service program

No.	Details	Number of people involved
1.	Project team from lecturers of English Language Education Department	2 lecturers with expertise in TESOL, material development and CLIL
2.	English teachers and home-room teachers from school partner	4 teachers (two English teachers and three home-room teachers)
3.	Student teachers from English Language Education Department	6 student teachers (students who join <i>PMM Mitra Dosen</i> )
4.	Primary school students	45 students
<b>Total</b>		<b>57</b>

The community services were conducted in eight months, starting from March 2023 to October 2023. To implement the community services, there were several stages including analysis, design, development, and implementation. The details are in Figure 1.



Figure 1. The stages in conducting community service program

As it was illustrated in Figure 1, this community service program was conducted in four stages. Firstly, the project team conducted need analysis regarding the schools' condition and need such as the curriculum, students' language input, school facilities and many more. Secondly, the project team and the student teachers of English Language Education Department designed teaching syllabus for 10-week CLIL program based on the result of need analysis. The project team and the student teachers of English Language Education Department designed the teaching materials (e-book and digital quizzes) based on the result of need analysis. Next, the school partner set the program, along with project team and student teacher to implement 10-week CLIL program. The students used e-book and digital quizzes for CLIL activities. Lastly, after implementing the whole program (10 meetings), the project team conducted evaluation by interviewing the students, the home-room teachers and English teacher, and the school principal of SD Aisyiyah Kota Malang.

## RESULTS AND DISCUSSION

### Pre-implementation Analysis

In the pre-implementation phase, the project team conducted three activities namely need analysis, designing, and developing the teaching materials. Based on the result of classroom observation and interview with the school principal, the school partner (SD Aisyiyah Kota Malang, see Figure 2) has encouraged students to learn English by having international collaboration. The international schools that have collaborated with SD Aisyiyah Kota Malang among others are primary schools in India (Lakshya International School Andrapradesh and Vidya Bharati School Ghaziabad) and Korea Selatan (Dajeong Primary School). In the near future, this school is also projected to have collaboration with schools in the US, Japan, and Saudi Arabia. The effort of this international projection is not only aimed at exposing students to improve their English competence but also to increase their Arabic. Thus far, the international collaboration has invited students from 3rd to 6th graders to perform speaking English and storytelling via a virtual platform, zoom.





Figure 2. School visit by the project team to SD 'Aisyiyah Kota Malang

Further, the project team formulated the problems encountered as well as its possible solution in the table 1. The problems encountered were mostly related to the need for international exposure for student, the need for contextual teaching resources based on the school vision and mission (Islamic-affiliated school) and Kurikulum Merdeka, and the need for effective teaching and learning method to improve students' English competence. The project team was in attempt to provide some solutions. One of which is by introducing CLIL program to primary school students in order to enhance their learning process in English and other content subject such as Science, Math and Islamic science ( Table 2).

Table 2. The matrix of problems encountered, solutions, indicators, and outcomes

Problems encountered	Solutions	Indicators	Outcomes
The need for international language exposure for students	Mentoring for the implementation of CLIL program as an enrichment program or extracurricular	100 % Mentoring for the implementation of CLIL program as an enrichment program or extracurricular every week (within 10 week)	Teaching syllabus Ready-use teaching materials and worksheet 10-week meeting of CLIL program
The need for contextual teaching resources based on the school vision and mission (Islamic-affiliated school) and Kurikulum Merdeka	Designing student activity book by integrating English, Islamic content and other content lesson	100%In collaboration with students of PMM Mitra Dosen program and English teachers of SD Aisyiyah Kota Malang designing student activity book	Student activity book Digital worksheet
The need for effective teaching and learning method to improve students' English competence	Implementing digital students' workbook and interactive quizzes to enhance students' engagement in learning English	70% English teacher and home-room teachers are able to use and facilitate their students	ready use digital interactive quizzes

### Design

Design is the second phase of ADDIE. This phase will begin with the design of digital teaching materials, which will be created in accordance with the findings of earlier needs, curriculum, and student analyses. In the design phase, the project team designed the teaching materials into a digital student workbook. The teaching materials varied based on the result of need analysis. In order to implement CLIL approach, the teaching materials are integration of English, math, science and Islamic value. Since the implementation of CLIL program was divided into 2 phases, based on the school needs, the syllabus also was designed into two parts. The details of the syllabus are presented in Table 3. The syllabus of topic animals stated in the Quran are presented in Table 4, for the second phase of CLIL program. It was implemented starting from meeting 6 to meeting 10.

Table 3. Syllabus for first phase of CLIL program

Chapter	Topic	Activity	Content materials
1	Introduction	Singing a classroom password Self-introduction	<b>Islamic value</b> (starting activity by reciting <i>bismillah</i> , and saying <i>hamdalah</i> – to be grateful in day-to-day activities)
2	Dream jobs	Presenting the future dream jobs Writing a letter to friends in India	<b>Islamic value</b>
3	Gardening	Learning about science (Part of plants) Global warning Gardening	<b>science</b> (Part of plants)
4	My favorite animals	Learning about lifecycle of butterfly Learning math	<b>Science</b> (lifecycle of butterfly) <b>Math</b> (addition and multiplication)
5	Save our earth	Learning about water pollution Presenting a poster	<b>Science</b> (water pollution)

Table 4. Syllabus for second phase of CLIL program

Chapter	Topic	Activity	Islamic Value
1	Whale	Reading Text CROWD Concept Interactive Quiz	Prophet Yunus story and the whale (Al-Anbiya: 87)
2	Birds	Reading Text CROWD Concept Interactive Quiz	Birds are symbol of Allah’s power. (Al-Mulk: 19)
3	Donkey	Reading Text CROWD Concept Interactive Quiz	Allah’s command of not rising voices like donkey. (Luqman: 19)
4	Camel	Reading Text CROWD Concept Interactive Quiz	Camel is one of the amazing creations that people can take benefit from it. (Al-Ghasiyah: 17)
5	Crow	Reading Text CROWD Concept Interactive Quiz	Allah sent a crow searching in the ground to show the son of Adam how to hide the disgrace of his brother. (Al-Maida: 31)

### Development

In this phase, the project team developed the syllabus into teaching materials. The teaching materials were integrated in online quiz and digital student workbook as it was illustrated in Figure 3.

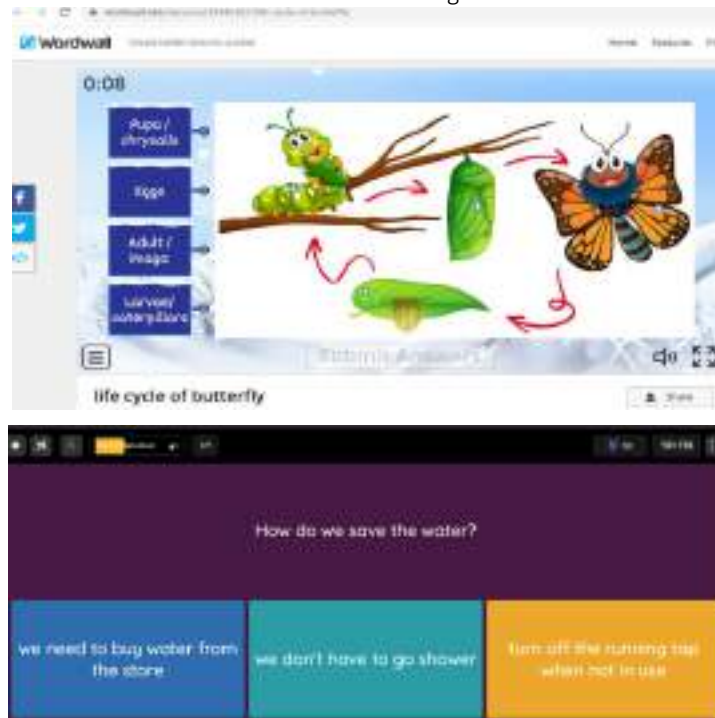


Figure 3. The exemplary of adopted digital learning sources from wordwall.net and quizzes.com

Figure 4 is the sample of material that has been developed by the project team.



Figure 4. an exemplary of digital workbook developed by the project team

## Implementation

### 1. Students were asked to sing a long opening classroom password in every meeting

Students were given a song to open the class. This song is the opening classroom password. This song is an adaptation of a popular children's song with the lyrics changed to English and given Islamic values. In this CLIL program activity, the song chosen was a song from the famous movie "Spongebob Squarepants". The lyrics of opening classroom password are as follows:

Are you ready students? (Aye, aye Teachers)  
I can't hear you (aye, aye Teachers)  
Ooh  
Who are ready to learn today?  
(We are Marvelous)  
Intelligent and excited are we  
(We are Marvelous)  
We learn English with so much fun  
(We are Marvelous)  
Let's start the class with **basmalah**  
(We are Marvelous)  
We are Marvelous  
We are Marvelous  
We are Marvelous  
We are Marvelous

Meanwhile, the opening classroom password are as follows:

Goodbye my friend,  
goodbye teacher,  
Let's go home, let's go home,  
Don't forget to say thanks,  
don't forget to say thanks,  
Thanks teacher,  
Thanks my friends, **alhamdulillah**

### 2. Students learned introducing themselves and their dream jobs

The agenda for the second meeting is about dream jobs. In connection with the material at the first meeting, which was introduction, students were asked to introduce themselves and their dream jobs. Students wrote down the introduction to make it into a letter, which later would be sent to pen pal friends in India. The student-teachers (PMM

Mitra Dosen members) facilitated learning with examples of introductory sentences that students can implement, as well as providing paper with attractive designs to use as letters.

### **3. Students learned science and got involved in out-door activity (gardening)**

The agenda for the third meeting was part of plants. The students firstly did online interactive quizzes related to parts of plant. After that, the student-teachers explained and drilled the students some words to describe parts of plant. In this activity, students were encouraged to not only learning English but also learning content subject (science). Further, one by one, students presented their speaking activities by explain part of plants in front if the class. The student-teachers gave some hints as presentation starter such as each plant has six important parts called the root, stem, leaves, flowers, fruits and seeds. The students were formed into five groups, and the student-teacher distributed plant seeds to each group. Students learn to plant using the planting media provided. After the gardening activity, the students were asked to talk about their gardening activities on a paper (Figure 5).



Figure 5. After studying science (Part of Plant), students were asked to plan a flower in their school yard

### **4. Students learned about science (life cycle of butterfly) and did some online quizzes**

The agenda for the fourth meeting was to learn about the life cycle of butterflies. The students were divided into four groups, each group guided by one of the members of PMM Mitra Dosen. Each group learned about the butterfly life cycle, followed by quiz time using each member's laptop. After the group discussion, students were learning about multiplication with the same theme, the life cycle of butterflies.

### **5. Students learned about water pollution and created a public campaign related to environment**

The agenda for the fifth meeting was to learn about water pollution. Students at SD Aisyiyah learned about the causes, impacts, and types of water pollution. Besides that, students also learned various new vocabulary terms regarding water pollution. At the end of the activity, the students made posters with the theme "Save the environment and save our earth". The aim was for the students to be more aware of their surroundings and maintain a clean environment (Figure 6).



Figure 6. The students presented their work under the theme "Save the environment and save our earth"



## 6. Students learned some animals mentioned in the Quran

In the sixth until tenth meeting, students learned some animals mentioned in the Quran such as camel, whale, donkey, birds, and crow. In those meeting, students were set to read an e-book about those aforementioned animals using a concept of read aloud activity, CROWD (Completion, Repeat, Open-ended question, Wh-question, and Distancing). In its implementation, students were divided into several groups and assisted by one student-teacher in discussing the content of the book. At the end of every topic, students were assigned to complete an interactive quizz designed using online platform such as quizziz, educandy, and wordwall. This activity was also a form of formative assessment that assess students' comprehension of a topic that recently read (Figure 7).



Figure 7. The students learned some animals mentioned in the Quran

## Post-implementation

### Evaluation

At the end of program, the project team interviewed the school principal, home-room teacher, student-teacher and students to have feedback on its implementation. The school principal responded positively towards the enrichment program as it gives a new direction of English learning at the school.

"I asked the students about the program they joined and they are very happy as the activities designed are new for them such as do gardening in English and they seem to enjoy learning English. That's what we want our students to instill in themselves, love learning English. With this, we are positive that we are able to support our international program at the school, also encourage our students to become part of global citizen."

Similarly, the home-room teacher who enthusiastically supervise the enrichment program feel assisted with the program.

"I observe that the student-teacher from PMM along with the project team have actively and appropriately designed the learning material that is contextualized to our students' English level and importantly the team has also created the content into more specific that is congruent to our school context. I am contended when I see my students were engaged in the activities. I asked them whether they enjoy the class and most of them nodded their head."

In other session, one student-teacher were also invited to share their hands-on experience in teaching English at the school partner.

"Thanks to the project team who supervised us in designing the material and evaluating our day-to-day teaching so that we learn handling primary graders. Also, we learn a lot how to do classroom management and in fact it is practically not that easy teaching young learners. We need to dedicate our energy to the fullest. The use of the designed materials is also helpful to our teaching." (STR1)

"I am actually a bit an introvert person, but I cannot really stand with the kids because they are very inquisitive so that I need to respond their every questions. Therefore, I also try my best to find the answers when they raised a question which I do not know the specific term in English." (STR2)

Finally, one of the students were randomly asked to have their impression joining the enrichment program.

“The activity I like the most were gardening, doing some quizzes and games, and participating in group work. I enjoy reading the animals stated in the Quran. I know that birds are toothless, they do not chew their food, they just swallow it right away, that is interesting.” (ST-AMR)

“I feel enthusiastic learning English with the student-teachers, they are very kind and helpful. With that, I am keen on completing the activities assigned to me.” (ST-ASH)

The enrichment program has attracted school partner’s attention. Teachers were all assisted with the material designs and teaching practices, students’ enthusiasm in practicing their oral skills by interacting with their peers and teachers is also observed. This community service aims to promote CLIL approach in primary school partner. The educational approach known as Content and Language Integrated Learning (CLIL) facilitates the simultaneous development of content and language (Coyle et al., 2010; Dalton-Puffer, 2011; Meyer et al., 2015). Through implementing CLIL program as an enrichment program for the school partner, the students were expected to gain more language and content knowledge input. This finding is consistent with previous research as well (Agustín-Llach & Canga Alonso, 2016; Castellano-Risco et al., 2020; Fernández-Sanjurjo et al., 2019; Gierlinger & Wagner, 2016; Jafarigohar et al., 2022; Tragant et al., 2016), positing that implementing CLIL approach enabled learners to enrich their vocabulary in target language. Therefore, the framework of 4C CLIL was integrated into the teaching and learning process. This 4C framework consists of Content, Cognition, Communication and Culture. In this CLIL program, take an example, for *Content* and *Cognition*, students were stimulated to improve their higher order thinking skills. By solving some math questions, teachers encouraged students to have more cognitive load. Students also asked to comprehend Science knowledge such as part of plant, ecosystem, water pollution. It was expected that students learned both language and content materials. Meanwhile, for *Communication*, group work and presentation were a mandatory of learning activity in every meeting. By participating in group work and classroom presentation, students were facilitated to improve their speaking skills so that they had more effective communication skills in English. Lastly, regarding *Culture*, the teaching materials were adapted related to the school context. The integration Islamic values in learning materials such as animal named in the Qur’an, was projected to promote more-relevant and contextualized foreign language learning.

Further, teachers use games and CLIL activities to engage students' interests and improve their skills. Using games for young learners were strongly suggested to create stress-free learning environment (Behnamnia et al., 2020; Liu et al., 2021; Sun et al., 2021). This learning activity is relevant to the context of CLIL in primary schools as CLIL centers on using language *with* and *through* content, rather than treating language *as* content (Anderson et al., 2015). Using digital quizzes, the students were more engaged in learning process. They enjoyed to learn the language as well as the content materials unconsciously. According to Prensky (2011), young learners have an innate need to play games. Effectively designed educational games facilitate learning by offering pupils amusement, fervent engagement, inspiration, inventiveness, and interpersonal engagement. Those, in this 10-week CLIL program, the project team provides students with various educational games using quizzes, worlwall.net, canva and other relevant digital learning sources. The provided games were also designed in a group-work. Playing games makes students more willing to communicate both within and outside of the classroom. This is consistent with work of (Liu et al., 2021), asserting that games are very effective and powerful instruments that promote collaborative learning. In a nutshell, this collaborative learning supports the effectiveness of CLIL approach in relation to *Communication* (4C framework).

Lastly, CLIL concept is applicable to be integrated in English teaching at primary school level for two main reasons that CLIL is combining subject and language learning in one go, so learning a language will be more efficient and meaningful; second, another CLIL element is culture, that in English teaching, teachers are supposed to accommodate students’ culture. Cultural element is what matters in language learning. Using students’ cultural background is highly suggested in language classroom as it becomes a hook for students’ brain in associating their background knowledge to the new ones. This idea is supported by Culturally Responsive Pedagogy proponents who assert that English language teachers are encouraged to design their teaching by taking a serious concern on students’ cultural and linguistic background which includes their life experiences (Gay, 2018; Ladson-Billing, 2009; Villegas & Lucas, 2007; Ladson-Billing, 2006). Another urgency of infusing students’ culture in Islamic-affiliated school is mainly because English teaching has an association to ‘other values and ideologies’ which is different to Islamic worldview. English teaching is ideology-sensitive as it is not free from political and social condition (Makoni & Pennycook, 2005), it is also linked to Western discourse (Varghese & Johnston, 2007; Pennycook & Makoni, 2005; Pennycook & Coutand-Marin, 2003); whereas students’ culture at Islamic school upholds Islamic value and Eastern culture. Thus, this community service implies that teachers at Islamic-affiliated school should be aware of such issues, their main jobs are not only teaching students to be proficient in English but also to teach English in appropriately designed activities.

## CONCLUSION

By providing science and Islamic value in learning materials of English enrichment program to primary graders at SD Aisyiyah Kota Malang, this community service highlights the implementation of CLIL approach for young learners. The 10-week CLIL program was implemented well, according to the results, which also shows that both the students and the school partner provided positive remarks. This study also emphasizes the fact that an enrichment program for English exposure such as CLIL program in primary schools, serves a variety of purposes, such as fostering language acquisition, content learning, and cultural awareness. This cultural awareness is crucial to provide more relevant teaching and learning activities at Islamic-affiliated school. Additionally, digital games are also used to encourage entertaining learning and increase student involvement during class sessions. The findings of this study may offer pedagogical guidance to EFL instructors—more especially, primary school teachers at Islamic school context and CLIL practitioners.

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## REFERENCES

- Anderson, C. E., McDougald, J. S., & Cuesta Medina, L. (2015). CLIL for young learners. *Children Learning English: From Research to Practice, 2000*, 137–151. <https://doi.org/10.4324/9781003173151-19>
- Anshari, M. Z., & Widyantoro, A. (2020). Inculcating Islamic values contented in Qs. Luqman through english speaking materials. *Journal of Education and Learning (EduLearn)*, 14(1), Article 1. <https://doi.org/10.11591/edulearn.v14i1.14285>
- Asmawati, A., & Riadi, A. (2022). Integrating Islamic values into english materials. *English Language, Linguistics, and Culture International Journal*, 2(3), Article 3. <https://doi.org/10.24252/elstic-ij.v2i3.34684>
- Agustín-Llach, M. P., & Canga Alonso, A. (2016). Vocabulary growth in young CLIL and traditional EFL learners: evidence from research and implications for education. *International Journal of Applied Linguistics (United Kingdom)*, 26(2), 211–227. <https://doi.org/10.1111/ijal.12090>
- Behnamnia, N., Kamsin, A., Ismail, M. A. B., & Hayati, A. (2020). The effective components of creativity in digital game-based learning among young children: A case study. *Children and Youth Services Review*, 116(March), 105227. <https://doi.org/10.1016/j.chilyouth.2020.105227>
- Bataineh, R., Jaber, E., & Bataineh, R. (2016). The Compatibility of total English with the Arab Islamic culture as Revealed by content analysis and Jordanian EFL instructors' and students' views. *International Journal of Language and Applied Linguistics*, 2, 19–43.
- Byram, M. (2008). *From foreign language education to education for intercultural citizenship essays and reflections*. Great Britain: The Cromwell Press Ltd.
- Castellano-Risco, I., Alejo-González, R., & Piquer-Píriz, A. M. (2020). The development of receptive vocabulary in CLIL vs EFL: Is the learning context the main variable? *System*, 91. <https://doi.org/10.1016/j.system.2020.102263>
- Coyle, D. (2015). Strengthening integrated learning: Towards a new era for pluriliteracies and intercultural learning. *Latin American Journal of Content and Language Integrated Learning*, 8(2), 84–103. <https://doi.org/10.5294/lacil.2015.8.2.2>
- Coyle, D., Hood, P., & Marsh, D. (2010). *Content and language integrated learning*. Cambridge.
- Dalton-Puffer, C. (2011). Content-and-language integrated learning: From practice to principles? *Annual Review of Applied Linguistics*, 31, 182–204. <https://doi.org/10.1017/S0267190511000092>
- Ellis, R. (1994). *The study of second language acquisition*. Oxford: University Press.
- Farah, R. R., & Khoiriyah. (2023). Implementation of CLIL program in Islamic affiliated primary school: Teaching assistants project. *IDEAS: Journal on English Language Teaching and Learning, Linguistics and Literature*, 10(1), 92–103. <https://doi.org/10.24256/ideas.v11i1.3691>
- Fernández-Sanjurjo, J., Fernández-Costales, A., & Arias Blanco, J. M. (2019). Analysing students' content-learning in science in CLIL vs. non-CLIL programmes: empirical evidence from Spain. *International Journal of Bilingual Education and Bilingualism*, 22(6), 661–674. <https://doi.org/10.1080/13670050.2017.1294142>
- Gay, G. (2018). *Culturally responsive teaching: Theory, research, and practice*. Teachers College Press.

- Gay, G. (2015). The what, why, and how of culturally responsive teaching: International mandates, challenges, and opportunities. *Multicultural education review*, 7(3), 123-139. 10.1080/2005615X.2015.1072079
- Gierlinger, E. M., & Wagner, T. A. (2016). The more the merrier – revisiting CLIL-based vocabulary growth in secondary education. *Latin American Journal of Content & Language Integrated Learning*, 9(1), 37–63. <https://doi.org/10.5294/laclil.2016.9.1.3>
- Hassim, S. H., & Aziz, A. A. (2021). Using Soleh English (SE) teaching materials with the integration of cultural and Islamic values: Islamic preschool teachers' voices. *Malaysian Journal of Social Sciences and Humanities (MJSSH)*, 6(4), Article 4. <https://doi.org/10.47405/mjssh.v6i4.733>
- Heras, A., & Lasagabaster, D. (2015). The impact of CLIL on affective factors and vocabulary learning. *Language Teaching Research*, 19(1), 70–88. <https://doi.org/10.1177/1362168814541736>
- Jafarigohar, M., Divsar, H., & Etemad, P. (2022). The effect of CLIL context on the primary education EFL receptive and productive lexical growth. *Language Teaching Research*, 00(0), 1–25. <https://doi.org/10.1177/13621688221078997>
- Ladson-Billings, G. (2006). Yes, but how do we do it? Practicing cultural relevant pedagogy. *ESED 5234 - Master List*. 37. <https://digitalcommons.georgiasouthern.edu/esed5234-master/37>
- Ladson-Billings, G. (2009). *The dreamkeepers: Successful teachers of African American students*. San Francisco, CA: Jossey-Bass. <https://eric.ed.gov/?id=ED373128>
- Liao, H., & Li, L. (2023). Facilitating EFL learners' intercultural competence through culturally responsive teaching in oral English classrooms. *System*, 115. <https://doi.org/10.1016/j.system.2023.103070>
- Liu, F., Vadivel, B., Rezvani, E., & Namaziandost, E. (2021). Using games to promote English as a foreign language learners' willingness to communicate: Potential effects and teachers' attitude in focus. *Frontiers in Psychology*, 12(October), 1–10. <https://doi.org/10.3389/fpsyg.2021.762447>
- Madkur, A., & Albantani, A. M. (2017). Instilling Islamic values in foreign language teaching: An Indonesian context. *ICEMS*, 97–103. <https://doi.org/10.2991/icems-17.2018.20>
- Makoni, S., & Pennycook, A. (2005). Disinventing and (re) constituting languages. *Critical Inquiry in Language Studies: An International Journal*, 2(3), 137-156. [https://doi.org/10.1207/s15427595cils0203\\_1](https://doi.org/10.1207/s15427595cils0203_1)
- Marsh, D., & Langé, G. (2000). Using languages to learn and learning to use languages. Finland: University of Jyväskylä, 88, 36-39. <http://clilcompendium.com/1uk.pdf>
- Mattsson, A. F., & Norrby, C. (2013). Language acquisition and use in multilingual contexts. *Theory and Practice Language Policy in Practice View project Grammar in interaction View project*. <https://lucris.lub.lu.se/ws/portalfiles/portal/5329199/4075031.pdf>
- McKoy, C. L., MacLeod, R. B., Walter, J. S., & Nolker, D. B. (2017). The Impact of an In-Service Workshop on Cooperating Teachers' Perceptions of Culturally Responsive Teaching. *Journal of Music Teacher Education*, 26(2), 50–63. <https://doi.org/10.1177/1057083716629392>
- Meyer, O., Coyle, D., Halbach, A., Schuck, K., & Ting, T. (2015). A pluriliteracies approach to content and language integrated learning – Mapping learner progressions in knowledge construction and meaning-making. *Language, Culture and Curriculum*, 28(1), 41–57. <https://doi.org/10.1080/07908318.2014.1000924>
- Nugroho, A. (2020). Content and Language Integrated Learning practice in English for Accounting course. *IJET (Indonesian Journal of English Teaching)*, 9(2), 172–181. <https://doi.org/10.15642/ijet2.2020.9.2.172-181>
- Pennycook, A., & Makoni, S. (2005). The modern mission: The language effects of Christianity. *Journal of Language, Identity & Education*, 4(2), 137-155. [https://doi.org/10.1207/s15327701jlie0402\\_5](https://doi.org/10.1207/s15327701jlie0402_5)
- Pennycook, A., & Coutand-Marin, S. (2003). Teaching English as a missionary language. *Discourse: Studies in the cultural politics of education*, 24(3), 337-353. <https://doi.org/10.1080/0159630032000172524>
- Prensky, M. (2011). *Fun, play and games: What makes games engaging*. New York: Digital Game-Based Learning. McGraw-Hill.
- Rhodes, C. M. (2017). A validation study of the culturally responsive teaching survey. *Universal Journal of Educational Research*, 5(1), 45–53. <https://doi.org/10.13189/ujer.2017.050106>
- Sun, L., Ruokamo, H., Siklander, P., Li, B., & Devlin, K. (2021). Primary school students' perceptions of scaffolding in digital game-based learning in mathematics. *Learning, Culture and Social Interaction*, 28(August 2020), 100457. <https://doi.org/10.1016/j.lcsi.2020.100457>
- Torres-Velasquez, D., Lobo, G., Parker, I. McCaskey, R., & Robichaux-Davis, R. R. (2023). "Culturally responsive mathematics teaching and English language learners." *Mathematics Teacher: Learning and Teaching PK-12*, 115(9). <https://doi.org/10.5951/mtlt.2022.0171>
- Tragant, E., Marsol, A., Serrano, R., & Llanes, À. (2016). Vocabulary learning at primary school: a comparison of EFL and CLIL. *International Journal of Bilingual Education and Bilingualism*, 19(5), 579–591. <https://doi.org/10.1080/13670050.2015.1035227>
- United Nation. (n.d). *The 17 goals*. Retrieved October 30, 2023, from <https://sdgs.un.org/goals>. at 13.29
- Varghese, M. M., & Johnston, B. (2007). Evangelical Christians and English language teaching. *TESOL Quarterly*, 41(1), 5-31. <http://www.jstor.org/stable/40264329>



- Villegas, A. M., & Lucas, T. (2002). Preparing culturally responsive teachers: Rethinking the curriculum. *Journal of Teacher Education*, 53(1), 20–32. <https://doi.org/10.1177/0022487102053001003>
- Villegas, A. M., & Lucas, T. (2007). The culturally responsive teacher. *Educational leadership*, 64(6), 28. <https://eric.ed.gov/?id=EJ766361>
- Xanthou, M. (2011). The impact of CLIL on L2 vocabulary development and content knowledge. *English Teaching: Practice and Critique*, 10(4), 116–126.



# Corporate social responsibility program: Based on community development in the village

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ARTICLE INFO	ABSTRACT
<p><b>Article history</b> Received: 2023-12-29 Revised: 2024-01-14 Accepted: 2024-01-21 Published: 2024-01-27</p> <p><b>Keywords</b> Corporate social responsibility Community empowerment Village</p>	<p>Corporate Social Responsibility (CSR) is an action taken by a company as a form of social responsibility and the surrounding environment where the company operates. In this case, PT Pertamina Hulu Energi West Madura Offshore coordinates with Sidorukun Village to determine the fostered residents and beneficiaries of the CSR program. The purpose of this study to analyze/explain the community empowerment-based CSR program in the village. This research uses a qualitative approach. Data collection techniques were carried out using observation, documentation and interviews. Researchers used purposive sampling and snowball sampling techniques to determine informants. The findings show that the implementation of CSR by PT Pertamina Hulu Energi West Madura Offshore is based on the CSR theory according to Sen and Bhattacharya, namely Community Support; Employee Support; Diversity; Environment; Non-US Operations; and Products, it can be concluded that the CSR of PT Pertamina Hulu Energi West Madura Offshore has met the theoretical criteria, starting from company policies that support education, health, and SME development programs. The implementation of nature conservation activities, innovation of processed products, and the company also provides employment opportunities for the community and pays attention to public safety and health during community empowerment activities.</p>
<p><b>Kata Kunci</b> Corporate social responsibility Pemberdayaan masyarakat Desa</p>	<p><b>Program corporate social responsibility: Berbasis pengembangan masyarakat di desa.</b> Corporate Social Responsibility (CSR) merupakan suatu tindakan yang dilakukan oleh perusahaan sebagai bentuk tanggung jawab mereka terhadap sosial dan lingkungan sekitar di mana perusahaan itu beroperasi. Dalam hal ini, PT. Pertamina Hulu Energi West Madura Offshore berkoordinasi dengan Desa Sidorukun Gresik untuk menetapkan sebagai warga binaan dan penerima bantuan program CSR. Penelitian ini bertujuan untuk menganalisis/ menjelaskan program CSR berbasis pemberdayaan masyarakat di desa. Pendekatan penelitian ini menggunakan pendekatan kualitatif. Teknik pengambilan data dilakukan dengan observasi, wawancara, dan dokumentasi. Peneliti menggunakan teknik penentuan informan Purposive Sampling dan Snowball Sampling. Hasil penelitian menunjukkan bahwa pelaksanaan CSR PT. Pertamina Hulu Energi West Madura Offshore berdasarkan teori CSR menurut Sen dan Bhattacharya yaitu Community Support; Diversity; Employee Support; Environment; Non-U.S Operations; dan Product, dapat disimpulkan bahwa pelaksanaan CSR oleh PT. Pertamina Hulu Energi West Madura Offshore memenuhi kriteria teori tersebut, mulai dari kebijakan perusahaan yang mendukung program pendidikan, kesehatan hingga pengembangan UKM. Lalu, terselenggaranya kegiatan pelestarian alam, inovasi produk olahan, bahkan perusahaan juga memberikan kesempatan kerja bagi masyarakat Sidorukun tanpa memandang gender serta turut memperhatikan keselamatan dan kesehatan masyarakat ketika menjalani kegiatan pemberdayaan masyarakat. Sehingga masyarakat dapat mengikutinya dengan rasa aman dan nyaman.</p>

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## INTRODUCTION

Corporate social responsibility (CSR) is an action taken by a company as a form of its responsibility towards the community and environment around where the company operates. Theoretically, CSR is central to business ethics, in that businesses have obligations to other interested parties. CSR refers to all relationships between businesses and customers, employers, investors, communities, governments and suppliers. Today's society demands that companies play an increasingly active role in solving social and environmental problems. This demand encourages companies to make social responsibility an integral part of their operations. In addition, today's society and consumers are increasingly aware of social and environmental problems. They require companies to pay more attention to transparency, ethics and social responsibility in all their business processes (Hayati et al., 2023). The new paradigm of Corporate Social Responsibility encourages a company to commit to responsibility or independent economic development in a sustainable manner, as well as reciprocity to society and the environment (Pranoto & Yusuf, 2016).

Obligations in implementing CSR in Indonesia are regulated in Law Number 40 of 2007 concerning Limited Liability Companies (PT), Article 1 Number 3 which states that PTs that carry out their business in the field of or related to natural resources are obliged to carry out social and environmental responsibilities (Pujayanti, 2022). The idea that business has a greater duty than simply improving economic prosperity is not new (Stahl et al., 2020). The role of companies that produce goods and services for sale is always associated with society, politics and even the military (Chappell & Guerrina, 2020). Companies must comply with public and general policies, which explicitly regulate certain social areas that must be addressed by them, such as work safety, social security for workers, environmental preservation, etc (McBride et al., 2019; Rasyid et al., 2015).

The concept of corporate social responsibility consist of policies and practices related to values, legal fulfillment, community and environmental respect, and a company's commitment to supporting sustainable progress. Companies basically want to make as much money as possible without paying attention to the health of their employees, their communities, or the environment. Therefore, the concept of Corporate Social Responsibility emerged. The concept of CSR is popular among company stakeholders and has become an important part of corporate sustainability (Khuong et al, 2021).

Companies can implement Corporate Social Responsibility (CSR) in the form of different programs depending on company policy. Sen and Bhattacharya (2001) identified six main things that are included in CSR, among others: a) Community Support, which means the company supports health, education, arts programs, and so on; b) Employee Support, namely protection of company employees, incentives and rewards, as well as guarantees of work safety; c) Diversity is a company policy not to discriminate in terms of physical (disability), gender or certain races; d) Environment, namely creating a healthy and safe environment, effective waste management, and production of environmentally friendly products, etc.; e) Non-U. S Operations, namely the company's responsibility to provide equal opportunities to the community to get work opportunities, including by opening factories abroad (obroad Operations); and f) Products, namely the company makes products that are safe for health, not fraudulent, carries out research and development, and uses recyclable packaging.

The scope of CSR that becomes the standard (ISO 26000, 2010) is the environment, human rights, community development and involvement, employment practices, fair operating practices, and consumer issues. Compliant with ISO 26000, PT Pertamina Hulu Energi WMO conducts Corporate Social Responsibility to the community around the company, precisely in Sidorukun Village, Gresik District, Gresik Regency. The community empowerment-based CSR program carried out by PT Pertamina Hulu Energi WMO is a collective effort by the community and several stakeholders in carrying out economic, social and environmental empowerment.

In general, efforts to improve community welfare are known as community empowerment. Community empowerment includes various activities, such as self-help and initiative, mutual cooperation, environmental and settlement improvements, development of village economic enterprises, and activities that can improve community activities by increasing production (Ibrahim et al., 2020). Community empowerment in villages involves a number of activities and programs that aim to improve the quality of life of local residents, empower local potential, and create a better social environment.

Empowerment is a process and a goal. As a process, empowerment is a collection of activities to strengthen the power or influence of vulnerable groups in society, including those who suffer from poverty. Meanwhile, empowerment as a goal refers to the conditions or results to be achieved through social change, where people have power, knowledge and life skills, both physical, financial and social, such as self-confidence, being able to express desires, participating in social activities, and being able to carry out tasks (Mahendra, 2019). Empowerment is a dynamic continuous activity that synergistically encourages the involvement of all existing potential evolutively with the involvement of all potential (Suhendra, 2015). Efforts to prepare society by strengthening community institutions so that they are able to accomplish progress, independence and prosperity in sustainable social justice are known as community empowerment (Sumaryadi, 2005).

Corporate social responsibility based on community empowerment in villages is becoming increasingly relevant given the many social and economic challenges faced by rural communities, such as limited access to education, infrastructure, health, and limited economic opportunities. Through a corporate social responsibility program that focuses on community empowerment in the village, PT Pertamina Hulu Energi WMO not only provides financial assistance, but also acts as a sustainable development partner to explore local potential, as well as provide training and assistance so that village communities can be economically independent.

The community empowerment approach in corporate social responsibility programs not only involves the surrounding community as beneficiaries, but also involves the community as active partners in the planning, implementation, and evaluation of development programs. By actively involving the community, corporate social responsibility programs are more effective and sustainable because it meets the needs and expectations of local communities (Nur et al., 2023).

Seeing the potential that exists in Sidorukun Village is the mushroom cultivation business and the media used is briquettes with solid fuel made from small-sized biomass that is put together, either using adhesives or without adhesives. The potential of mushroom cultivation can be relied on and developed after the post Covid-19 pandemic which has an impact on the community's economy, PT Pertamina Hulu Energi WMO coordinates with the village to establish this village into the community and get support from the Corporate Social Responsibility program. Empowerment refers to people who are vulnerable and do not have access to productive resources to increase their income and create the services they need, as well as participate in the development process.

With the corporate responsibility program, the community around the company receives assistance from PT Pertamina Hulu Energi WMO to be empowered in the social, economic and environmental fields in the form of skills training, small business development, and environmental conservation efforts. Initially before there was Corporate Social Responsibility assistance from PT Pertamina Hulu Energi WMO, the community only receives financial assistance from the village but there is no follow-up. Community empowerment activities carried out by PT. Pertamina Hulu Energi West Madura Offshore is in line with SDGs (Sustainable Development Goals) Decent work and Economic growth, where empowerment activities can encourage sustainable economic growth, create higher productivity and technological innovation in Sidorukun village. Encouraging entrepreneurship and job creation is key. Taking into account these targets, the aim is to achieve full and productive employment and decent work for all groups by 2030. Therefore, the aim of this research is to analyze/ explain the implementation of PT Pertamina Hulu Energi West Madura Offshore Corporate Social Responsibility program, especially the community empowerment program in Sidorukun Village, Gresik District, Gresik Regency.

## METHOD

This research was conducted in Sidorukun Village, Gresik District, Gresik Regency, East Java (Figure 1). This research used a qualitative approach. The qualitative approach by (Creswell & Creswell, 2018) is defined as follows: "Qualitative research focuses on the processes that occur as well as the products or results. In particular, researchers are interested in exploring how things happen". The definition by Creswell above asserts that qualitative research is process-centered; this suggests that it is not limited. The researcher is also important in the research to understand the social symptoms that occur during the research Tenny et al., 2022).f

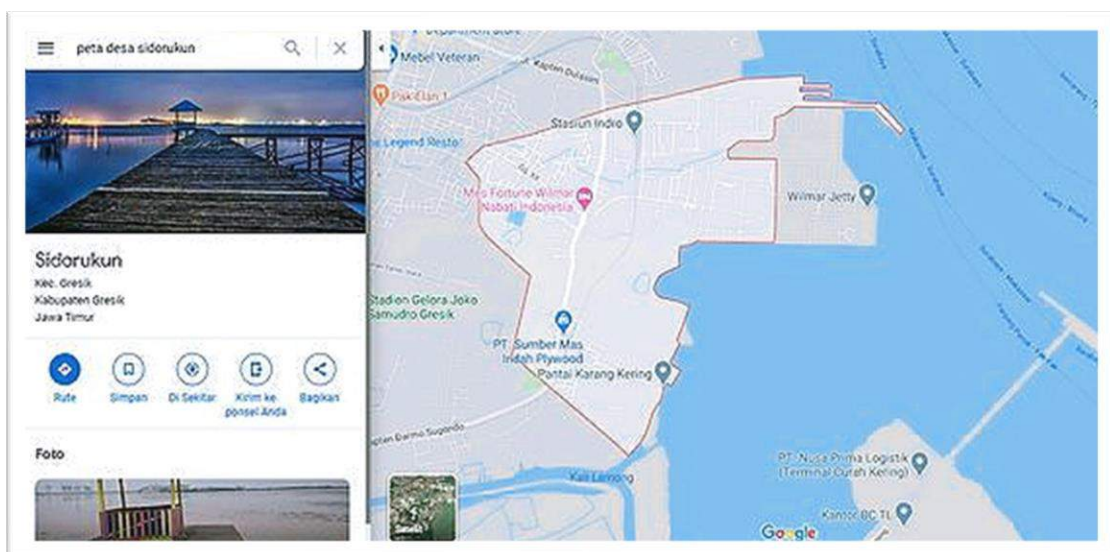


Figure 1. Research location (Sidorukun Village, Gresik District, Gresik Regency, East Java)

The researcher chose this method for this study because he wanted to thoroughly study the Corporate Social Responsibility program based on community empowerment in the village. The researcher is not limited by measuring instruments as in quantitative research, so the author can obtain new information. The information, for example, is related to the background of the phenomenon of social symptoms that appear, or other things that were initially unknown to the author.

The data collection technique in this research is by conducting field observations, interviews and documentation. To determine informants in this research, researchers used Purposive Sampling and Snowball Sampling techniques (Lenaini et al., 2021). The informant sample represented by one of PT Pertamina Hulu Energi WMO (totaling 1 person) used the Snowball Sampling technique, while the use of the Purposive Sampling technique was represented by the Fleuir Youth Organization (KUBE) group (totaling 2 people). This research aims to explain/describe the CSR program based on community empowerment in the village.

## RESULTS AND DISCUSSION

In this section, the researcher will present the results and discussion of the Corporate Social Responsibility Program: Based on Community Empowerment in the Village. The Corporate Social Responsibility Program was developed as a community empowerment-based program that has a form of program in its implementation depending on company policy. In this research, PT Pertamina Hulu Energi West Madura Offshore is a state-owned company that is growing rapidly in the field of oil management. This company produces pure oil from the Gresik-madura region, which has oil raw materials.

Therefore, the aim of this research is to reveal the role of Corporate Social Responsibility of PT Pertamina Hulu Energi West Madura Offshore, especially the community empowerment program, and what impact it has produced. Then to start the discussion in this study, researchers identified the main things in Corporate Social Responsibility (CSR) according to Sen and Bhattacharya. The results of the research and discussion are as follows:

### Community Support

#### *Education sector*

In the field of education, there are often many problems, ranging from problems with the physical condition of schools, the relevance of education to needs, and the low quality of education (Agustang et al., 2021). Therefore, the CSR of PT Pertamina Hulu Energi WMO intervenes to help overcome existing problems. The program created must be based on problems that occur in the community so that the program established can be useful and beneficial to the surrounding community (Ramada et al., 2020). This community support/community development program's activities are carefully planned and carried out to assist development and increase HDI covering the fields of education, health and the economy (Mulyana & Zainuddin, 2017).

In this field of education, there are several programs created by CSR PT Pertamina Hulu Energi WMO including: Cooperating with the Sidorukun Village Government to renovate the Sidorukun Gresik Elementary School building, increasing Human Resources by holding job training, and providing scholarships (Figure 2 and Figure 3).



Figure 2. Providing educational scholarship assistance





Figure 3. Security Garda Pratama training

Scholarships are assistance to continue education. Scholarships can be categorized as gifts without fees or gifts with work ties, or service ties, after the scholarship recipient completes his education (Liesnaningsih et al., 2020). Scholarship assistance is provided in order to help the community to be able to receive formal education, through this scholarship assistance it is hoped that it can increase the enthusiasm for learning and achieve their goals. In addition, to foster an interest in reading to students, PT Pertamina Hulu Energi WMO also provides books for the school library to increase students' insight and knowledge so that they can learn more.

#### **Health sector**

Similar to the education sector, the health sector also requires serious attention because it affects the quality of life of the community (Firliani, 2022). PT Pertamina Hulu Energi West Madura Offshore provides various health programs, including health counseling for children, pregnant and lactating mothers, providing masks and hand sanitizers, and procuring health center equipment to support these activities (Figure 4).



Figure 4. Providing masks and hand sanitizer to the Sidorukun village community

#### **Development of Small and Medium Enterprises**

Given that the tendency of people in entrepreneurship is to look for small risks, this method is usually used by entrepreneurs with very minimal experience capital (Malik & Mulyono, 2017). PT Pertamina Hulu Energi WMO understands the conditions of the surrounding community and tries to help fulfill what they want. Through this community empowerment activity, PT Pertamina Hulu Energi WMO organizes training and skills activities for the Sidorukun community, thus that the community can still feel the positive impact of the empowerment activities provided by the company.

PT Pertamina Hulu Energi WMO applies the principles of Sustainable Development with the purpose of the company's Corporate Social Responsibility and not eliminating the rights of the community in the future (Octaviani et al., 2022). Therefore, companies work together to realize sustainable programs for the community as an effort to build good relations in the future. Sustainable development programs are programs that focus on the needs of the community, such as business training, procurement of merchandise, grouping, and management management assistance. In this case, PT Pertamina Hulu Energi WMO held a Joint Business Group (KUBE) training and development program because it saw a lot of potential that would be obtained through this program. KUBE itself is an activity that is designed and carried out together, but the income earned by each individual KUBE participant is not necessarily the same amount, this is influenced by the contributions of each member participating in meetings and works (Figure 5).



Figure 5. Training and development of mushroom cultivation of KUBE

### **Diversity**

In terms of company policies related to gender, physical (disability) and certain races, PT Pertamina Hulu Energi WMO does not discriminate against the community in the implementation of these community empowerment activities. The community gets the same treatment without getting improper treatment (Maisyura & Ameliany, 2021).

### **Employee Support**

The company provides support for its employees through fair behavior between employees, support for employee welfare from supervisors, awards given by the company to employees, and a safe and comfortable work environment (Prastyo, 2020). In this dimension, PT Pertamina Hulu Energi WMO as the perpetrator of community empowerment activities pays attention to the safety and health of the community when undergoing community empowerment activities/programs. So that the community can follow it in good physical condition with a sense of security and comfort.

### **Environment**

#### **Environmental Preservation**

PT Pertamina Hulu Energi WMO understands that its location in the coastal area is very important to maintain the balance of nature through nature conservation activities. The activities carried out by PT Pertamina Hulu Energi WMO are as follows: domestic waste management by conducting counseling and procuring composter equipment, planting mangrove trees around the coast, and assisting the Adiwiyata program.

### **Non-U.S. Operations**

#### **Employment Opportunities**

Workers are one of the most important components in a business. No business can be run by an entrepreneur alone. One of the ways a company can grow quickly is by assembling a team of skilled workers. Workers are people who work by expending energy to produce goods or services and earn wages on a monthly or direct basis. In addition, employment opportunities can be defined as the number of jobs that are available and those that have not been filled are filled or unfilled (Saputra et al., 2021).

The increase in orders produced by the Sidorukun village community that runs consistently will clearly have an impact on the additional number of workers needed to improve the production process in terms of quantity and quality of goods produced. The increase in production must also be accompanied by an increase in the welfare of the workers, so it can be said that business actors have helped the government's task in improving the welfare of the community while providing employment.

At present, unemployment can be saved by the availability of jobs in the informal sector. Therefore, small and medium enterprises have done social good for others and themselves in current socio-economic reality (Arifin & Firmsyah, 2017).

### **Product**

Seeing the geographical condition of Gresik Regency which is located in the coastal area, so that Sidorukun village has potential in the mushroom cultivation sector. The potential of the Karang Taruna group involved in empowerment and community activities supports this. Seeing this potential, PT Pertamina Hulu Energi WMO began to pioneer assistance and cooperation programs to prepare for an independent community economic life in its working area. The initial conditions in this oyster mushroom cultivation business, Karang Taruna Sidorukun Village have several obstacles and limitations that do not yet have competence in their fields and also limited business support facilities and infrastructure. Facilities and infrastructure in this initial condition include: lack of new barns and baglogs used for oyster mushroom cultivation. After knowing the problems and obstacles faced in the field, targets and strategies for program implementation, availability of human resources, area mapping, allocation of funds, and implementation and evaluation strategies are carried out (Yuliarini et al., 2021).

After the planning stage is carried out, PT Pertamina Hulu Energi WMO provides a periodic socialization stage by PHE WMO Corporate Social Responsibility members by gathering and conducting meetings with KUBE. The community involved in KUBE is provided with training to process oyster mushrooms into processed products in the form of wet and dry food products and explain the potential and opportunities that local residents have in developing oyster mushroom processed products. Because initially this oyster mushroom cultivation activity had indeed been carried out by the Fleur Youth Organization (KUBE) group in RW. 04 but the implementation of its activities was not optimal. The youth group submitted a proposal to partner with PT Pertamina Hulu Energi WMO Corporate Social Responsibility to conduct a partnership in the hope of developing its business. Because the youth group wants to make innovations in order to reach the empowerment aspects of the community in Sidorukun village so that cooperation with the CSR of PT Pertamina Hulu Energi WMO program is carried out. PT Pertamina Hulu Energi WMO provides 400,000 Baglogs, where mushroom seeds are stored, can produce 20 kg of mushrooms every day and produce an average of 400,000 rupiah every day. It is expected that these results can meet the demand of traditional markets and even existing malls in Gresik Regency. KUBE is responsible for program implementation, but PT Pertamina Hulu Energi WMO continues to provide assistance, supervision, and program assistance (Ratih & Chandra., 2018)

### **Community Empowerment through Corporate Social Responsibility PT. Pertamina Hulu Energi WMO**

In the community empowerment activities that have been carried out, Corporate Social Responsibility PT Pertamina Hulu Energi WMO sees a lot of potential generated in the oyster mushroom cultivation business activities so that community empowerment through this oyster mushroom cultivation business is the main activity carried out, because through the empowerment activities of this oyster mushroom cultivation business, it has changed the lives of the Sidorukun Village community to be more prosperous (Figure 6).

The results of the changes/transformation that occurred are as follows:

#### ***Transformation of Increased Community Income***

The form of welfare achievement through one of the oyster mushroom cultivation-based economic empowerment programs is an increase in welfare from the main livelihood of the majority of fishermen, then there is a change in the additional income of the Sidorukun Village KUBE group. People who previously did not have additional income, with the development of oyster mushroom cultivation business as a form of cooperation assisted by Corporate Social Responsibility PT. Pertamina Hulu Energi WMO adds a new form of innovation in the form of their daily income.

#### ***Transformation of Community Social Activities***

Since the innovation of processed oyster mushroom cultivation products began to be developed, there has been a change in the transformation of improving the economic welfare of the community, which initially depended on finding a living outside, now many have joined the mushroom cultivation business KUBE so that they can increase their income.



### ***Transformation of Processed Product Innovation***

Companies innovate by making new products that are different from existing products or by improving existing products (Pattipeilohy, 2018). The form of innovation in the development of processed products from the direction of CSR PT Pertamina Hulu Energi WMO wants the availability of processed products with various variants where the raw material comes from oyster mushrooms. Corporate Social Responsibility PT Pertamina Hulu Energi WMO teaches how to process oyster mushroom raw materials so that they can be consumed with various types and quality flavors in order to compete in the market. Thus, various business ideas and innovations emerged from local residents such as: ice fleurir (ice from processed oyster mushrooms), krispi mushrooms, oyster mushroom botok, and oyster mushroom chicken roasted rice.



Figure 6. Processed products of Micro, Small, and Medium Enterprises PT. PHE WMO-assisted.

### ***Simple Digital Marketing Transformation***

Previously, the sales system was carried out by word of mouth, through the development of KUBE they were taught to sell through social media that is familiar to the community such as Facebook, Instagram, and WhatsApp. So that the processed products sold are easier to sell and the market reach is expanding. Businesses must keep up with the increasingly advanced times that are controlled by digitalization (Apriani, 2020).

### ***Relationship Development Transformation***

Through the Corporate Social Responsibility program of PT Pertamina Hulu Energi WMO, the network of cooperation partners is quite felt by the KUBE group and many fellow oyster mushroom entrepreneurs come to learn, where KUBE is used as a reference for the success of the community empowerment program in collaboration with PHE WMO Corporate Social Responsibility.

### ***Human Resource Development***

The development of strong Human Resources in Indonesia to increase national awareness of the industrial revolution 4.0, because Indonesia's strategic position between two continents and two oceans will face many challenges (Shinta & Daihani, 2019). Human Resource Development is carried out in Sidorukun Village such as the large number of workers who initially depended on making a living outside, now many have joined the oyster mushroom cultivation business KUBE so that the community gets additional side income from the oyster mushroom cultivation activities. The improvement of abilities and skills is carried out through innovative activities such as teaching how to make financial reports, forms of online sales through social media and forming confidence to create additional opportunities.

### Addition of Business Development

The form of cooperation between the community represented by Karang Taruna and Corporate Social Responsibility PT Pertamina Hulu Energi WMO in the form of funds purchased tools (baglogs) as mushroom nursery media.

The results of the analysis of the situation by looking at the SWOT analysis factors: (1) Internal factors: (a) Strengths, a sense of optimism that Sidorukun village which has an oyster mushroom cultivation business can be developed by looking at the potential of the operational area; (b) Weaknesses, comes from erratic weather conditions that can affect the harvest period of oyster mushrooms. (2) External factors: (a) Opportunities, namely the consumption of mushrooms which are quite a lot liked in terms of several ages ranging from small children to adults; (b) Threats, namely the increasing number of oyster mushroom cultivation entrepreneurs due to the fairly easy way of cultivating mushrooms.

### CONCLUSION

PT Pertamina Hulu Energi West Madura Offshore's CSR is part of community empowerment. In addition to acting as a company that provides financing or capital to small and medium enterprises, Pertamina Hulu Energi WMO Corporate Social Responsibility has the ability to implement community empowerment programs that can increase productivity and economic welfare, especially in Sidorukun village. PT Pertamina Hulu Energi WMO offers this community empowerment program as a form of social responsibility to residents living around the production site. PT Pertamina Hulu Energi West WMO Corporate Social Responsibility through an oyster mushroom cultivation program carried out by youth groups in Sidorukun village. To encourage community empowerment, the Corporate Social Responsibility program helps expand assets, expand business networks, and provide skills to those who want to become entrepreneurs.

### REFERENCES

- Agustang, A., Mutiara, I. A., & Asrifan, A. (2021). *Masalah pendidikan di Indonesia*. OSFPreprints, 2021, 1-19. <https://doi.org/10.31219/osf.io/9xs4h>
- Apriani, T. (2020). *Strategi pemberdayaan ekonomi UMKM sebagai dampak dari akselerasi transformasi digital menuju era 5 . Fakultas Syariah dan Ekonomi Islam, Universitas Islam Tribakti Lirboyo Kediri , Indonesia*. 81–86.
- Arifin, S., & Firmansyah, F. (2012). *Pengaruh tingkat pendidikan dan kesempatan kerja terhadap pengangguran di Provinsi Banten*. *Jurnal Ekonomi-Qu*, 7(2), 1-9. <http://dx.doi.org/10.35448/jequ.v7i2.4978>
- Chappell, L., & Guerrina, R. (2020). Understanding the gender regime in the European External Action Service. *Cooperation and Conflict*, 55(2), 261-280. <https://doi.org/10.1177/0010836719895296>
- Creswell, J. W., & Creswell, J. D. (2018). Mixed methods procedures. In *Research Design: Qualitative, Quantitative, and Mixed Methods Approaches*. SAGE Publications, Inc.
- Dewi, N. R. (2023). *Serah terima bantuan pendidikan (beasiswa)*. Desember. <https://smkpgri1gresik.sch.id/archives/2195>
- Firliani, S. (2022). Analisis strategi pembangunan kesehatan masyarakat di Indonesia. *ResearchGate*. [https://www.researchgate.net/publication/366605124\\_Analisis\\_Strategi\\_Pembangunan\\_Kesehatan\\_Masyarakat\\_di\\_Indonesia\\_Analisis\\_of\\_Public\\_Health\\_Development\\_Strategy\\_in\\_Indonesia](https://www.researchgate.net/publication/366605124_Analisis_Strategi_Pembangunan_Kesehatan_Masyarakat_di_Indonesia_Analisis_of_Public_Health_Development_Strategy_in_Indonesia)
- Guerrina, D. L. C. and P. R. (2020). *Understanding the Gender Regime in the European External Action Service*. 1, 430–439.
- Hayati, B. N., Hutama, A. Y., Puspitasari, I., & Khatulistiyawati, N. (2023). Pemberdayaan masyarakat pada program CSR satu padu melalui budidaya jamur. *Ininnawa : Jurnal Pengabdian Masyarakat*, 1(2), 162–169. <https://journal.unm.ac.id/index.php/Ininnawa/article/view/574>
- Ibrahim, Mintasrihardi, Kamaluddin, Mas'Ad, & Syukuriadi. (2020). Community empowerment pattern through village-owned enterprise strategy in the gold mine area of West Sumbawa, Indonesia. *IOP Conference Series: Earth and Environmental Science*, 413(1). <https://doi.org/10.1088/1755-1315/413/1/012036>
- Khuong, M. N., Truong N. K., & Hang, T. T. T. (2021) Stakeholders and corporate social responsibility (CSR) programme as key sustainable development strategies to promote corporate reputation—evidence from Vietnam. *Cogent Business & Management*, 8(1), <https://doi.org/10.1080/23311975.2021.1917333>
- Lenaini, I. (2021). Teknik pengambilan sampel purposive dan snowball sampling. *Jurnal Historis*, 6(1), 33–39. <https://journal.ummat.ac.id/index.php/historis/article/view/4075>
- Liesnaningsih, L., Taufiq, R., Destriana, R., & Suyitno, A. P. (2020). Sistem pendukung keputusan penerima beasiswa berbasis WEB menggunakan metode simple additive weighting (SAW) pada Pondok Pesantren Daarul Ahsan. *Jurnal Informatika Universitas Pamulang*, 5(1), 54. <https://doi.org/10.32493/informatika.v5i1.4664>
- Mahendra, B. (2019). Pemberdayaan masyarakat melalui program CSR PT. Angkasa Pura I Yogyakarta (Studi Kasus UMKM Madu Hutan Raya dan Mina Kembar). *Jurnal Agercolere*, 1(2), 30–36. <https://doi.org/10.37195/jac.v1i2.62>
- Maisyura, M., & Ameliany, N. (2021). Deversity management dalam organisasi/perusahaan. *NEGOTIUM: Jurnal Ilmu Administrasi Bisnis*, 4(1), 1-10. <https://ojs.unimal.ac.id/na/article/view/4920>
- Malik, A., & Mulyono, S. E. (2017). Pengembangan kewirausahaan berbasis potensi lokal melalui pemberdayaan

- masyarakat. *Journal of Nonformal Education and Community Empowerment*, 1(1), 87–101.  
<https://doi.org/10.15294/pls.v1i1.15151>
- McBride, C., Costello, N., Ambwani, S., Wilhite, B., & Austin, S. B. (2019). Digital manipulation of images of models' appearance in advertising: strategies for action through law and corporate social responsibility incentives to protect public health. *American Journal of Law & Medicine*, 45(1), 7–31.  
<https://doi.org/10.1177/0098858819849990>
- Mulyana, N., & Zainuddin, M. (2017). Model pemberdayaan masyarakat melalui program corporate social responsibility (Kasus Pelaksanaan CSR oleh PT Pertamina UP-IV Balongan). *Prosiding Penelitian Dan Pengabdian Kepada Masyarakat*, 4(1), 80. <https://doi.org/10.24198/jppm.v4i1.14212>
- Nur, M. P., Aqil, M., Al Khaeriyah, N., & Azzahra Fitriani, P. (2023). Functions of corporate social responsibility (CSR) for community empowerment. *Educationist: Journal of Educational and Cultural Studies*, 2(1), 25–33. Retrieved from <https://jurnal.litnuspublisher.com/index.php/jecs/article/view/86>
- Octaviani, F., Raharjo, S. T., & Resnawaty, R. (2022). Strategi komunikasi dalam corporate social responsibility perusahaan sebagai upaya pemberdayaan masyarakat. *Jurnal Ilmu Kesejahteraan Sosial HUMANITAS*, 4(1), 21–33. <https://doi.org/10.23969/humanitas.v4i1.4882>
- Pranoto, A. R., & Yusuf, D. (2016). Program CSR berbasis pemberdayaan masyarakat menuju kemandirian ekonomi pasca tambang di Desa Sariy aya. *Jurnal Ilmu Sosial Dan Ilmu Politik*, 18(1), 39. <https://doi.org/10.22146/jsp.13094>
- Prastyo, B. (2020). Pengaruh perceived organizational support terhadap kinerja karyawan melalui employee engagement: Sebuah studi literatur. *BIMA : Journal of Business and Innovation Management*, 3, 59–72. <https://ejournal.feunhasy.ac.id/bima/article/view/310/173>
- Pujayanti, T. (2022). Pemberdayaan masyarakat melalui program CSR PT PJB UBJOM PLTU Tenayan. *PUBLIKA : Jurnal Ilmu Administrasi Publik*, 7(2), 240–248. [https://doi.org/10.25299/jiap.2021.vol7\(2\).7178](https://doi.org/10.25299/jiap.2021.vol7(2).7178)
- Ramada, I. R., Dewi, A. N. F., Rahayu, A. O. G., & Humaedi, S. (2020). Corporate social responsibility (CSR) dalam pemberdayaan masyarakat melalui bank sampah. *Prosiding Penelitian & Pengabdian Kepada Masyarakat*, 7(1), 21–26. <https://doi.org/10.24198/jppm.v7i1.28560>
- Rasyid, A., Saleh, A., Cangara, H., & Priatna, W. B. (2015). (2) Komunikasi dalam CSR perusahaan pemberdayaan masyarakat. *Jurnal Mimbar*, 31, 507–518.
- Ratih, P. & Chandra, (2018). The impact of the entrepreneurial ecosystem on regional competitive advantage: A network theory perspective. *Russian Journal of Agricultural and Socio-Economic Sciences*, 11(83), 49–63. <https://doi.org/10.18551/rjoas.2018-11.07>
- Saputra, T. F., Rajuni, D., & Sukiman, S. (2021). Faktor-Faktor yang mempengaruhi kesempatan kerja di Provinsi Banten tahun 2010-2019. *Jurnal Ekonomi-Qu*, 11(1), 37. <https://doi.org/10.35448/jequ.v11i1.11274>
- Sen, S., & Bhattacharya, C. B. (2001). Does doing good always lead to doing better? Consumer reactions to corporate social responsibility. *Journal of Marketing Research*, 38(2), 225–243. <https://doi.org/10.1509/jmkr.38.2.225.18838>
- Shinta, A., & Daihani, D. U. (2019). Pengembangan kualitas SDM untuk memperkuat kewaspadaan nasional. *Prosiding Seminar Nasional Hasil-Hasil Penelitian dan Pengabdian Masyarakat*, 1, 388–398. <https://semnaslppm.ump.ac.id/index.php/semnaslppm/article/view/65>
- Stahl, G. K., Brewster, C. J., Collings, D. G., & Hajro, A. (2020). Enhancing the role of human resource management in corporate sustainability and social responsibility: A multi-stakeholder, multidimensional approach to HRM. *Human Resource Management Review*, 30(3). <https://doi.org/10.1016/j.hrmmr.2019.100708>
- Suhendra, S. (2015). Inilah beberapa definisi pemberdayaan masyarakat menurut para ahli. *Materibelajar.Id*. <https://www.materibelajar.id/2015/12/inilah-beberapa-definisi-pemberdayaan.html>
- Sumaryadi, S. (2005). Pemberdayaan masyarakat: Konsep pembangunan yang berakar pada masyarakat. BAPPENAS.
- Tenny, S., Brannan, J. M., Brannan, G. D. (2022). Qualitative study. In: StatPearls [Internet]. Treasure Island (FL): StatPearls Publishing. <https://www.ncbi.nlm.nih.gov/books/NBK470395/>
- Yuliarini, S., Inayati, T., & Suharnanik, S. (2021). Potensi komersialisasi jamur susu (*Calocybe Indica*) pada petani jamur (Pengabdian masyarakat Desa Pondok Jeruk-Tanggul Kab. Jember). *Buletin Abdi Masyarakat*, 2(1), 40–52. <https://doi.org/10.47686/bam.v2i1.401>



# Tri Hita Karana for environmental resilience: Enhancing coral reef conservation and sustainable practices in Mengiat Beach Bali

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ARTICLE INFO	ABSTRACT
<p><b>Article history</b>            Received: 2023-10-27            Revised: 2024-01-16            Accepted: 2024-01-20            Published: 2024-01-27</p> <p><b>Keywords</b>            Coral reef conservation            Environmental resilience            International community service            Sustainable practices            Tri Hita Karana</p>	<p><i>This collaborative international community service initiative applies the Tri Hita Karana philosophy to improve coral reef conservation at Bali's Mengiat Beach. The collaboration between Universitas Ngurah Rai and the University of Canberra integrates traditional wisdom and innovative methods, promoting resilience, sustainable practices, and economic growth while adhering to Tri Hita Karana's holistic principles. The initiative program combines Marine Protected Areas (MPAs) and the Mars Assisted Restoration System (MARRS) to safeguard coral ecosystems. Participatory Action Research (PAR) empowers communities, aligning with the holistic principles of Tri Hita Karana. The methodology encompasses preparation, education, hands-on training, beach clean-ups, and continuous evaluation, reinforcing coral preservation while promoting sustainable practices and ecological well-being. These strategies align with the Tri Hita Karana philosophy, promoting local engagement and resource management. The donation of Reef Stars by the universities to the Bali Coastal and Marine Biodiversity Foundation reflects a commitment to environmental well-being and long-term harmony. The Mengiat Beach collaboration by two universities and the Bali Coastal and Marine Biodiversity Foundation integrates traditional wisdom and modern methods within the Tri Hita Karana philosophy. Through education, training, and reef restoration, the initiative emphasizes community engagement and ecological resilience.</i></p>
<p><b>Kata Kunci</b>            Ketahanan lingkungan            Konservasi terumbu karang            Pengabdian masyarakat internasional            Praktik berkelanjutan            Tri Hita Karana</p>	<p><b>Tri Hita Karana untuk ketahanan lingkungan: Meningkatkan konservasi terumbu karang dan praktik berkelanjutan di Pantai Mengiat Bali.</b> Inisiatif pengabdian masyarakat internasional kolaboratif ini menerapkan filosofi Tri Hita Karana untuk meningkatkan konservasi terumbu karang di Pantai Mengiat Bali. Kolaborasi antara Universitas Ngurah Rai dan University of Canberra mengintegrasikan kearifan tradisional dan metode inovatif, mengedepankan ketahanan, praktik berkelanjutan, dan pertumbuhan ekonomi dengan tetap berpegang pada prinsip holistik Tri Hita Karana. Program inisiatif ini menggabungkan Kawasan Konservasi Laut dan Sistem Restorasi Berbantuan Mars untuk menjaga ekosistem karang. Penelitian Tindakan Partisipatif memberdayakan masyarakat, selaras dengan prinsip holistik Tri Hita Karana. Metodologinya mencakup persiapan, pendidikan, pelatihan langsung, pembersihan pantai, dan evaluasi berkelanjutan, memperkuat pelestarian karang sekaligus mendorong praktik berkelanjutan dan kesejahteraan ekologis. Strategi-strategi ini sejalan dengan filosofi Tri Hita Karana, yang mendorong keterlibatan lokal dan pengelolaan sumber daya. Sumbangan Reef Stars oleh universitas-universitas kepada Yayasan Keanekaragaman Hayati Pesisir dan Laut Bali mencerminkan komitmen terhadap kesejahteraan lingkungan dan keharmonisan jangka panjang. Kolaborasi Pantai Mengiat yang dilakukan dua universitas dan Yayasan Keanekaragaman Hayati Pesisir dan Laut Bali mengintegrasikan kearifan tradisional dan metode modern dalam filosofi Tri Hita Karana. Melalui pendidikan, pelatihan, dan restorasi terumbu karang, inisiatif ini menekankan keterlibatan masyarakat dan ketahanan ekologi.</p> <p style="text-align: right;">Copyright © 2024 Suryawan et al            This is an open access article under the CC-BY-SA license</p> <div style="text-align: right;">  </div>

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## INTRODUCTION

Our oceans provide an abundance of advantages, from coastal protection to nourishment, livelihoods, and carbon storage, yet they are under increasing strain, threatening their health and the benefits that they provide (Estradivari, et al., 2022). In the face of mounting global environmental challenges, the pursuit of sustainable development has gained utmost importance (Biermann, Kanie, & Kim, 2017). The concept of marine sustainability, which is firmly rooted in the values of responsible use of marine resources, has garnered a lot of attention as a potential framework for bringing seemingly unrelated goals within the larger context of the Blue Economy, which is defined by (Elegbede, Akintola, Jimoh, & Jolaosho, 2023) as the sustainable use of ocean and coastal resources for economic growth, improved livelihoods, and job creation while protecting the health of marine ecosystems. This paradigm has sparked vibrant discussions at the local, national, and international levels by seeking to protect marine ecosystems while advancing economic development.

The Sustainable Development Goals (SDGs) were universally agreed by all UN member states in 2015, enshrining a comprehensive and collaborative call to action to eliminate poverty, protect the environment, and promote global well-being and peace by 2030. The SDGs, which consist of 17 specific objectives, reveal a deep interconnection by acknowledging that actions performed in one domain can have implications in others, emphasizing the importance of striking an optimal equilibrium between social, economic, and environmental sustainability (United Nations, 2018). Preserving the Earth's oceans is a key component of the 17 Global Goals, particularly SDG 14, titled "Life Below Water." The primary goal of SDG 14 is to ensure the sustainable management of marine and coastal ecosystems, which includes initiatives to preserve them from pollution and mitigate the negative consequences of ocean acidification. The underlying rationale for SDG 14 is based on the recognition that the planet's oceans, which are distinguished by their intricate interplay of temperature, chemical composition, currents, and biodiversity, serve as the driving force behind the global systems that maintain habitability for human existence. The judicious management of this invaluable natural treasure is undeniably important, stressing its critical role in creating humanity's future and reducing the far-reaching consequences of climate change. Furthermore, the establishment of Marine Protected Areas (MPAs), which are meant to protect vital marine ecosystems, has the potential to promote sustainable use of marine resources. This approach attempts to not only conserve these essential habitats but also ensure that populations relying on the ocean may reap the benefits of MPA implementation (BAPPENAS, 2021).

Coral reefs, famous for their unmatched variety of life forms, play a crucial role in supporting marine ecosystems and meeting the needs of coastal communities (Hughes, et al., 2018). However, these delicate ecosystems are facing immediate danger due to global warming, contamination, and unsustainable tourism practices (Yonvitner, et al., 2022). Located in the prestigious Nusa Dua, Mengiat Beach is experiencing significant pressures that have resulted in the deterioration of coral formations and a simultaneous decrease in biodiversity. Recognizing the urgency of the situation, a cooperative effort has been organized between the Faculty of Economics and Business at Universitas Ngurah Rai and the University of Canberra. This partnership, additionally facilitated by the Coastal and Marine Biodiversity Foundation Bali, aims to combine traditional knowledge and sustainable methods, thereby enhancing sustainable development by placing a stronger emphasis on the preservation of coral reefs. This approach also aims to overcome the challenges in coral restoration as stated by Boström-Einarsson, et al. (2020) that include 1) The absence of well-defined and attainable goals, 2) The absence of appropriate and standardized tracking and documenting processes, and 3) Efforts that are poorly designed in relation to their intended objectives.

Within this context, the Tri Hita Karana philosophy, deeply ingrained in Balinese customs, emerges as a crucial paradigm that emphasizes the interconnected relationships between humans, nature, and the spiritual realm. For Balinese people, Tri Hita Karana is primarily a valuable, wonderful teaching concept emphasizing three harmonious human interactions in worldly life, especially the relationship between humans and God (Parahyangan), humans and humans (Pawongan), and humans and nature (Palemahan). Each part of a relationship has a life lesson that might help you appreciate the other aspects around you. This Tri Hita Karana is meant to be applied by Balinese society in order for them to enjoy a prosperous and balanced life (Hadiyanto, 2022). By utilizing the principles of Tri Hita Karana, particularly through an international community service program, this endeavor not only demonstrates the potential to enhance environmental resilience but also pledges to elevate the socio-ecological well-being of local communities. Tri Hita Karana also contribute to the cultural preservation and sustainable development of the local community by instilling moral awareness, religious ethics, and ecological wisdom (Adnyani & Purnamawati, 2020).

The Tri Hita Karana philosophy, firmly ingrained in Balinese Hindu traditions, embodies three interconnected relationships: the balance between humans and the divine, between humans and the natural world, and among fellow humans (Yasa, 2022). Subsequently, Astuti, Ginaya, & Susyarini (2019) also explain that Tri Hita Karana timeless philosophy has actively guided Balinese society, fostering a holistic understanding of interdependence and balance. Importantly, within the realm of environmental resilience, the principle of Parahyangan resonates with spiritual reverence for the environment, aligning with contemporary concepts of ecological spirituality. The principle of Pawongan emphasizes the importance of harmonious social interactions, echoing community-focused approaches to conservation and sustainable practices. Furthermore, the principle of Palemahan highlights responsible resource management, echoing modern principles of environmental stewardship (Qodim, 2023).

Additionally, the concept of *Awig-Awig*, or written customary law in Bali, arose in response to the necessity to establish order and harmony within distinct customary communities. These communities, with their distinct traits, required specific methods and rules. The content of *Awig-Awig*, for example, varies according to the distinct natural circumstances of coastal and plain regions. *Awig-Awig* concerns the usage of marine resources and the management of tourism potential in coastal locations. Pandawa Beach in the Kutuh Village area in South of Bali, for example, is a popular tourist site in Bali. The local *Awig-Awig* establishes requirements for beach maintenance, even in the middle of a large tourist influx. *Awig-Awig* governs rituals as well as natural conditions, although the particular procedural parts of these ceremonies vary between villages. This differentiation is a distinguishing feature of *Awig-Awig* in coastal and plain locations. Despite the impact of tourism on Balinese culture, *Awig-Awig* is still relevant in today's globalized world. It is a source of customary law that is supplemented by a more comprehensive implementing regulation called *Pararem*. *Pararem* is designed to the specific needs of indigenous groups as well as the modern situation (Yulianingsih, Indawati, & Kartika, 2021).

Implementing the Tri Hita Karana principle to enhance coral reef preservation at Mengiat Beach requires a diverse strategy that combines ecological knowledge and community involvement, as previously shown by the restoration of coral reefs effort in Pemuteran, Bali (Trialfhianty & Suadi, 2017). In this cooperative endeavor, the Faculty of Economics and Business Universitas Ngurah Rai and the University of Canberra, in partnership with Bali Coastal and Marine Biodiversity Foundation and the local communities, embark on an innovative path of coral conservation. This cooperation demonstrates its dedication to sustainable practices by contributing coral saplings and growth materials. Through this initiative, the universities, local communities, and the foundation collaborate to establish resilient marine protected areas and to enhance waste management practices. Together, they foster a balanced ecosystem that reflects the principles of Tri Hita Karana. The effectiveness of similar collaborative conservation efforts, as demonstrated by community-led initiatives at Tianyar Village in North Bali, reaffirms the efficacy of such comprehensive approaches (Boakes, Mahyuni, Stafford, & Cvitanovic, 2022).

The international community service program, achieved through the collaboration between the Faculty of Economics and Business Universitas Ngurah Rai, the University of Canberra, as well as the Bali Coastal and Marine Biodiversity Foundation, stands as an innovative effort combining ancestral wisdom with technical methodologies. According to Suamba & Utama (2017), the Tri Hita Karana philosophy provides a comprehensive framework that seamlessly aligns with contemporary ecological and sustainability principles. By fostering a deep connection between humanity, nature, spirituality, and with the invaluable support from both universities and the foundation, this cooperative initiative not only revitalizes the coral ecosystems of Mengiat Beach, however it also supports sustainable practices, enhances local resilience, and improves the well-being of the local communities. This form of Traditional Environmental Knowledge (TEK) or Complex Knowledge-Practice-Belief System, as stated by Gómez-Baggethun, Corbera, & Reyes-García (2013), serves as a significant step towards bridging the divide between traditional knowledge and modern innovation, all in the tireless pursuit of advancing environmental conservation and sustainable progress (Kuhn & Duerden, 2021). As explained by (Qodim, 2023), Traditional Ecological Knowledge (TEK) is a beneficial approach to ecological concerns. It includes both individual and indigenous cultures' ways and practices of interacting with the natural world. In contrast to current scientific ideas, TEK provides an alternative paradigm for tackling ecological challenges by drawing on a varied array of centuries-old local wisdom. TEK is a body of knowledge and cultural ideas passed down through generations, with a particular emphasis on the interconnection of all living beings, including people, and their surroundings.

This article urgently contributes to meeting the Sustainable Development Goals (SDGs) by tackling the growing risks to the world's oceans. It focuses on the Blue Economy principles, emphasizing the importance of balancing environmental conservation, economic growth, and sustainable development, particularly in coastal areas. The article bridges understanding gaps and coincides with the Tri Hita Karana concept, promoting environmental resilience and socio-ecological well-being through collaborative efforts at Mengiat Beach that combine traditional knowledge and sustainable practices. This collaborative effort complies with the Blue Economy principles, which emphasize the sustainable utilization of ocean resources to promote economic prosperity while simultaneously preserving the marine ecosystem and ensuring the sustainable management of ocean resources (Vierros & Fontaubert, 2017). This alignment with the Blue Economy concept is significant as it emphasizes not solely the conservation of coral ecosystems but also the broader economic advantages for local communities (Midlen, 2021). Subsequently, the combination of *Awig-Awig* and cultural values emphasizes personalized approaches for varied coastal populations, while the focus on coral reef preservation adds an important component. By combining these factors, the article presents a complete framework for accomplishing the SDGs while also promoting environmental conservation and sustainable development.

In addition, the article underlines the significance of safeguarding marine protected areas, following good governance practices, promoting sustainable tourism, and optimizing the management of waste. These activities not only help the environment, but also increase the region's international visibility and promote international tourism (Benzaken, Voyer, Poupponeau, & Hanich, 2022). Subsequently, the article discusses the potential for sustainable coastal tourism by emphasizing the appealing nature of flourishing coral reefs and pristine coastal landscapes for tourists who seek genuine and sustainable travel experiences (Senthilkumar, 2022). This article seeks to fill the gap in the literature by integrating environmental protection, economic growth, and sustainable tourism within the framework of ocean resources and coastal ecosystems, with a specific emphasis on Blue Economy concepts.



## METHOD

The success of this coral reef conservation and sustainable practices effort at Mengiat Beach, Nusa Dua, Bali, hinges on multiple parameters (Figure 1). Adopting a Marine Protected Area (MPA) approach that is consistent with NOAA's (2023) definition assures the long-term preservation of marine resources, ecological functions, and cultural heritage. Coral nurseries, as found by Mellin et al. (2016), help coral reefs withstand natural disturbances. The Participatory Action Research (PAR) approach emphasizes community as the major driver of transformative change, encouraging ecological responsibility and sustainable practices. During the preparatory phase, the partnership between universities and the Bali Coastal and Marine Biodiversity Foundation lays the framework for community participation. Education that focuses on coral restoration and is consistent with the Tri Hita Karana philosophy's Parahyangan concept promotes environmental awareness and spiritual appreciation. The training highlights coral adoption methods, which are consistent with the Pawongan principle of the Tri Hita Karana philosophy, which promotes community-centered strategies. The beach clean-up action immediately addresses garbage management and environmental cleanliness challenges, hence promoting a healthy coastal habitat. The sustainable evaluation phase, inspired by Obura et al. (2019) and Edmunds & Riegl (2020), includes ongoing monitoring to fine-tune conservation measures and maintain long-term health and resilience. This complete approach, which incorporates both traditional wisdom and contemporary knowledge, is consistent with the Tri Hita Karana philosophy, which emphasizes interconnectedness, long-term well-being, and a healthy ecosystem.



Figure 1. International Collaborative Endeavor to Preserve and Conserve Coral Reefs at Mengiat Beach, Nusa Dua, Bali

The Participatory Action Research (PAR) framework is used in this international joint initiative, as this peculiar approach positions the community as the primary driver for transformative change, which resonates strongly with the initiative's goal of fostering ecological responsibility and sustainable practices (Grimwood, 2022). In these circumstances, lecturers and students of both universities are facilitators, directing a dynamic process to promote community participation in conservation initiatives. This multinational collaboration is critical for harnessing and spreading varied viewpoints and experiences, which is critical for the initiative's success in enhancing coral reef conservation and extending sustainable practices at Mengiat Beach, Nusa Dua, Bali. The methodical approach employed at Mengiat Beach to improve coral reef conservation and sustainable practices encapsulates the spirit of the Tri Hita Karana philosophy. The initiative addresses the critical issues faced by coral ecosystems while encouraging community resilience and promoting sustainable tourism by merging traditional wisdom with contemporary knowledge. This international community service program was carried out in a series of steps, which include:

### Preparation

The preliminary phase marked the start of the collaborative endeavor, which was organized by the team of Faculty of Economics and Business Universitas Ngurah Rai in collaboration with the Bali Coastal and Marine Biodiversity Foundation. This interaction embodied the essence of community involvement and collaboration, matching the basic values of Mengiat Beach's coral preservation operations. The discussion at this meeting not only clarified the requirements for the upcoming activities but also detailed the framework for carrying out the Community Service projects aimed at protecting the coral reef ecosystem in Mengiat Beach, Nusa Dua. The collaboration between the University team and the Bali Coastal

and Marine Biodiversity Foundation aims to protect coral ecosystems, by undertaking coral conservation and preservation, as well as beach clean-up operations, together with the students of the University of Canberra.



Figure 2. Preliminary Meeting Between the Team of Faculty of Economics and Business UNR with Bali Coastal and Marine Biodiversity Foundation

### Education

Education is one of the primary approaches applied, with the objective of imparting a full grasp of the challenges faced as well as conveying possible solutions as well as desired outcomes. Coral restoration is becoming more popular as a management option to slow the rate of coral reef degradation caused by climate change. Nonetheless, the science of coral restoration is currently heavily focused on ecological and technical factors, making it difficult to grasp how coral restoration might be used to improve reef resilience in the context of socio-ecological systems (Hein, et al., 2019). This educational strategy aligns with the Tri Hita Karana philosophy's Parahyangan principle, which promotes spiritual appreciation for nature (Qodim, 2023). The effort also resonates with the philosophy's ethos of harmonious human-nature relationships by establishing a sense of stewardship and fostering awareness among local communities and stakeholders.



Figure 3. Education Session: The Importance of Coral Conservation and Preservation

### Training and Coral Adoption

According to Oppen, et al. (2017), Ecological Restoration is defined as the process of assisting in the recovery of an ecosystem that has been degraded, damaged, or destroyed, with the restored community being self-sustaining. An important element of the concept is an extensive training session focused on coral adoption and binding procedures. This initiative teaches participants how to adopt and securely attach coral fragments onto binding media, which are subsequently placed on the seabed at Mengiat Beach, as a Marine Protected Area (MPA). This hands-on training connects strongly with the Tri Hita Karana philosophy's Pawongan principle, which emphasizes harmonious social interactions and community-centered strategies (Qodim, 2023). This approach enhances the ecological integrity of the maritime



environment by encouraging people and communities to actively contribute to coral preservation, as it has been shown by Assa & Adirinekso (2022), who found that in order to prevent coral reef destruction, which has an impact on people's livelihoods, the community has carried out conservation measures in Ujung Genteng, Sukabumi, by involving diverse stakeholders. It has been shown that the community could have a role in preserving and conserving the marine environment, particularly the coral reef ecosystem, by working with associated agencies and CSR and directly with the local population.



Figure 4. Coral Adoption and Coral Placement on the Seabed of Mengiat Beach

#### Beach Clean-up Activity

In keeping with the main aim of coral reef protection and sustainable practices, the collaborative endeavor goes beyond education and training by actively engaging in hands-on activities. One such essential element is student participation in beach clean-up efforts along the Mengiat Beach coastline. These initiatives are intended to address the pressing issues of waste management and environmental cleanliness, demonstrating an approach to promoting a healthy coastal habitat. The involvement of students in beach clean-up activities along the Mengiat Beach shoreline demonstrates the collaboration's commitment to proactive waste management and environmental cleanliness. Students' active participation not only contributes to the immediate improvement of the coastal landscape but also the preservation of the ecosystem's delicate balance, echoing the Tri Hita Karana philosophy and the initiative's overarching goals of coral reef conservation and sustainable practices. The exchange of ideas between education institutions and coastal management can be a didactically viable way to contribute to both content acquisition and the training of student-citizens who are more conscious of their obligations as transforming, dependent, and responsible environmental agents (Araújo & Albino, 2020).



Figure 5. Clean-up Efforts Along the Mengiat Beach Coastline

#### Sustainable Evaluation

In the context of protecting coral reefs, it is critical to emphasize an important factor for ecological well-being, namely the critical role that coral reefs play in maintaining marine biodiversity and offering vital ecological services. Many marine species depend on coral reefs for their crucial homes. These ecosystems are recognized for their exceptional biodiversity.

The richness and diversity of marine life are supported by the protected habitat that coral formations provide. In addition, coral reefs play a major role in carbon sequestration, nitrogen cycling, and coastline protection. Given how heavily humans depend on coral ecosystems for economic activity, dietary needs, and coastline protection from natural calamities, the health and resilience of these ecosystems are critical. Consequently, monitoring coral reef state and changes is critical for improving science, management, and policy (Obura, et al., 2019). In addition, Edmunds & Riegl (2020) also stated that widespread declines in coral population have fueled a shift in motivation for reef studies and accelerated the monitoring efforts to record the changes taking place. This methodology strives to refine and improve the execution of conservation efforts by critically evaluating all stages of the activities, aligning with the philosophy's dedication to balance and harmony. This involves monitoring ongoing activities even after the formal program finishes to ensure their seamless continuation by committed partners. This proactive participation entails providing periodic updates and information on the progress and growth of the adopted coral fragments to adopters via email. This method strengthens a community commitment to the long-term health and resilience of the coral ecosystems at Mengiat Beach by establishing continuing connections and communication with participants, adopters and partners. This is consistent with the Tri Hita Karana philosophy's enduring ethos, which emphasizes interconnection and long-term well-being.



Figure 6. Progress and Growth of the Adopted Coral Fragments

## RESULTS AND DISCUSSION

The conservation program includes the preservation of Marine Protected Areas (MPAs) that act as havens for coral ecosystems. A Marine Protected Area (MPA) is defined as a specified area designated and managed for the long-term conservation of marine resources, ecological services, and cultural heritage (NOOA, 2023). Coral propagation is a significant approach used within these specified zones. MPAs that are well-managed and enforced have the potential to expand or sustain the diversity and function of the protected coral reef, with some of the benefits extending to adjacent non-protected reefs (Bonaldo, Pires, Junior, Hoey, & Hay, 2017). Coral nurseries are built to house coral fragments that are nourished and propagated to restore and improve the health of the reef. This strategy is consistent with previous research by Mellin, MacNeil, Cheal, Emslie, & Caley (2016) demonstrating the MPAs can boost coral reef populations' resilience to natural disturbances such as coral bleaching, coral diseases, and storms. Furthermore, these MPAs help to maintain biodiversity and healthy fish populations (Rojo, Sánchez-Meca, & García-Charton, 2019).

A variety of coral species, including but not limited to *Acropora*, *Porites*, and *Pocillopora* species are carefully cultivated at the coral nurseries at Mengiat Beach. These species have been chosen due to their ecological significance and degree of environmental adaptation. Coral survival points are established by a rigorous assessment process that takes into account variables including temperature, nutrition availability, and water quality. Although the exact numbers for survival points might change based on the type of coral and the local environment, the assessment guarantees that the cultured corals are hardy and suitable to prosper in Mengiat Beach's maritime environment.

Subsequently, community engagement spans an ongoing timeframe, with activities strategically organized throughout the year to maintain sustained interest and commitment. Evaluation data from community activities are critical in determining the effectiveness and sustainability of Mengiat Beach's coral reef conservation initiative. The community's participation in these events is evaluated using a combined approach that includes both quantitative and qualitative parameters. Quantitative measures track the frequency and duration of community participation in coral adoption, training sessions, and beach clean-ups. These measurements provide real information about the level of active



participation and commitment over time. Furthermore, qualitative assessments include interviews to acquire information about the community's impression of the program's impact, understanding of environmental issues, and perceived long-term advantages of their participation.

The Mengiat Beach collaborative effort to improve coral reef conservation and sustainable practices has incorporated innovative approaches, such as the Mars Assisted Restoration System (MARRS). Reef Stars were brought in as an approach for regenerating coral ecosystems in this innovative approach to coral preservation. MARRS embodies a holistic approach to coral preservation, providing an environment conducive to thriving reef ecosystems. It is rooted in both the Tri Hita Karana philosophy and contemporary conservation approaches. MARRS, or Mars Assisted Restoration System, is a breakthrough coral restoration system that has shown encouraging results. The deployment of Reef Stars, hexagonal sand-coated steel structures studded with connected coral bits, lies at the core of it. These structures were deliberately set up to cross barren coral rubble fields and bridge the gaps between the reef's remaining living coral. The collaborative endeavor at Mengiat Beach has tapped into an innovative methodology that connects seamlessly with the Tri Hita Karana philosophy concepts by embracing MARRS.

The Reef Stars, which function as a foundation for coral fragment attachment, demonstrate the initiative's approach to increasing local engagement and shared responsibility. The placement of these structures not only promotes coral restoration but also provides for the overall health of the marine ecosystem. Furthermore, the use of Reef Stars demonstrates the incorporation of sustainable techniques, which corresponds to the philosophy's emphasis on balance and equilibrium. These constructions are basic and cost-effective, demonstrating MARRS's pragmatic approach. This strategy is consistent with the Palembang principle of the Tri Hita Karana philosophy, which calls for responsible resource management (Qodim, 2023). The utilization of MARRS also fits in with the greater objectives of the joint endeavor.



Figure 7. The Reef Star of MARRS (Mars Assisted Restoration System)

One of the pivotal achievements of the initiative centered on coral reef conservation and sustainable practices at Mengiat Beach is the donation of ten dozen Reef Stars by the Faculty of Economics and Business Universitas Ngurah Rai and the University of Canberra to the Bali Coastal and Marine Biodiversity Foundation. This donation exemplifies these academic institutions' dedication to preserving coral ecosystems and demonstrating their commitment to actively participating in environmental conservation. Aside from its financial worth, this donation is an investment in the well-being of the marine habitat at Mengiat Beach. The academic institutions, working alongside the Bali Coastal and Marine Biodiversity Foundation, emphasize their shared commitment to reviving and preserving coral reefs for the benefit of current and future generations. This collaborative atmosphere displays a dedication to environmental well-being and long-term harmony.



Figure 8. Symbolic Handover of Donations in the form of Reef Stars

Reef Stars represent a shared commitment to coral preservation that goes beyond a simple contribution. It exemplifies the integration of creative solutions with the conservation mission. These structures not only maintain the possibility of recovering coral populations but also represent the commitment of a wide range of stakeholders to the long-term health of Mengiat Beach's marine ecology. The donation of Reef Stars to the Bali Coastal and Marine Biodiversity Foundation by the Faculty of Economics and Business Universitas Ngurah Rai and the University of Canberra is an outstanding demonstration of collaboration and dedication. It is consistent with the initiative's overarching goals of coral reef conservation and long-term practices at Mengiat Beach. As these Reef Stars settle into the embrace of the ocean, they reflect not just a physical presence but also a legacy of devotion to coral preservation, symbolizing a common purpose to maintain environmental well-being and build long-term ecological balance.

## CONCLUSION

The combined effort at Mengiat Beach to improve coral reef conservation and sustainable practices has produced extraordinary results, integrating traditional wisdom with current approaches in the context of the Tri Hita Karana philosophy. This multifaceted initiative, coordinated by the Faculty of Economics and Business at Universitas Ngurah Rai and the University of Canberra in collaboration with the Bali Coastal and Marine Biodiversity Foundation, demonstrates a comprehensive commitment to environmental resilience and community empowerment.

The preliminary phase laid the groundwork for the succeeding activities, emphasizing the importance of collaboration and community involvement. The coordinated activities of the University team and the Bali Coastal and Marine Biodiversity Foundation laid the groundwork for proactive conservation methods. The donation of Reef Stars to the foundation by the Faculty of Economics and Business Universitas Ngurah Rai and the University of Canberra represents a tangible commitment to coral preservation, mirroring the principle of responsible resource management in the Tri Hita Karana philosophy. The incorporation of an in-depth education session, in which participants learned how to adopt and securely attach coral fragments to binding material, was fundamental to the project. This session prepared participants to actively contribute to coral preservation initiatives. The initiative's educational approach promotes awareness and comprehension among local communities and stakeholders. The initiative fosters an atmosphere of environmental care among participants through teaching knowledge, which resonates deeply with the Tri Hita Karana philosophy's precepts.

The combination of academic institutions' collaboration and community participation illustrates the initiative's all-encompassing nature. Students led cleanup activities that highlighted the necessity of waste management in sustaining the health of coastal ecosystems. These activities are consistent with the Tri Hita Karana philosophy, which promotes community solidarity and a sense of shared responsibility. In addition, continuing monitoring and periodic updates offer

participants and partners information about the growth and progress of the adopted coral fragments. This ongoing involvement is consistent with the Tri Hita Karana philosophy's emphasis on interconnection and long-term well-being.

The program adheres to the ideas of the Tri Hita Karana philosophy by combining traditional wisdom with contemporary methods. This initiative not only revitalizes coral ecosystems but also cultivates a permanent legacy of environmental stewardship and overall well-being through collaborations, training, education, and community engagement.

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## REFERENCES

- Adnyani, N. K., & Purnamawati, I. G. (2020). Tri Hita Karana and tourism village management models for wellbeing. *Target; Jurnal manajemen dan Bisnis*, 2(2), 157-166. doi:<https://doi.org/10.30812/target.v2i2.750>
- Araújo, R., & Albino, J. (2020). Assentment of Interest of students and teachers in coastal aspects: The star of a coastal management change. *Revista Costas*, 2(2), 73-86. doi:<https://doi.org/10.26359/COSTAS.1002>
- Assa, A., & Adirinekso, G. (2022). The role of community in the maintenance and preservation of coral reefs in Ujung Genteng, Sukabumi. *Jurnal Manajemen Indonesia*, 22(2), 183-188. doi:<https://doi.org/10.25124/jmi.v22i2.3960>
- Astuti, N., Ginaya, G., & Susyarini, N. (2019). Designing Bali tourism model through the implementation of Tri Hita Karana and Sad Kertih values. *International Journal of Linguistics, Literature and Culture*, 5(1), 12-23. doi:<https://doi.org/10.21744/IJLLC.V5N1.461>
- BAPPENAS. (2021). *Blue economy: Development framework for Indonesia's economic transformation*. (L. Sambodo, S. Yanti, D. Pane, & A. Sim, Eds.) Jakarta: Ministry of National Development Planning / National Development Agency (BAPPENAS).
- Benzaken, D., Voyer, M., Pouponneau, A., & Hanich, Q. (2022). Good governance for sustainable blue economy in small islands: Lessons learned from the seychelles experience. *Frontiers in Political Science*, 4, 1-23. doi:<https://doi.org/10.3389/fpos.2022.1040318>
- Biermann, F., Kanie, N., & Kim, R. E. (2017). Global governance by goal-setting: The novel approach of the UN sustainable development goals. *Current Opinion in Environmental Sustainability*, 26-31. doi:<http://dx.doi.org/10.1016/j.cosust.2017.01.010>
- Boakes, Z., Mahyuni, L., Stafford, R., & Cvitanovic, M. (2022). Community perceptions of coral reef conservation in a rural fishing Village in North Bali, Indonesia. *Research Square*, 1-27. doi:<https://doi.org/10.21203/rs.3.rs-1374792/v1>
- Bonaldo, R., Pires, M., Junior, P., Hoey, A., & Hay, M. (2017). Small marine protected areas in Fiji provide refuge for reef fish assemblages, feeding groups, and corals. *PLOS ONE*, 1-26. doi:<https://doi.org/10.1371/journal.pone.0170638>
- Boström-Einarsson, L., babcock, R., Bayraktarov, E., Ceccarelli, D. C., Ferse, S. H., Harrison, P., . . . McLeod, M. (2020). Coral restoration – A systematic review of current methods, successes, failures and future directions. *PLOS ONE*, 15(1). doi:<https://doi.org/10.1371/journal.pone.0226631>
- Edmunds, P., & Riegl, B. (2020). Urgent need for coral demography in a world where corals are disappearing. *Marine Ecology Progress Series*, 635, 233-242. doi:<https://doi.org/10.3354/meps13205>
- Elegbede, I. O., Akintola, S. L., Jimoh, A., & Jolaosho, T. L. (2023). Blue economy (Sustainability). In S. O. Idowu, *Encyclopedia of Sustainable Management* (pp. 1-9). Switzerland: Springer Nature. doi:[http://dx.doi.org/10.1007/978-3-030-02006-4\\_401-1](http://dx.doi.org/10.1007/978-3-030-02006-4_401-1)
- Estradivari, Agung, M. F., Adhuri, D. S., Ferse, S. C., Sualia, I., Brown, A. A., . . . Ahmadia, G. N. (2022). Marine conservation beyond MPAs: Towards the recognition of other effective area-based conservation measures (OECMs) in Indonesia. *Marine Policy*, 137, 1-12. doi:<https://doi.org/10.1016/j.marpol.2021.104939>
- Gómez-Baggethun, E., Corbera, E., & Reyes-García, V. (2013). Traditional ecological knowledge and global environmental change: research findings and policy implications. *Ecology & Society*, 18(4). doi:<https://doi.org/10.5751/ES-06288-180472>
- Grimwood, B. (2022). *Participatory action research - Democratizing knowledge for social justice* (2 ed.). (C. Johnson, & D. Parry, Eds.) Routledge.

- Hadiyanto, H. (2022). "Tri hita Karana" life ideology as a cultural identity of Balinese society reflected in elizabeth gilbert's eat pray love (anthropological approach in literature). *The 7th International Conference on Energy, Environment, Epidemiology and Information System (ICENIS 2022)* (pp. 1-5). EDP Sciences. doi:<https://doi.org/10.1051/e3sconf/202235902026>
- Hein, M., Birtles, A., Willis, B., Gardiner, N., Beeden, R., & Marshall, N. (2019). Coral restoration: Socio-ecological perspectives of benefits and limitations. *Biological Conservation*, 14-25. doi:<https://doi.org/10.1016/J.BIOCON.2018.11.014>
- Hughes, T., Anderson, K., Connolly, S., Heron, S., Kerry, J., Lough, J., . . . Pandolfi, J. (2018). Spatial and temporal patterns of mass bleaching of corals in the Anthropocene. *Science*, 359, 80-83. doi:<https://doi.org/10.1126/science.aan8048>
- Kuhn, R., & Duerden, F. (2021). A review of traditional environmental knowledge: An INTERDISCIPLINARY CANADIAN PERSPECTIVE. *Culture*, 16(1), 71-84. doi:<https://doi.org/10.7202/1084104ar>
- Mellin, C., MacNeil, M., Cheal, A., Emslie, M., & Caley, M. (2016). Marine protected areas increase resilience among coral reef communities. *Ecology Letters*, 19(6), 629-637. doi:<https://doi.org/10.1111/ele.12598>
- Midlen, A. (2021). What is the blue economy? A spatialised governmentality perspective. *Maritime Studies*, 20, 423-448. doi:<https://doi.org/10.1007/s40152-021-00240-3>
- NOOA. (2023). *What is a marine protected area (MPA)?* Retrieved 2023, from NOAA Ocean Exploration: <https://oceanexplorer.noaa.gov/facts/mpas.html>
- Obura, D., Aeby, G., Amorntthamarong, N., Appeltans, W., Bax, N., Bishop, J., . . . Wongbusarakum, S. (2019). Coral reef monitoring, reef assessment technologies, and ecosystem-based management. *Frontiers in Marine Science*, 6(580), 1-21. doi:<https://doi.org/10.3389/fmars.2019.00580>
- Oppen, M., Gates, R., Blackall, L., Cantin, N., Chakravarti, L., Chan, W., . . . Putnam, H. (2017). Shifting paradigms in restoration of the world's coral reefs. *Global Change Biology*, 23(9), 3437-3448. doi:<https://doi.org/10.1111/gcb.13647>
- Qodim, H. (2023). Nature harmony and local wisdom: Exploring Tri Hita Karana and traditional ecological knowledge of the Bali aga community in environmental protection. *Religious: Jurnal Studi Agama-Agama dan Lintas Budaya*, 7(1), 1-10. doi:<https://doi.org/10.15575/rjsalb.v7i1.24250>
- Rojo, I., Sánchez-Meca, J., & García-Charton, J. (2019). Small-sized and well-enforced marine protected areas provide ecological benefits for piscivorous fish populations worldwide. *Marine Environmental Research*, 149, 100-110. doi:<https://doi.org/10.1016/j.marenvres.2019.06.005>
- Senthilkumar, R. (2022). Sustainable coastal tourism- An overview. *SAFER - Sustainability, Agri, Food and Environmental Research*, 10, 1-10. doi:<https://doi.org/10.7770/safer-v10n1-art2497>
- Suamba, I., & Utama, K. (2017). Materiality and spirituality in Bali tourism: An ethical reflection on the Tri Hita Karana. *IJASTE – International Journal of Applied Sciences in Tourism and Events*, 1(1), 82-93. doi:<https://dx.doi.org/10.31940/ijaste.v1i1.189>
- Trialfhianty, T. I., & Suadi. (2017). The role of the community in supporting coral reef restoration in Pemuteran, Bali, Indonesia. *Journal of Coastal Conservation*, 873-882. doi:<https://doi.org/10.1007/s11852-017-0553-1>
- United Nations. (2018). *The 2030 agenda and the sustainable development goals: An opportunity for Latin America and the Caribbean*. Santiago: United Nations Publication. Retrieved from <https://repositorio.cepal.org/server/api/core/bitstreams/6321b2b2-71c3-4c88-b411-32dc215dac3b/content>
- Vierros, M., & Fontaubert, C. D. (2017). *The potential of the blue economy: Increasing long-term benefits of the sustainable use of marine resources for small island developing states and coastal least developed countries*. Washington DC: International Bank for Reconstruction and Development/The World Bank. Retrieved 2023, from [https://www.climateaction.org/images/uploads/documents/World\\_Bank.pdf](https://www.climateaction.org/images/uploads/documents/World_Bank.pdf)
- Yasa, P. D. (2022). Tri Hita Karana (Sekilas historis dan hakikat keharmonisan semesta). *Sphatika: Jurnal Teologi*, 13(2), 205-216. doi:<https://doi.org/10.25078/sphatika.v13i2.2214>
- Yonvitner, Agus, S., Lestari, D., Pasaribu, R., Supriyanto, E., Widodo, C., . . . Akmal, S. (2022). Vulnerability status of the coral ecosystem in Kepulauan Seribu Marine National Park, Indonesia. *Coastal management*, 50(3). doi:<https://doi.org/10.1080/08920753.2022.2037388>
- Yulianingsih, w., Indawati, Y., & Kartika, A. W. (2021). Awig-Awig as traditional law written in traditional law perspective in Indonesia. *5th International Seminar of Research Month 2020. 2021*, pp. 189-194. NST Proceedings. doi:<http://dx.doi.org/10.11594/nstp.2021.0929>





# Implementation of scouting techniques material on first aid for accidents in scouts of Gudep Bumi Bahari

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ARTICLE INFO	ABSTRACT
<p><b>Article history</b>            Received: 2023-11-12            Revised: 2024-01-16            Accepted: 2024-01-20            Published: 2024-01-27</p> <p><b>Keywords</b>            First Aid            Penggalang's Scout            Scouting Techniques</p>	<p>Scouting is one of the activities of forming discipline, morals, character, and mental development with a learning process outside the school environment and outside the family environment which is packaged in an interesting and fun way carried out in the open air. There are two kinds of scout learning material, namely knowledge learning and scouting techniques. In scouting activities there are several scouting techniques that are often used for example camping, exploration, terrain orientation, and mountain climbing. Therefore, it is necessary to implement the scouting technique of scout first aid material for scouts through a Community Service program that is integrated with lecture activities at the project location to implement the scouting technique of scout first aid material for scouts in Gudep Bumi Bahari so that scouts in Gudep Bumi Bahari can know and apply every step in performing first aid in accidents during scouting activities. The purpose of this service is to increase the knowledge and skills of the first aid of the Cub Scouts, because the knowledge of first aid in the accident of the Cub Scouts of Gudep Bumi Bahari is still lacking. The method used in this community service is lecture-based coaching, practice and educational games, interviews are conducted as a final evaluation. The service program carried out with the project implementation team can be carried out according to targets such as increasing the understanding and skills of Scouts related to first aid material at Gudep Bumi Bumi Bahari in SD Negeri Pulias Abaling.</p>
<p><b>Kata Kunci</b>            P3K            Pramuka Penggalang            Teknik Kepramukaan</p>	<p><b>Penerapan materi teknik pramuka pada pertolongan pertama pada kecelakaan pada pramuka Gudep Bumi Bahari.</b> Pramuka adalah salah satu kegiatan pembentukan kedisiplinan, akhlak, watak, dan pembinaan mental dengan proses pembelajaran di luar lingkungan sekolah dan di luar lingkungan keluarga yang dikemas secara menarik dan menyenangkan yang dilakukan di alam terbuka. Materi pembelajaran pramuka terdapat dua macam, yaitu pembelajaran pengetahuan dan teknik kepramukaan. Dalam kegiatan pramuka ada beberapa teknik kepramukaan yang sering digunakan sebagai contoh perkemahan, penjelajahan, orientasi medan, dan mendaki gunung. Oleh karenanya diperlukan implementasi teknik kepramukaan materi pertolongan pertama pramuka pada penggalang melalui program Pengabdian kepada Masyarakat yang terintegrasi dengan kegiatan perkuliahan di lokasi proyek untuk mengimplementasikan teknik kepramukaan materi pertolongan pertama pramuka penggalang di Gudep Bumi Bahari agar pramuka penggalang di Gudep Bumi Bahari dapat mengetahui dan menerapkan setiap langkah dalam melakukan pertolongan pertama pada kecelakaan saat kegiatan kepramukaan. Tujuan pengabdian ini untuk meningkatkan pengetahuan dan keterampilan pertolongan pertama pramuka penggalang, karena pengetahuan terhadap pertolongan pertama pada kecelakaan pramuka penggalang Gudep Bumi Bahari masih kurang. Metode pengabdian yang digunakan adalah pembinaan berbasis ceramah, praktik dan permainan edukasi, wawancara dilakukan sebagai evaluasi akhir. Program pengabdian yang dilaksanakan bersama tim pelaksana proyek dapat terlaksana sesuai target seperti meningkatnya pemahaman dan keterampilan Pramuka Penggalang terkait materi pertolongan pertama pada Gudep Bumi Bumi Bahari SD Negeri Pulias Abaling.</p>

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## INTRODUCTION

Scouting is one of the extracurricular activities that help children develop their talents, interests and character. This is due to the diverse activities in Scouting that can help the younger generation in shaping traits such as patriotism, communicative behavior, discipline, honesty, independence, responsibility, hard work, social spirit, and many more (A. Kurniawan et al., 2021). The Scout Movement is a non-formal education organization that has an important role in the education of Indonesia's younger generation, and is certainly faced with various challenges (Yang et al., 2020). One of the main challenges is how Scouting seeks to drive positive change (Freeman, 1958; Meduri et al., 2018). Scouting also acts as an additional component in education, both formal and informal, by contributing to the formation of future generations and delivering valuable moral messages. Since the implementation of Curriculum 2013, Scouting has become one of the compulsory extracurricular activities in schools, and this is supported by a clear legal basis through the Law governing the Scout Movement (Erliani, 2017).

In the Scouting program, learning materials can be divided into two categories, namely knowledge learning materials and technical learning materials. The Scout knowledge learning material includes an understanding of the concept, history, purpose, and function of Scouting. Meanwhile, the Scout technical learning materials include the mastery of basic skills that are an integral part of Scouting, such as skills in tying ropes, using codes, marching discipline, and the implementation of First Aid in Accidents (Zeng et al., 2020; De Buck et al., 2015; R. Kurniawan et al., 2021; Wyckoff et al., 2023).

First aid in accidents at the Cub Scout level is one of the important materials to learn and master (Djävrv et al., 2022; Adib-Hajbaghery & Kamrava, 2019; Asadi-Pooya et al., 2022; Adal & Abebe, 2022). This is due to the possibility of emergency situations or accidents occurring in their environment (Gete et al., 2022; Diango et al., 2022; Diango et al., 2023; Slingers et al., 2022; Oktafiani Sigarlaki; et al., 2023). Therefore, community service often involves the topic of implementing scouting techniques in first aid materials for Cub Scouts.

Through this connection, the implementation of first aid scouting techniques not only provides direct benefits in improving skills, but also contributes to the achievement of sustainable development goals at large. In the context of the implementation of scouting techniques on First Aid for Accidents among the Cub Scouts at Gudup Bumi Bahari, there is a close relationship with several points of the Sustainable Development Goals (SDGs). (1) Health and Wellbeing. Accident First Aid Training among Cub Scouts not only improves skills in providing first aid but also contributes to the general improvement of health and well-being of the community. (2) Quality Education. The implementation of scouting techniques provides a practical approach in the delivery of First Aid in Accidents material, increasing students' understanding and skills, in this case the scouts, in line with efforts to achieve quality education. (3) Sustainable Cities and Settlements. The emphasis on Accident First Aid training among Cub Scouts has the potential to improve community preparedness in dealing with accidents in urban environments, supporting the goal of sustainable urban and residential development. (4) Partnership for a Common Goal. The collaboration between the Cub Scouts and relevant stakeholders, such as schools and the community at large is a clear example of partnership to achieve a common goal of improving community safety and well-being (Sachs et al., 2019).

Gudup Bumi Bahari is one of the Gudup in SD Negeri Pulias Abaling school where extracurricular scouting is mandatory. The school is a school that will be visited to find out whether scouting techniques for first aid material in accidents have been given or not. However, when making observations in the field, namely at Gudup Bumi Bahari, the base of SD Negeri Pulias Abaling, it was found that most of the scouts there did not understand or even know first aid skills at all. Therefore, community service is carried out related to first aid material to provide scouts with education that will be useful for the scouts themselves including the wider community (Ilham & Amal, 2023; Pei et al., 2019; Reavley et al., 2021; Wattimena et al., 2022).

The reason for this community service is because there are many scouts in Gudup Bumi Bahari who do not know the application of first aid in accidents. Therefore, the community service participants, in this case the scouts, are given education and guidance so that the knowledge received can be implemented into the participants themselves and can be shared with friends and the community. Because scouts are tough children, versatile children and children who must be skilled, especially in terms of first aid in accidents. In this regard, this service has the main focus of providing knowledge and skills on how to provide first aid in emergency situations or accidents with a step-by-step guide on how to evaluate the victim's condition and provide appropriate first aid measures.

There have been many devotions about scouts, for example, such as the devotion of Ade Sabrina et al, who discuss extracurricular scout activities in instilling student character at SDN 26 Mataram in the 2020/2021 school year (Sabrina et al., 2022), Iswandi et al's dedication which discusses the development of scouting in improving national insight in the Territorial Front Force Dr.H. Abdul Ahmad PGRI Padang (Iswandi et al., 2022), Likewise, in community service conducted by Yatni Widayanti, which discusses the implementation of extracurricular scouting activities in improving student discipline (Widayanti et al., 2023), also the development of teaching materials for scout training at the elementary school level (Ds et al., 2022) and the dedication of Risalul Ummah et al, which discusses the application of the character of independence through scouting activities in class IV MI case study at MI Nadlatul Ulama Sumokali (Majid & Ummah,



2022). While the service that the team did was the implementation of scouting techniques for first aid material for Cub Scouts in Gudep Bumi Bahari, the material discussed was first aid material for accidents in Cub Scouts.

Based on the compulsory extracurricular guidelines for Scouting Education in primary schools in 2018 in accordance with the 2013 Curriculum and also in the implementation of the current Merdeka Belajar Curriculum, there are also several significant changes (Astari, 2022; Hamna & BK, 2023; Trisiana et al., 2023). The changes include: (1) In graduate competencies, there is an increase and balance between soft skills and hard skills, including competencies in attitudes, skills and knowledge at both primary and secondary school levels. (2) There is a change in the position of subjects, where competencies previously integrated into subjects are now developed through broader competencies. (3) The learning approach has also changed with the development of an integrated thematic approach that is applied in all subjects, especially at the primary school level.

As mentioned above, this service activity was carried out because the initial observation found the fact that Scouting activities at Gudep Bumi Bahari base SD Negeri Pulias Abaling were rarely carried out, even when scouting activities were carried out, they only focused on discussing scouting material such as marching rules, rigging, ciphers, and scout history. Learning and coaching related to First Aid in Accidents has never been taught to the Cub Scouts at Gudep Bumi Bahari, this skill is very important for Cub Scouts because mastery of First Aid in Accidents skills can minimize the impact of accidents so that they do not become severe. The importance of mastering First Aid in Accidents for Cub Scouts is also shown by the rules that require this skill as one of the ten special skill requirements that must be possessed by a Scout.

Another problem found is the unavailability of health organizations or extracurricular activities such as PMR at SD Negeri Pulias Abaling, so that student resources are underutilized in handling accidents at school. Departing from these findings, this service was carried out to foster and train scouts in Gudep Bumi Bahari so that from this service it is hoped that the availability of scouts who are proficient in the field of First Aid in Accidents.

Scouting Education and the 2013 Curriculum go hand in hand in the implementation of education (Purwasih & Sahnan, 2022). This is stipulated by Permendikbud No. 63/2014, which makes Scouting Education a compulsory extracurricular activity from primary to secondary education in the implementation of Curriculum 2013 (Maruti et al., 2023; Megananda et al., 2023). In this service, we will dive deeper into the Community Service Program carried out by lecturers and students of the Pendidikan Guru Sekolah Dasar Study Program from Universitas Madako Tolitoli which carries the topic of community service projects integrated with the Scouting Course, namely: "Implementation of Scouting Techniques in the First Aid Material of Cub Scouts Gudep Bumi Bahari." This service will review the methods of program implementation, the benefits for students and the community, as well as expectations for the results that can be obtained through this program. In addition, this service will also explore the relevance of a scouting education approach oriented towards the realization of the Sustainable Development Goals (SDGs) in the context of the community development agenda.

## METHOD

The target in this community service activity is the scouts in the Abaling Hamlet area, Pulias Village, Ogodeide District, which is located at the SD Negeri Pulias Abaling, namely Gudep Bumi Bahari (Figure 1). The reason for the service in the area is due to the lack of coaching in First Aid skills in Accidents, therefore it is necessary to provide knowledge and skills to the scouts because the scouts in Gudep Bumi Bahari do not know the material of first aid in accidents, especially in the field of scouting. The method of implementing the service is carried out by lecture-based coaching on the presentation of first aid material followed by practice based on educational simulation games, stretcher making training and interviews as an evaluation.

This community service activity was carried out from September to the end of October 2023. Community service observation activities were carried out at Gudep Bumi Bahari on September 20, 2023 with the presence of 42 participants who were dominated by students of SD Negeri Pulias Abaling. Meanwhile, the first phase of community service activities was carried out on September 30, 2023 starting at 14.00 WITA. The number of participants was 10 participants who participated in the provision of material and practice of First Aid phase I. The second phase of service was carried out on October 21, 2023 at 2 pm WITA. With 23 participants who participated in the practice of making stretchers and interview sampling. Gudep Bumi Bahari members were given material first about first aid in accidents, how the stages and procedures in performing first aid in accidents such as minor fractures, fainting, wounds, shortness of breath and other injuries. Furthermore, the members of Gudep Bumi Bahari were invited to practice how to help accidents in fractures, fainting, shortness of breath, wounds and other injuries step by step. After practicing, the members of Gudep Bumi Bahari were interviewed about how the first aid material in accidents for themselves and whether they understood and understood the stages of first aid in accidents. The steps used are in Figure 2.



Figure 1. Location Map of Gudep Bumi Bahari in SD Negeri Pulias Abaling

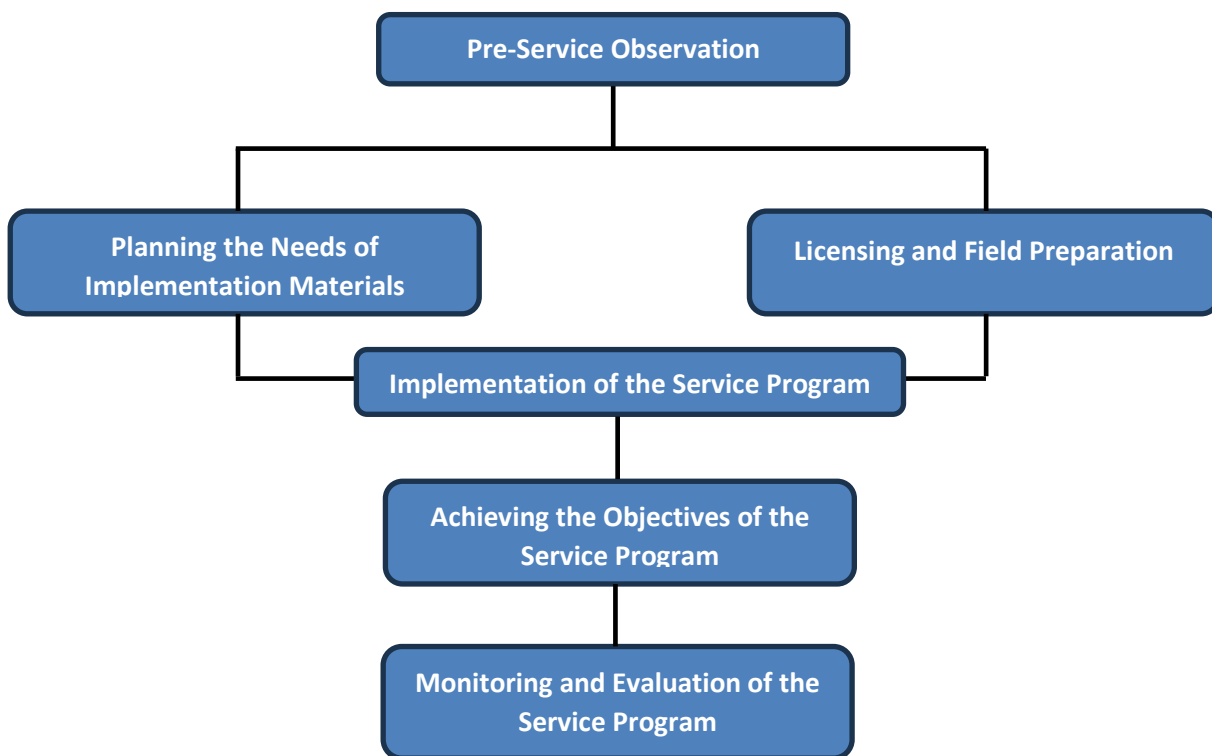


Figure 2. Flow of Project Implementation

## RESULTS AND DISCUSSION

First aid is the act of providing temporary assistance and treatment that is practical and appropriate (Anjarwati et al. 2022; Ojha et al. 2020; Gumbie et al., 2018). The main goal is not just to provide treatment, but also to prevent and protect victims from more serious consequences (Nadila et al., 2023; Stibies et al., 2023). While First Aid in Accidents is an initial action that has a crucial role in efforts to save lives, and help victims to recover better and faster (Alika K et al., 2023; Muttaqien & Awiria, 2022; Rosuliana et al., 2023). In the Scout Movement, especially in the scout group, there are many materials or skills that are taught and trained, including First Aid Accident training. In the independent curriculum, every school is required to include the Scout Movement as a compulsory extracurricular activity as stated in

Peremendikbud No. 62 Pasal 3 Tahun 2014 concerning types of extracurricular activities which states that mandatory activities are organized by the Education Unit and must be followed by all students and the activities are in the form of scouting education (Nuh, 2014).

First aid training in a Scout environment is a material or skill that must be learned (Elnagar et al., 2023; Ficarella et al., 2022; Ampry et al., 2022). Even First Aid in Accidents skills are one of the Special Proficiency Requirements that must be possessed. Scout members are often involved in outdoor activities or out-of-school activities such as camping, going on adventures, hiking, and so on. Therefore, having Accident First Aid skills is very important for every Scout member. In the Cub Scout First Aid training, the material includes an understanding of the signs and symptoms of injury, proper first aid measures, as well as the use of simple medical equipment such as bandages, eucalyptus oil, wound medicine, dressings, and other supplies (Zou et al., 2022; Eweida et al., 2023; Lam et al., 2017; Adu & Cendana, 2022).

Community service observation activities were carried out at Gudep Bumi Bahari on September 20, 2023 starting at 10:00 WITA. The number of participants was 42 participants. Meanwhile, the first community service activity was carried out on September 30, 2023 starting at 14.00 WITA. The number of participants was 10 participants who participated in the provision of material and practice of First Aid phase I (Figure 3). The second phase of service was carried out on October 21, 2023 at 14.00 WITA. With 23 participants who participated in the practice of making stretchers and interview sampling (Figure 4).



Figure 3. Cub Scouts of Bumi Bahari Gudep (Subject of Community Service)



Figure 4. The practice of making a stretcher for first aid in accidents

Community service activities include initial observations, material provision as well as phase I and phase II practices. The initial observation was carried out by observing and introducing the Cub Scouts, Coaches and Mabigus. Furthermore, in stage I, namely providing material as well as practicing first aid. The material presented included broken bones, fainting and bleeding. Phase II is to practice making a stretcher using two scout sticks and two ropes that are connected using a twin knot, when making a stretcher using a base knot and anchor knot, then sampling through the interview method to evaluate or measure the extent of understanding of the scout participants. In addition to interviews with Cub Scouts, interviews were also conducted with Boy Scout Leaders to find out the extent to which the provision of First Aid material in the extracurricular Cub Scout Movement at Gudep Bumi Bahari.

The delivery of material by the resource person was carried out after observation activities, using the lecture method (material and practice) and the interview method. During the delivery of the material by the resource person, the participants were very enthusiastic about the material presented. After the presentation of the material, it was continued with the practice of first aid material. The practices carried out are how to handle broken bones, handle people who faint and treat victims who have bleeding wounds.

The results of community service activities in this case carried out on the Cub Scouts increased the participants' knowledge regarding how to handle fractures, fainting and treatment of victims who have bleeding wounds (Bjørk et al., 2022). This is evident when playing the patient pick-up game, participants can practice how to handle patients with broken bones, fainting and bleeding wounds. This kind of game can improve character values, one of which is the character value of social care (Sari et al., 2023; Barokah & Kamal, 2023; Khoeriyah & Kamal, 2023; Alves et al., 2023; Bjørshol et al., 2023; Øvstebø et al., 2023).

The patient pick-up game is carried out by dividing the participants into two groups, the patient group and the medical personnel group (Figure 5). The medical group acts as medical personnel who will perform first aid treatment on the patient group, the patient group will carry a card containing three kinds of accidents that have been taught. This game is also to assess the extent to which participants understand the material that has been taught and as a practical material after theory.



Figure 5. Game Interlude in Accident First Aid Practice

The entire series of scouting service activities received support from the Gudep so that the activities could be carried out well and smoothly. However, this activity is less than optimal due to the lack of First Aid facilities at the school or Gudep. The tools used are only makeshift but the participants seem enthusiastic and can understand the material well. In phase II the team provided material related to the making of stretchers, the making of these stretchers was carried out by the team and also participants starting with the introduction of base, anchor and twin knots, then participants made stretchers according to the direction of the team. After the stretcher has been completed, a trial is carried out by lifting the participant who acts as a patient, from the results of the trial the stretcher is feasible and strong to support the patient.

The results of the interviews conducted found that participants had understood the material that had been provided, this could be shown during the evaluation interview, participants could explain well the first aid material that had been taught, participants could explain the meaning and examples of first aid. The participants' answers during the interview were; "First aid is an initial aid effort provided in emergency situations or minor accidents before professional assistance

arrives. It involves applying basic knowledge of simple medical actions to respond to injuries or health conditions that require immediate attention. For example, if a person sustains a minor injury, first aid measures may include cleaning the wound with clean water, applying an antiseptic, and covering it with a bandage or plaster. Also, in cases involving abdominal pain or discomfort, giving advice such as rest and drinking water is also a suitable form of first aid. Learning first aid is essential so that we can provide effective and timely assistance in emergency situations. By doing so, we can be a meaningful source of support for those around us when needed." Understanding first aid is very important, this is in line with relevant previous research, stating that first aid training in schools and front groups is very important considering the vulnerability of accidents both large and small such as bleeding in a school or camp environment (Nurul Huda, Ida Zuhroidah, Mukhammad Toha, 2021; Ariyanti et al., 2020)

In addition to being able to answer interview questions, participants can also implement what has been learned and trained, this can be proven by the participation of participants, in this case the scouts, in playing educational games, namely the patient pick-up game, participants can practice how to handle patients with broken bones, fainting, bleeding, and make stretchers. The application of educational games is proven to be able to improve material understanding because there is direct interaction and simulation related to the material that has been trained, this is in line with previous research which states that educational games are proven to be effective and interesting and able to increase student learning activities (Ariyani Raharjo et al., 2022).

While the final result of this community service activity is the availability of Scouts who are proficient in the field of First Aid in Accidents as stated in the Bylaws of the Scout Movement Chapter IV Scouting Education System article 19 concerning Proficiency Marks. In the Special Proficiency Requirements for Cub Scouts about First Aid Proficiency in accidents. So that participants can be at the forefront in terms of First Aid at school and in their gudep and also as helpers or partners of coaches and teachers in the health sector, especially first aid.

This service activity is also carried out as an effort to implement the SDGs for Health and Welfare, in this case training in First Aid in Accidents among Cub Scouts not only improves skills in providing first aid but also contributes to improving the health and welfare of society in general. Scout resources that are skilled in first aid can not only be applied in the gudep environment but also applied in the wider community as a health guard, empowering scouts in the field of microhealth has a huge impact on society, scouts can share their knowledge with fellow friends, family, and even the community. The implementation of first aid can also help support the development of resources in the health sector. As a follow-up after the first aid training, the team will conduct a post-training evaluation to ensure that participants are still consistent in implementing First Aid and continue to share their knowledge with their friends and the community in general.

As for what distinguishes the service activities that the team does from the scouting activities that are generally carried out at Gudep Bumi Bahari in SD Negeri Pulias Abaling, among others: (1) Service activities are carried out by combining the presentation of first aid material accompanied by simulation educational games that have not previously been applied in other scouting activities. (2) The role as the frontline in first aid, the final result of the service activity is to create Cub Scouts who are not only proficient in First Aid in Accidents but can also be the frontline in providing First Aid at school and in the Gudep environment. This shows a more active and responsive role of the Cub Scouts in accident or health emergency situations. (3) Post-training evaluation and knowledge dissemination, the follow-up of service activities includes post-training evaluation to ensure the consistency of participants in implementing First Aid. The Cub Scouts are expected to not only maintain and apply their knowledge within the scope of the front cluster but also act as agents of change by continuing to share the knowledge and skills of First Aid in Accidents to their friends and the community in general, so that it has a macro impact in the local community. This service activity not only focuses on developing special skills (SKK) in the field of scouting, but also emphasizes the active role of Cub Scouts in making a real contribution in the field of health and First Aid in the wider community which is one of the points of emphasis on the community development agenda based on the Sustainable Development Goals (SDGs).

## CONCLUSION

First aid in Cub Scouts covers many aspects such as broken bones, fainting and so on. First aid is one of the important aspects of Scouting, therefore every Scout is required to master these skills, even in the Scouting rules, the Special Proficiency Requirements for First Aid skills in Accidents are classified as mandatory special skill requirements to be mastered. This shows that P3 is important in Scouting where Scouts are active with outdoor activities such as exploring, camping and other activities which of course have the potential for accidents. Therefore, the team helps develop this skill in Cub Scouts, especially in Gudep Bumi Bahari as a form of community service in the education scope as an implementation of one of the Tridharma of Education which is expected to be of positive value and benefit to the community. The community service program that the team conducted was successful in increasing the understanding and skills of the Cub Scouts regarding first aid material. Based on the conclusions above, it is suggested that the provision



and improvement of facilities in the form of First Aid Accident equipment is needed so that First Aid activities can run better. The team also hopes that the Gudep can increase attention to first aid material.

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## REFERENCES

- Adal, O., & Abebe, A. (2022). First aid knowledge and practice toward students with epileptic seizure among governmental high school teachers in Addis Ababa, Ethiopia: Cross-sectional study. *Epilepsy and Behavior*, 134, 108767. <https://doi.org/10.1016/j.yebeh.2022.108767>
- Adib-Hajbaghery, M., & Kamrava, Z. (2019). Iranian teachers' knowledge about first aid in the school environment. *Chinese Journal of Traumatology - English Edition*, 22(4), 240–245. <https://doi.org/10.1016/j.cjtee.2019.02.003>
- Adu, S. S., & Cendana, W. (2022). Penerapan model think pair, and share berbasis alat peraga untuk meningkatkan kemampuan berpikir kritis siswa. *Madako Elementary School*, 1(2), 132–150. <https://doi.org/https://doi.org/10.56630/mes.v1i2.53>
- Alika K, H., Andriany, J., Oktavia, S., Agustina, R., Nursusanti, A., & Wahyuni, A. (2023). Meretas filsafat pendidikan materialisme-naturalisme dalam konteks pendidikan dasar. *Madako Elementary School*, 2(1), 48–61. <https://doi.org/https://doi.org/10.56630/mes.v2i1.60>
- Alves, D. M., Leite, I., Const, L., Cristina, K., Brunna, T., Pinheiro, M., Ribeiro, B., Vieira, D., Assis, R., & Dantas, N. (2023). First aid teaching for schoolchildren: Scoping review. *International Journal of Educational Research Open*, 5(November). <https://doi.org/10.1016/j.ijedro.2023.100305>
- Ampry, E. S., Arsiah, Fatwa, M. F., A.M, M. I., & Arifuddin. (2022). Supervisi kepala sekolah terhadap kinerja guru sekolah dasar. *Madako Elementary School*, 1(2), 176–186. <https://doi.org/https://doi.org/10.56630/mes.v1i2.58>
- Anjarwati, A., Kurniawati, A., Zamili, F., Diana, D. R. N., Suparni, S., & Putra, M. T. R. (2022). Sosialisasi P3K dan APD sebagai upaya untuk meningkatkan pengetahuan kesehatan di SDN Sukabumi 1 Probolinggo. *AMALIAH: Jurnal Pengabdian Kepada Masyarakat*, 6(1), 167–171.
- Ariyani Raharjo, A. S., Rufi'i, R., & Hartono, H. (2022). Penerapan media pembelajaran multimedia interaktif bermuatan game edukasi untuk meningkatkan aktivitas belajar. *JUPI (Jurnal Ilmiah Penelitian Dan Pembelajaran Informatika)*, 7(2), 441–452. <https://doi.org/10.29100/jupi.v7i2.2823>
- Ariyanti, R., Preharsini, I. A., & Sipolio, B. W. (2020). Edukasi kesehatan dalam upaya pencegahan dan pengendalian penyakit hipertensi pada lansia. *To Maega : Jurnal Pengabdian Masyarakat*, 3(2), 74. <https://doi.org/10.35914/tomaega.v3i2.369>
- Asadi-Pooya, A. A., Hosseini, S. A., Hashemizadeh Fard Haghghi, L., & Asadi-Pooya, H. (2022). Seizure first aid for people with epilepsy: opinions and knowledge of caregivers and healthcare professionals. *Seizure*, 102(September), 1–5. <https://doi.org/10.1016/j.seizure.2022.09.007>
- Astari, T. (2022). Buku teks dalam implementasi kurikulum merdeka di sekolah dasar. *Madako Elementary School*, 1(2), 163–175. <https://doi.org/https://doi.org/10.56630/mes.v1i2.56>
- Barokah, A. R., & Kamal, R. (2023). Implementasi sekolah adiwiyata terhadap pembentukan karakter kedisiplinan dan entrepreneurship siswa di MI Salafiyah Tanjung. *Madako Elementary School*, 2(2), 181–189. <https://doi.org/https://doi.org/10.56630/mes.v2i2.173>
- Bjørk, R. F., Bølstad, E., Pons, F., & Havighurst, S. S. (2022). Testing TIK (Tuning in to Kids) with TEC (Test of Emotion Comprehension): Does enhanced emotion socialization improve child emotion understanding? *Journal of Applied Developmental Psychology*, 78(November 2021). <https://doi.org/10.1016/j.appdev.2021.101368>
- Bjørshol, C. A., Øvstebø, A. M. M., Dyrnes, E., Reilstad, K. R., Thommassen, A. F., & Lindner, T. W. (2023). Saving lives and minds – The neglected part of first aid. *Resuscitation Plus*, 16, 100489. <https://doi.org/10.1016/j.resplu.2023.100489>
- De Buck, E., Van Remoortel, H., Dieltjens, T., Verstraeten, H., Clarysse, M., Moens, O., & Vandekerckhove, P. (2015). Evidence-based educational pathway for the integration of first aid training in school curricula. *Resuscitation*, 94, 8–22. <https://doi.org/10.1016/j.resuscitation.2015.06.008>
- Diango, K., Mafuta, E., Wallis, L. A., Cunningham, C., & Hodkinson, P. (2023). Implementation and evaluation of a pilot WHO community first aid responder training in Kinshasa, DR Congo: A mixed method study. *African Journal of Emergency Medicine*, 13(4), 258–264. <https://doi.org/10.1016/j.afjem.2023.09.001>
- Diango, K., Yangongo, J., Sistenich, V., Mafuta, E., & Wallis, L. (2022). Awareness, attitude and perceived knowledge regarding First Aid in Kinshasa, Democratic Republic of Congo: A cross-sectional household survey. *African Journal*

- of *Emergency Medicine*, 12(2), 135–140. <https://doi.org/10.1016/j.afjem.2022.03.001>
- Djärv, T., Douma, M., Palmieri, T., Meyran, D., Berry, D., Kloeck, D., Bendall, J., Morrison, L. J., Singletary, E. M., & Zideman, D. (2022). Duration of cooling with water for thermal burns as a first aid intervention: A systematic review. *Burns*, 48(2), 251–262. <https://doi.org/10.1016/j.burns.2021.10.007>
- Ds, F. F., Nursyamsi, & Permatasari, N. (2022). Pengembangan bahan ajar latihan pramuka pada tingkat penggalang di sekolah dasar. *REFLEKSI*, 11(1), 17–24. <https://p3i.my.id/index.php/refleksi/article/view/227>
- Elnagar, E., Pezzutto, S., Duplessis, B., Fontenaille, T., & Lemort, V. (2023). A comprehensive scouting of space cooling technologies in Europe: Key characteristics and development trends. *Renewable and Sustainable Energy Reviews*, 186(May). <https://doi.org/10.1016/j.rser.2023.113636>
- Erliani, S. (2017). Peran gerakan pramuka untuk membentuk karakter kepedulian sosial dan kemandirian (studi kasus di SDIT Ukhwah dan MIS An-nuriyyah 2 Banjarmasin). *Jurnal Ilmiah Pendidikan Guru Madrasah Ibtidaiyah*, VIII(1), 36–52.
- Eweida, R. S., Rashwan, Z. I., Khonji, L. M., Shalhoub, A. A. Bin, & Ibrahim, N. (2023). Psychological first aid intervention: rescue from psychological distress and improving the pre-licensure nursing students' resilience amidst COVID-19 crisis and beyond. *Scientific African*, 19. <https://doi.org/10.1016/j.sciaf.2022.e01472>
- Ficarella, E., Natalicchio, A., Spina, R., & Galantucci, L. M. (2022). Technological scouting of bi-material face masks: simulation of adherence using 3D Facial Norms. *Procedia CIRP*, 110(C), 261–266. <https://doi.org/10.1016/j.procir.2022.06.047>
- Freeman, A. B. (1958). Food Sanitation At the 1957 National Boy Scout Jamboree1. *Journal of Milk and Food Technology*, 21(2), 43–51. <https://doi.org/10.4315/0022-2747-21.2.43>
- Gete, B. C., Mitiku, T. D., Wudineh, B. A., & Endeshaw, A. S. (2022). Knowledge, attitude, and practice towards burn first aid and its associated factors among caregivers attending burn units in Addis Ababa, Ethiopia. A cross-sectional study. *Annals of Medicine and Surgery*, 81(May), 104402. <https://doi.org/10.1016/j.amsu.2022.104402>
- Gumbie, M., Parkinson, B., Bowman, R., Song, R., & Cutler, H. (2018). Cost-effectiveness of screening a 5 year old child for hearing loss using sound scouts compared with no screening: A decision model analysis. *Value in Health*, 21, S70. <https://doi.org/10.1016/j.jval.2018.07.532>
- Hamna, & BK, M. K. U. (2023). Model pembelajaran guided inquiry di era merdeka belajar: Efektivitas proyek sains IPA siswa di sekolah dasar. *Madako Elementary School*, 2(2), 121–136. <https://doi.org/https://doi.org/10.56630/mes.v2i2.209>
- Ilham, M., & Amal, A. (2023). Implementasi model project based learning berbasis teori belajar kolaboratif dalam pembelajaran konsep dasar IPA SD. *Madako Elementary School*, 2(2), 172–180. <https://doi.org/https://doi.org/10.56630/mes.v2i2.198>
- Iswandi, I., Alwizra, A., Budio, S., Lasman Azis, & Susanti, N. (2022). Pembinaan kepramukaan dalam meningkatkan wawasan kebangsaan di gugus depan teritorial Dr. H. Abdullah Ahmad PGAI Padang. *LOSARI: Jurnal Pengabdian Kepada Masyarakat*, 4(2), 82–85. <https://doi.org/10.53860/losari.v4i2.103>
- Khoeriyah, F., & Kamal, R. (2023). Implementasi evaluasi pembelajaran berbasis Student Led Conference ( SLC ) di sekolah dasar. *Madako Elementary School*, 2(2), 149–162. <https://doi.org/https://doi.org/10.56630/mes.v2i2.166>
- Kurniawan, A., Widiastui, N., & Aslamiyah, N. (2021). Peran kepala madrasah dalam mengembangkan ekstrakurikuler pramuka di Madrasah Aliyah Hidayatul Mubtadiin Sidoharjo Jati Agung Lampung Selatan tahun ajaran 2020/2021. *Ar Royhan: Jurnal Pemikiran Dan Hukum Islam*, 1(2), 1–12.
- Kurniawan, R., Razaq, A. G., & Poerbaningtyas, E. (2021). Perancangan board game sebagai media penunjang untuk meningkatkan minat kegiatan ekstrakurikuler pramuka penggalang siswa sekolah dasar. *Jurnal Desain*, 8(2), 132. <https://doi.org/10.30998/jd.v8i2.8166>
- Lam, N. N., Li, F., Tuan, C. A., & Huong, H. T. X. (2017). To evaluate first aid knowledge on burns management amongst high risk groups. *Burns Open*, 1(1), 29–32. <https://doi.org/10.1016/j.burnso.2017.04.001>
- Majid, M. N., & Ummah, R. (2022). Penerapan karakter kemandirian melalui kegiatan pramuka pada kelas iv mi: studi kasus di MI Nadlatul Ulama Sumokali. *Al Kayyis*, 5(01), 1–10. <https://doi.org/10.47759/kayyis.v5i01.282>
- Maruti, E. S., Hanuwati Anurilandhan Hidayat, & Daffa Adhiza Ilfani. (2023). Peran guru dan orang tua dalam pembelajaran daring di sekolah dasar. *Madako Elementary School*, 2(1), 100–109. <https://doi.org/10.56630/mes.v2i1.64>
- Meduri, C., Davidson, C., Lim, S., Nazif, T., Ricciardi, M., Rajagopal, V., Ailawadi, G., Vannan, M., Thomas, J., Fowler, D., Rich, S., Kodali, S. K., & Hahn, R. T. (2018). 30 day results of the scout i study in patients with severe tricuspid regurgitation (Tr). *Journal of the American College of Cardiology*, 71(11), A1004. [https://doi.org/10.1016/s0735-1097\(18\)31545-6](https://doi.org/10.1016/s0735-1097(18)31545-6)
- Megananda, N. P., Suyitno, & Anindya, D. (2023). Aktualisasi nilai adiwiyata pada konstelasi pembelajaran di sekolah dasar. *Madako Elementary School*, 2(2), 163–171. <https://doi.org/https://doi.org/10.56630/mes.v2i2.210>
- Muttaqien, N., & Awiria. (2022). Peningkatan kemampuan berbicara bahasa Inggris siswa Madrasah Ibtidaiyah melalui teknik pembelajaran picture and picture. *Jurnal Madako Elementary School*, 1(2), 68–77. <https://doi.org/https://doi.org/10.56630/mes.v1i2.47>

- Nadila, N., Widiastuti, S., & Fauzi, A. (2023). Pengembangan buku ajar ide pokok berbasis potensi lokal Pantai Tambakrejo : Model kooperatif scramble di SD. *Madako Elementary School*, 2(2), 110–120.  
<https://doi.org/https://doi.org/10.56630/mes.v2i2.207>
- Nuh, M. (2014). UU RI nomor 63 tahun 2014. *Permendikbud No 63 Tahun 2014*, 1–17.  
[https://jdih.surabaya.go.id/uploads/peraturan/permenteri\\_12.pdf](https://jdih.surabaya.go.id/uploads/peraturan/permenteri_12.pdf)
- Nurul Huda, Ida Zuhroidah, Mukhammad Toha, M. S. (2021). Pelatihan pertolongan pertama pada kecelakaan (P3K) Pada guru pembina dan anggota PMR. *Jurnal Kreativitas Pengabdian Kepada Masyarakat*, 4(2), 323–328.  
<https://doi.org/10.33024/jkpm.v4i2.3746>
- Ojha, V., Jagia, P., Seth, S., & Ganga, K. P. (2020). Diagnosis of cardiac amyloidosis based on temporal sequence of nulling on ti scout: A poor man's T1 map. *Journal of the American College of Cardiology*, 75(11), 1764.  
[https://doi.org/10.1016/s0735-1097\(20\)32391-3](https://doi.org/10.1016/s0735-1097(20)32391-3)
- Oktafiani Sigarlaki, Sobon, K., & Supit, P. H. (2023). Peningkatan keterampilan membaca pemahaman melalui metode SQ3R pada siswa kelas IV SD 2 Petir. *Madako Elementary School*, 2(1), 22–34.  
<https://doi.org/https://doi.org/10.56630/mes.v2i1.164>
- Øvstebø, A. M. M., Bjørshol, C. A., Grønlien, S., Lund, H., & Lindner, T. W. (2023). Symptoms of post-traumatic stress disorder among first aid providers. *Resuscitation Plus*, 14(4068). <https://doi.org/10.1016/j.resplu.2023.100373>
- Pei, L., Liang, F., Sun, S., Wang, H., & Dou, H. (2019). Nursing students' knowledge, willingness, and attitudes toward the first aid behavior as bystanders in traffic accident trauma: A cross-sectional survey. *International Journal of Nursing Sciences*, 6(1), 65–69. <https://doi.org/10.1016/j.ijnss.2018.11.003>
- Purwasih, W., & Sahnun, A. (2022). Peningkatan mutu lembaga pendidikan dasar melalui manajemen sarana dan prasarana. *Madako Elementary School*, 1(2), 99–117. <https://doi.org/https://doi.org/10.56630/mes.v1i2.51>
- Reavley, N. J., Morgan, A. J., Fischer, J. A., Kitchener, B. A., Bovopoulos, N., & Jorm, A. F. (2021). Longer-term effectiveness of eLearning and blended delivery of Mental Health First Aid training in the workplace: 2-Year follow-up of a randomised controlled trial. *Internet Interventions*, 25, 100434.  
<https://doi.org/10.1016/j.invent.2021.100434>
- Rosuliana, N. E., Februanty, S., Mariani, D., & Cahyati, A. (2023). Optimalisasi peningkatan pengetahuan dan keterampilan anak sekolah dasar tentang pertolongan pertama pada kecelakaan (P3K) berbasis media audiovisual. *Abdimas Galuh*, 5(1), 585. <https://doi.org/10.25157/ag.v5i1.9933>
- Sabrina, A., Husniati, H., & Jiwandono, I. S. (2022). Peran kegiatan ekstrakurikuler pramuka dalam penanaman karakter siswa di SDN 26 Mataram tahun pelajaran 2020/2021. *Jurnal Ilmiah Mandala Education*, 8(1), 933–938.  
<https://doi.org/10.36312/jime.v8i1.2915>
- Sachs, J. D., Schmidt-Traub, G., Mazzucato, M., Messner, D., Nakicenovic, N., & Rockström, J. (2019). Six Transformations to achieve the sustainable development goals. *Nature Sustainability*, 2(9), 805–814.  
<https://doi.org/10.1038/s41893-019-0352-9>
- Sari, T. N., Hidayat, S., & Nuryadin, A. (2023). Pengembangan e-modul pertolongan pertama pada kecelakaan (P3K) bermuatan karakter peduli sosial untuk pramuka penggalang di SD. *Pendas: Jurnal Ilmiah Pendidikan Dasar*, 8(2), 5574–5587.
- Slingers, M., De Vos, S., & Sun, J. H. (2022). Ten years of the community-based emergency first aid responder (EFAR) system in the Western Cape of South Africa: What has happened, what has changed, and what has been learned. *African Journal of Emergency Medicine*, 12(4), 299–306. <https://doi.org/10.1016/j.afjem.2022.06.007>
- Stibies, J. M. A., Fitriani, A. A., & Yulianto, A. (2023). Analisis alat peraga terhadap motivasi belajar IPA kelas V SD Kristus Raja II Kota Sorong. *Madako Elementary School*, 2(2), 137–148.  
<https://doi.org/https://doi.org/10.56630/mes.v2i2.206>
- Trisiana, R., Munte, A., Betaubun, C. A., & Malau, R. (2023). Perlukah filsafat ber-lokalitas-naratif di sekolah dasar?: mbingkai sekat pengasuhan guru. *Madako Elementary School*, 2(1), 1–21.  
<https://doi.org/https://ojs.fkip.umada.ac.id/index.php/mes/article/view/171/42>
- Wattimena, S., Fatimah, W., Jusmawati, & Supardi, R. (2022). Hubungan pola asuh orang tua dan kebiasaan belajar terhadap prestasi siswa di sekolah dasar. *Madako Elementary School*, 1(2), 53–67.  
<https://doi.org/https://doi.org/10.56630/mes.v1i2.46>
- Widayanti, Y., Nurashiah, I., & Khaleda, I. (2023). Implementasi kegiatan ekstrakurikuler kepramukaan dalam meningkatkan kedisiplinan siswa. *Bina Gogik*, 10(2), 159–165.  
<https://doi.org/https://doi.org/10.61290/pgsd.v10i2.551>
- Wyckoff, M. H., Greif, R., Morley, P. T., Ng, K. C., Olasveengen, T. M., Singletary, E. M., Soar, J., Cheng, A., Drennan, I. R., Liley, H. G., Scholefield, B. R., Smyth, M. A., Welsford, M., Zideman, D. A., Acworth, J., Aickin, R., Andersen, L. W., Atkins, D., Berry, D. C., ... Zelop, C. M. (2023). 2022 International Consensus on Cardiopulmonary Resuscitation and Emergency Cardiovascular Care Science With Treatment Recommendations: Summary From the Basic Life Support; Advanced Life Support; Pediatric Life Support; Neonatal Life Support; Education, I. *Pediatrics*, 151(2).  
<https://doi.org/10.1542/peds.2022-060463>
- Yang, M. Der, Boubin, J. G., Tsai, H. P., Tseng, H. H., Hsu, Y. C., & Stewart, C. C. (2020). Adaptive autonomous UAV

- scouting for rice lodging assessment using edge computing with deep learning EDANet. *Computers and Electronics in Agriculture*, 179, 105817. <https://doi.org/10.1016/j.compag.2020.105817>
- Zeng, L., Fan, S., Zhou, J., Yi, Q., Yang, G., Hua, W., Liu, H., & Huang, H. (2020). Undergraduate nursing students' participation in pre-hospital first aid practice with ambulances in China: A qualitative study. *Nurse Education Today*, 90(June 2019), 104459. <https://doi.org/10.1016/j.nedt.2020.104459>
- Zou, C. Y., Lei, X. X., Hu, J. J., Jiang, Y. L., Li, Q. J., Song, Y. T., Zhang, Q. Y., Li-Ling, J., & Xie, H. Q. (2022). Multi-crosslinking hydrogels with robust bio-adhesion and pro-coagulant activity for first-aid hemostasis and infected wound healing. *Bioactive Materials*, 16(December 2021), 388–402. <https://doi.org/10.1016/j.bioactmat.2022.02.034>



# Devising an impactful religious moderation workshop for teachers and principals: The practice of Ice Berg analysis and U theory perspective

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ARTICLE INFO	ABSTRACT
<p><b>Article history</b> Received: 2023-11-09 Revised: 2024-01-20 Accepted: 2024-01-25 Published: 2024-01-27</p> <p><b>Keywords</b> Ice berg analysis Problem based discussion Religious moderation workshop U-process theory</p>	<p><i>In the academic setting, teachers and school principals are often faced with the problem of identifying and developing strategies to strengthen the atmosphere of religious moderation. Unfortunately, resources for training and support are scarce. Our study presents the design and assessment of a religious moderation workshop utilizing the problem-based discussion method, supported by Ice Berg and U theory perspective analysis. This two-session workshop aims to bolster religious moderation among school personnel. During the initial session, attendees were presented with strategies to empower religious moderation and state defense. In the subsequent meeting, attendees were encouraged to engage in problem-solving exercises focused on acts and behaviors of intolerance. Not to mention, the educators and administrators have acquired content and pedagogical expertise regarding religious moderation and state defense, which can be applied in classroom and school settings. Additionally, participants expressed a positive belief that the training effectively exemplified the integration of character-building subject matter, religious moderation, state defense, and instructional strategies. As a result, the workshop for teachers and school principals was deemed successful and effective.</i></p>
<p><b>Kata Kunci</b> Analisis Ice berg Diskusi berdasarkan masalah Lokakarya moderasi beragama U-process theory</p>	<p><b>Merancang lokakarya moderasi beragama yang berdampak pada guru dan kepala sekolah: Praktik Ice berg analysis dan U theory perspective.</b> Dalam konteks sekolah, seringkali guru dan kepala sekolah dihadapkan pada masalah mengidentifikasi dan menyusun strategi untuk menguatkan iklim moderasi beragama. Namun, lokakarya yang memberikan mekanisme untuk mendukung guru dan kepala sekolah masih terbatas. Dalam artikel kami, kami membahas pengembangan dan evaluasi lokakarya moderasi beragama dengan metode problem based discussion dibantu analisis Ice berg dan U theory perspective. Lokakarya ini dilakukan selama dua sesi. Sesi pertama, partisipan menerima materi strategi penguatan moderasi beragama dan bela negara, sedangkan sesi kedua, partisipan diajak melakukan pemecahan masalah terkait dengan tindakan dan perilaku intoleransi. Hasilnya, guru dan kepala sekolah mempunyai pengetahuan konten dan pedagogis tentang moderasi beragama dan bela negara di kelas dan di sekolah. Selain itu, mereka mempunyai persepsi positif bahwa pelatihan ini dapat memodelkan penggabungan konten mata pelajaran penguatan karakter, moderasi beragama, bela negara, dan pendekatan pengajaran dengan efektif. Dengan demikian, lokakarya yang dirancang untuk guru dan kepala sekolah terbukti berhasil dan operatif.</p>

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## INTRODUCTION

In conjunction with the program of the Ministry of Religious Affairs of the Republic of Indonesia (Alfulana, 2023; Rohmadi et al., 2022) to mainstream religious moderation in various levels of education, which was followed by a community service program offered by the Universitas Negeri Malang (UM), this service program was conducted with a focus on developing a training design for religious moderation. While this effort initially targeted the development of religious moderation for teachers responsible for students' character development, such as Islamic religious education and civic education in the previous two years, the results revealed opportunities to expand this training to school principals in the third year. Previous literature has demonstrated that principals are able to instigate change and motivate teachers to do their best work (Rachmad et al., 2023). The benefit is the coordinated approach between principals and teachers to have the same conceptualizations of religious moderation and to be eager to implement religious moderation in their respective schools.

A community service team devised a training program on religious moderation for junior high school principals in Malang Regency. This initiative differed from the previous year's program, which targeted only teachers. The training was highly valued by the principals as it fostered a shared understanding with their already-trained teaching staff. It is essential for principals to play a pivotal role in formulating policies that recognize variations in religious expression (Nthontho, 2019; Schunke, 2015). Furthermore, they are committed to incorporating the insights gained from the training into their school's strategic objectives, ensuring alignment with the institution's vision and mission.

After the successful implementation of a training program to foster religious moderation among school principals, it became apparent that resources and time were constrained for achieving this vital goal. In response, the community service team, previously reliant on lecture-style presentations, adopted problem-based discussions (PBD) into their training pedagogy. PBD was chosen for its efficacy in stimulating active participation in addressing critical challenges such as intolerance and radicalism (Yew & Goh, 2016). Additionally, PBD aligns well with the workshop's content and the characteristics of the participants, as it encourages constructive and independent problem-solving, fosters collaboration, and facilitates learning within a relevant context (Dolmans et al., 2005).

One crucial aspect of actualizing the workshop concept entailed the partnership between the community service team lead and a university professor. The latter expressed a keen interest in fortifying religious moderation in junior high schools, while the former brought valued experience and research on the topic (Hanafi, Arifianto, et al., 2022; Hanafi et al., 2023; Hanafi, Saefi, et al., 2022; Thoriquttyas et al., 2020). Research-based partnerships and workshops are essential for successfully implementing workshop designs (Wissinger et al., 2020). The goal of this workshop is to involve all stakeholders in preventing radicalization. Clear and concise communication between all parties is critical for the effectiveness of this workshop.

Funding for this workshop was obtained from UM, and SMP DFI collaborated with the community service team to ensure the accommodation of participants and necessary materials. Finally, the costs of each workshop have been covered by the budget from UM, the workplace of the community service leader, with most expenses allocated to participant allowances (Nica & Jitaru, 2022). It is worth noting that conducting a similar workshop would be significantly less costly. On the other hand, several community engagements related to religious moderation have previously targeted society (Kusnawan et al., 2022; Nurhayati et al., 2023; Rahmah & Amaludin, 2021; Virdaus & Khaidarulloh, 2021) (Risdianto & Arum, 2022; Saruroh et al., 2022) and student participants (Arief et al., 2022; Nindyarizki & Azizah, 2022; Saumantri et al., 2023; Shofaussamawati & Muhtador, 2023) with traditional formats; however, training with Ice Berg and U Theory Perspective for teachers and school principals is minimal.

The results of these community service activities was the administration of a two-session workshop on religious moderation, tailored specifically for junior high school principals in Malang District, East Java. The sessions were designed to offer practical engagement with the Problem-Based Discussion (PBD) model and to facilitate dialogue on issues pertinent to their schools. The workshop is envisioned as a platform for promoting understanding of the interplay between religion and Pancasila, thereby fostering a culture of moderation, inclusivity, and tolerance within educational institutions. This community engagements also support the achievement of the goals set forth in the Sustainable Development Goals (SDGs). Goal 16 is about promoting peaceful and inclusive societies, providing access to justice for all and building effective, accountable and inclusive institutions at all levels.

## METHOD

### Workshop Participant

The workshop aimed to provide knowledge on religious moderation to both principals and teachers. Furthermore, it sought to equip them with strategies to prevent acts of intolerance and extremism among their students, thus increasing religious tolerance. The workshop was held at the Darul Faqih Indonesia (DFI) Junior High School in Malang District, Gapura 197 street, Perum Permata Intan Agung 27, Krajan, Pandanlandung, Wagir subdistrict, Malang district, East Java 65158. In order to achieve representativeness of school principals in Malang district, this workshop location was chosen due to the accessibility of the various participants' locations. During the workshop, we supplied participants with stipends, meals, and other essential amenities. Additionally, attendees were presented with certificates for their participation in

the religious moderation workshop. One certificate was issued by the head of DFI Junior High School, the designated chairperson of the Principal's Working Conference (MKKS) in the Wagir sub-district region, and the other from the UM community service team. The workshop facilitator, together with the SMP DFI head, signed the certificate stating that the participants had completed the workshop properly, had completed all the tasks given to them, and had achieved the expected results.

The recruitment of participants involved the use of both official and informal communication tools such as WhatsApp. The community service team relayed this information to the head of the MKKS at the sub-district level, who subsequently disseminated it to all MKKS members. Those interested in the workshop were requested to provide formal statements, including their school's location, reason for interest in the workshop, source of information on religious moderation, ability to attend the full workshop, and grasp of religious moderation. About 50 participants from 30 junior high schools submitted statements expressing their interest in the workshop, a significantly higher number compared to the previous year's two workshops that only included teachers.

The community service team reviewed all potential participants' statements and selected those who met the acceptance criteria. The selection criteria for participants included having a satisfactory comprehension of religious moderation and a strong desire to gain further knowledge about it. The principals and teachers explained their reasons for attending the religious moderation workshop. Learning about the causes and factors that contribute to intolerant actions, recognizing outdated mental models associated with intolerance as a foundation for solutions, and strengthening students' character through relevant subjects were identified as the primary motivations for attending this workshop.

With barely any change from the previous two years' workshops, most of the participants were headmasters from the Wagir sub-district area. Alongside them, seven more participants from various schools in the Malang district also participated in this workshop. The attendees comprised the principals of SMP Negeri 1 Wagir, SMP Negeri 2 Wagir, SMP Tri Murti 02 Wagir, SMP Sunan Giri, SMP Darul Faqih Indonesia, SMP PGRI 01 Wagir, SMP Plus Darussalam Lawang, SMP Assa'idiyyah Kepanjen, SMP Kristen Eleos, and SMP Islam Diponegoro. Their attendance ensured representation from various sub-districts in Malang Regency. This led to a well-rounded representation. Priority was given to principals who worked in religious schools. It is noteworthy that there were applications from some principals of non-Islamic religious schools, even though the workshop was held in an Islamic educational institution. This highlighted the importance of designing the workshop more inclusively, considering perspectives beyond just Islamic.

The preparation and implementation of this workshop was assisted by UM students who currently are studying and conducting research related to religious moderation. These undergraduate research students assisted in preparing materials and observing school principals during the workshop. Over the last three years, students have participated in the workshop to optimize its activities. Their future plans include becoming Islamic religious education teachers, thus they recognize the need to learn effective implementation strategies for the classroom.

### **Workshop Format**

The workshop aims to enhance the skills of teachers and principals in theoretical perspectives on religious moderation, as well as in organizing and leading its development in schools. This will enable junior high school principals to enhance their leadership, including management and leadership, school development and culture, as well as the learning environment of principals, teachers, and students (Sahlin, 2023).

The workshop comprised two sessions in July 2023, aimed at providing principals with ample time to investigate the topic of religious moderation while adhering to their schedules. Monday was designated as the commencement day, with the workshop commencing at 8:00 am and the second session starting at 1:00 pm. The workshop space was designed without seating, and monitors and whiteboards were used for all workshop activities, allowing all participants to move around and interact to the fullest. Additionally, every participant was handed the workshop materials, a notebook to record all group discussions, and an A2 sheet of paper to record the collective results of each group.

The initial session featured a comprehensive overview of religious moderation with a presentation/discussion format, followed by group work and discussions utilizing icebergs and U-process analysis during the subsequent session. Presenting various learning techniques, including problem-solving, mindfulness, and discussions, aligns with Islamic learning principles to attain an in-depth comprehension (Alhashmi & Moussa-Inaty, 2021). Additionally, prior research suggests that implementing the discussion method can enhance comprehension and learning results in the area of Islamic religious education (Tasika & Giyarsi, 2022).

To gather feedback from participants, the community service team utilized a Google form. This survey aimed to assess their viewpoints on the advantages of the workshop regarding knowledge about teaching religious moderation and state defense. Additionally, participants were surveyed on the workshop quality and provided both closed and open-ended responses. Descriptive analysis will be conducted on the closed-ended responses using frequency calculations, while the open-ended or qualitative responses will be content analyzed based on (Bengtsson, 2016) stages and an induction research approach that includes the construction of workshop context values (Sahlin, 2023).

## RESULT AND DISCUSSION

There is significant evidence indicating a rise in radicalism, which is causing concern among academics. To address this issue, collaborate efforts have been made over the past three years to develop and conduct stages of religious moderation training. The latest workshop, conducted utilizing new techniques, revealed that the implementation of ice berg analysis and u process in PBD may positively impact participants.

The workshop commenced with the community service team's lead facilitator, who is also the first author, introducing the strategy for strengthening religious moderation and state defense (Figure 1). During this introduction, potential challenges and threats to the overall harmony of state life were highlighted. Factors identified as contributing to radicalism included rigid dogmatic mentalities and a brutal stance towards the regime (Raharjo et al., 2021). Principals and teachers are given an understanding of the characteristics of radical ideologies and movements, such as textualist thinking, the ideology of the Ummah/Caliphate concept movement, and the peddling of Islamic jargon as an alternative ideology (Hanafi, Arifianto, et al., 2022; Shaleh et al., 2020). The head of the community service team made a statement emphasizing the need to strengthen one's character through exploring contextual and interdisciplinary religious teachings, as well as cultivating a flexible mindset. It is important for students to possess self-confidence, an open-minded attitude, and the ability to learn from others (Schmidt, 2021).



Figure 1. Presentation of material on strategies to strengthen religious moderation and state defense

Feedback from the first and second year workshops indicated that teachers and principals did not understand how to solve problems in a simple and practical way. Consequently, the subsequent session centered around a discourse about resolving incidents of intolerance, specifically presented by the religious moderation instructor from the Ministry of Religious Affairs of the Republic of Indonesia. In this context, principals and teachers analyzed patterns, trends, structural systems, and mental models. Two large groups were given two news scripts: one about the attack on Shia residents in Sampang and another about two junior high school students in Batam who refused to salute the flag. Through the analysis of an ice berg (Figure 2), participants were instructed to examine factual information, events, habits, attitudes, behaviors (patterns and trends), cultural traditions, policy systems, regulations (structural systems), paradigms, perspectives, and beliefs (mental models) (Maani & Cavana, 2007), see Figure 3 for details.



Figure 2. Ice berg analysis elaboration by religious moderation facilitator

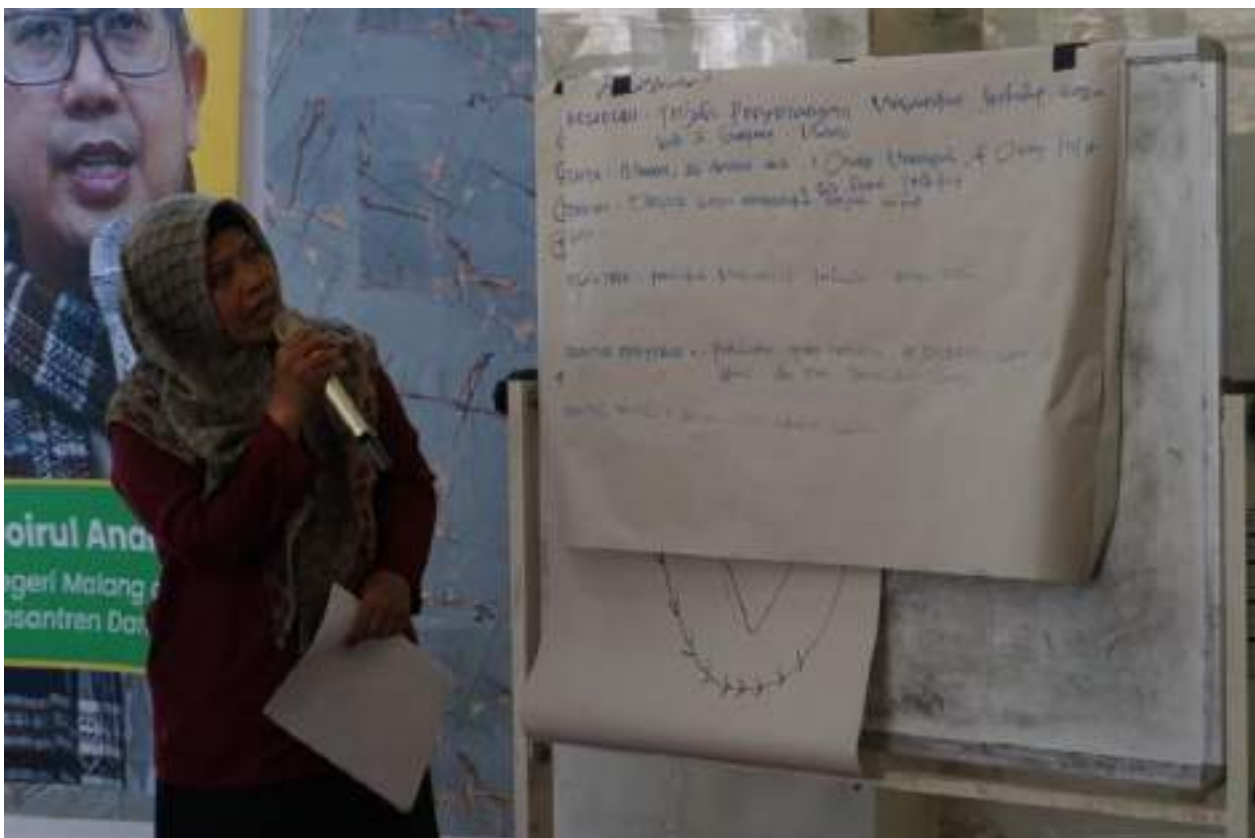


Figure 3. Participants shared their analysis of facts, patterns and trends, causal structures, and mental models.

Afterwards, both groups were tasked with creating a movement. They were subsequently reorganized into four smaller groups, each responsible for a different role, such as the education office, MKKS, religious leaders, and former



extremists. This discussion process is a crucial component in promoting religious moderation throughout society (see Figure 4). Through the U process explanation, each role was tasked with presenting their explanation of the previous mental model, the new mental model, the target, and the strategy to accomplish it (Heller, 2019). The ideas of rethinking, redesigning, and reframing underscore the significance of discovering solutions and enforcing new behaviors and habits to curb acts of intolerance in society, which can readily infiltrate the school setting.



Figure 4. Role-based discussion process (in the picture, the role of MKKS)

At the conclusion of the workshop, attendees were allotted time to conduct a Google Form survey which recorded a noteworthy metric - the tangible effects of the workshop. The survey outcomes indicated that the participants believed they gained substantial expertise in the areas of both religious moderation and state defense subsequent to the workshop. The respondents further recognized that they acquired proficiency in pedagogical techniques and content that are pertinent to their respective areas of instruction. Participants gained knowledge on religious moderation and state defense, as well as their implementation in classrooms and schools. During the workshop, all participants strongly agreed that the training effectively demonstrated how to incorporate character strengthening, religious moderation, and national defense into classroom teaching approaches. Additionally, all participants rated the workshop between 75-100% or agreed with its content.

Findings from the qualitative data revealed three main themes of interest: the value of the workshop context in terms of format, timing, and benefits. Additionally, timing was noted as a crucial factor in maximizing the benefits of the workshop context. Finally, participants highlighted the concrete benefits gained from the workshop, such as increased knowledge and skills. Participants emphasized the significance of a specialized format, like the one implemented during this workshop. "It was beneficial to have professional development focused specifically on our needs as a district." One school principal stated: Learning about religious moderation and state defense can be pursued independently by drawing from various sources. However, exchanging experiences with other school principals, as well as offering support and motivation, can provide a sense of satisfaction that can lead to increased enthusiasm for implementing such practices. Teachers also provided positive feedback. "I learned about religious moderation last year. Although it differs from the topic at hand, I believe it is a good example of effective cooperation between teachers and principals in this application."

Secondly, the allocation of sufficient time emerged as a crucial factor in the success of the workshops for the principals. They recognized the importance of when and for how long the training should take place. The religious moderation training was appreciated for making things easier, without jeopardizing too much of the principal's time. According to a principal, amidst so much work, acquiring new knowledge is difficult.



The civic education teacher noted that finding a workshop that is well-organized and effective in terms of location and schedule can be a challenge. Additionally, traveling to attend workshops can be difficult. However, two sessions in a day provide ample time to learn about the theory and case analysis of religious moderation. All principals reflected on the benefits of participating in the workshop and agreed that it was worthwhile. "We voluntarily attended this workshop, and found the materials and discussions to be well-organized. The process of reading, analyzing, and solving a case was enjoyable, and has provided us with knowledge and strategies to strengthen religious moderation in our school." Teachers also gave positive feedback. "This workshop is a valuable component of my professional development as it has helped me enhance my knowledge on religious moderation and its connection with pedagogy.

The two-session workshop was highly impressive as it introduced me to the iceberg analysis technique. This technique can effectively enable participants to analyze the core of the problem more comprehensively (Liu et al., 2021). According to (McLean et al., 2019) explanation of the iceberg theory, participants tend to focus on individual, disconnected events, allowing for a deeper understanding of acts of religious intolerance. However, there needs to be further improvement in our comprehension of religious moderation. A thorough comprehension of both the system structure and mental models will furnish insights about radicalism behavior, the reasons for the recurring nature of this phenomenon, and the role of strengthening religious moderation in resolving this problem.

U-theory aims to tackle radicalism and intolerance through a personal approach (Heller, 2019). The program encourages participants to use fairness, common sense, conscience, and caution to make non-biased judgments. Participants are advised not to rely on past interaction patterns to make decisions. Theory U is expected to facilitate the transition from outdated to contemporary mental models, encompassing not only individuals at the teacher or principal level, but also generating simultaneous changes among them. We found that utilizing U-theory to explore novel strategies for building new mental models resulted in increased perceptions of clarity, focus, and authenticity. These outcomes are highly relevant to the personal statements of teachers and principals who aspire to professional growth (Calia et al., 2018).

## CONCLUSION

To conclude, the two-session workshop designed for junior high school teachers and principals proved to be successful and operational. The workshop's quality and structure were highly rated by all participants, who provided positive feedback. They described it as "one of the best religious moderation workshops I have ever attended," praising its well-planned content and unique approach. A principal attendee noted the workshop's rarity in providing inspiration and building awareness through simple but profound thought processes. Participants also enjoyed the activities and expressed ease in accepting the presented content. This evidence indicates the workshop's success.

The service team was inspired by workshop participants' enthusiasm for religious moderation, including those who attended previous workshops. The desire to increase religious moderation and reduce intolerant actions also motivated the principals to learn about it. Overall, principals expressed interest in involving all teachers or at least mobilizing character development teachers to prioritize religious moderation.

Key elements which contributed the success of the workshop included combining the scholarly expertise of a college professor with a certified religious moderation trainer, group discussions for problem-solving ideas, and setting goals for each participant to present ideas based on their assigned role. While financial support to offer stipends and accommodation for participants is beneficial, it is not deemed essential and significant. Institutional donations for utilizing DFI Junior High School's facilities can reduce expenses while still providing a communal area for conducting workshop activities.

Our workshop development and implementation experience aims to inspire individuals, particularly those in the field of religious moderation, to apply this model to other locations and different levels of school administration. Increased exposure to religious moderation will heighten school principals' awareness and enable them to contribute to the creation of moderate schools.

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## REFERENCES

- Alfulana, M. W. (2023). Religious moderation in the perspective of the ministry of religion and its implementation on Islamic education book in senior high school. *Devotion : Journal of Research and Community Service*, 4(3), Article 3. <https://doi.org/10.36418/devotion.v4i3.430>

- Alhashmi, M., & Moussa-Inaty, J. (2021). Professional learning for Islamic education teachers in the UAE. *British Journal of Religious Education*, 43(3), 278–287. <https://doi.org/10.1080/01416200.2020.1853046>
- Arief, M. I., Maisarah, M., Husin, G. M. I., Mailita, M., Ainah, N., Yusuf, M., & Ramadhan, H. (2022). Pengabdian kepada masyarakat “moderasi beragama untuk penguatan karakter bangsa di tingkat remaja pada SMAN 2 Martapura Kalimantan Selatan.” *Al-Khidma: Jurnal Pengabdian Masyarakat*, 2(2), Article 2. <https://doi.org/10.35931/ak.v2i2.1458>
- Bengtsson, M. (2016). How to plan and perform a qualitative study using content analysis. *NursingPlus Open*, 2, 8–14. <https://doi.org/10.1016/j.npls.2016.01.001>
- Calia, R. C., Oliveira, M. S. B. D., & Demarzo, M. m p. (2018). Mindfulness and theory U for the professional sense of purpose. *RAM. Revista de Administração Mackenzie*, 19, eRAMG180021. <https://doi.org/10.1590/1678-6971/eRAMG180021>
- Dolmans, D. H. J. M., De Grave, W., Wolfhagen, I. H. A. P., & van der Vleuten, C. P. M. (2005). Problem-based learning: Future challenges for educational practice and research. *Medical Education*, 39(7), 732–741. <https://doi.org/10.1111/j.1365-2929.2005.02205.x>
- Hanafi, Y., Arifianto, M. L., Saefi, M., Mahliatussikhah, H., Anam, F. K., Hassan, A. R., & Hidayatullah, M. F. (2022). Sentiment prevalence on Jihad, Caliphate, and Bid’ah among Indonesian students: Focusing on moderate-radical muslim group tension. *Cogent Social Sciences*, 8(1), 2054532. <https://doi.org/10.1080/23311886.2022.2054532>
- Hanafi, Y., Saefi, M., Diyana, T. N., Ikhsan, M. A., Faizin, N., Thoriquttyas, T., & Murtadho, N. (2022). Students’ perspectives on religious moderation: A qualitative study into religious literacy processes. *HTS Teologiese Studies / Theological Studies*, 78(1), Article 1. <https://doi.org/10.4102/hts.v78i1.7638>
- Hanafi, Y., Saefi, M., Diyana, T. N., Ikhsan, M. A., Yani, M. T., Suciptaningsih, O. A., Anggraini, A. E., & Rufiana, I. S. (2023). What content offers and how teachers teach: Religious Moderation-integrated teaching in Indonesia. *HTS Teologiese Studies / Theological Studies*, 79(2), Article 2. <https://doi.org/10.4102/hts.v79i2.9070>
- Heller, P. W. (2019). The philosophy of theory U: A critical examination. *Philosophy of Management*, 18(1), 23–42. <https://doi.org/10.1007/s40926-018-0087-0>
- Kusnawan, A., Nasution, M. S. A., Ritonga, M. H., Heldani, S. U., & Syah, M. F. (2022). Penguatan moderasi beragama pada masyarakat desa multi agama (Kegiatan pengabdian kepada masyarakat melalui KKN kolaboratif mandiri di Desa Sikeben, Kec. Sibolangit, Kab. Deli Serdang, Sumatera Utara). *Fajar: Media Komunikasi dan Informasi Pengabdian Kepada Masyarakat*, 22(2), Article 2. <https://doi.org/10.15408/jf.v22i2.28552>
- Liu, T., Yang, X., & Guo, Y. (2021). Research on Influencing factors of technological independent innovation of equipment manufacturing enterprises from the perspective of Iceberg theory. *Complexity*, 2021, e2551680. <https://doi.org/10.1155/2021/2551680>
- Maani, K. E., & Cavana, R. Y. (2007). *Systems thinking, system dynamics: Managing change and complexity*. Pearson Education New Zealand.
- McLean, S., Read, G. J. M., Hulme, A., Dodd, K., Gorman, A. D., Solomon, C., & Salmon, P. M. (2019). Beyond the Tip of the iceberg: Using systems archetypes to understand common and recurring issues in sports coaching. *Frontiers in Sports and Active Living*, 1, 49. <https://doi.org/10.3389/fspor.2019.00049>
- Nica, R., & Jitaru, G. (2022). Competitive funding for institutional development. The Romanian experience between 2016–2020. In A. Curaj, J. Salmi, & C. M. Hâj (Eds.), *Higher Education in Romania: Overcoming Challenges and Embracing Opportunities* (pp. 255–274). Springer International Publishing. [https://doi.org/10.1007/978-3-030-94496-4\\_13](https://doi.org/10.1007/978-3-030-94496-4_13)
- Nindyarizki, S. N., & Azizah, N. (2022). Membangun nilai-nilai moderasi beragama pada anak di taman pendidikan Al-Qur’an Al-Hilal Karangkemiri. *Pabitara : Jurnal Pengabdian Masyarakat*, 1(1), 1–9.
- Nthontho, M. (2019). School principals managing policy change: The case of religion policy. *Religion & Education*, 47, 1–21. <https://doi.org/10.1080/15507394.2019.1668254>
- Nurhayati, I., Mumtahanah, M., Sumiati, S., Basa, P. M., Damanhuri, D., & Rahman, M. (2023). Pembinaan kampung moderasi beragama pada masyarakat pesisir di Madura. *Community Development Journal : Jurnal Pengabdian Masyarakat*, 4(5), Article 5. <https://doi.org/10.31004/cdj.v4i5.20845>
- Rachmad, Y. E., Moka, A., Badriyyah, E. S. R., Gusliana, E., & Tawil, M. R. (2023). The effect of principal transformational leadership and motivation on performance of teacher in Islamic elementary school. *Journal on Education*, 5(3), Article 3. <https://doi.org/10.31004/joe.v5i3.1493>
- Raharjo, A. B., Mawardi, I., & Okaputra, D. D. (2021). Seeds of extremism among student of Muhammadiyah School of Yogyakarta. *Ta’dib: Jurnal Pendidikan Islam*, 26(2), Article 2. <https://doi.org/10.19109/td.v26i2.11638>
- Rahmah, L. A., & Amaludin, A. (2021). Penerapan interaksi sosial antar masyarakat melalui moderasi beragama dan sikap toleransi di Desa Gentasari Kecamatan Kroya Kabupaten Cilacap. *To Maega : Jurnal Pengabdian Masyarakat*, 4(3), Article 3. <https://doi.org/10.35914/tomaega.v4i3.860>
- Risdianto, F., & Arum, I. M. (2022). Penguatan moderasi beragama dan toleransi melalui ‘Quotes’ di Kampung Mrican, Gendongan, Tingkir, Salatiga. *Bubungan Tinggi: Jurnal Pengabdian Masyarakat*, 4(2), Article 2. <https://doi.org/10.20527/btjpm.v4i2.5152>

- Rohmadi, R., Arroisi, J., & Muslih, M. K. (2022). Tinjauan kompatibilitas konsep moderasi beragama Kementerian Agama Republik Indonesia Dengan Wasathiyatul Islam. *Muaddib : Studi Kependidikan Dan Keislaman*, 12(2), Article 2. <https://doi.org/10.24269/muaddib.v12i2.6311>
- Sahlin, S. (2023). Professional development of school principals – how do experienced school leaders make sense of their professional learning? *Educational Management Administration & Leadership*, 17411432231168235. <https://doi.org/10.1177/17411432231168235>
- Saruroh, E. F., Prayoga, W. R., Nurbalqis, S., Fransisca, Y. A., K, E. R., Ayuni, P., Yanti, I., Chandra, J., Fajriani, F., Dwiani, N., Rahayu, S., Sy, A. R., & Kamarullazi, K. (2022). Peningkatan nilai moderasi beragama melalui kegiatan sosialisasi moderasi beragama di Kampung Mansur Besar Kelurahan Tembeling Tanjung Kabupaten Bintan. *Jurnal Pengabdian Dan Pemberdayaan Masyarakat Kepulauan Riau (JPPM Kepri)*, 2(1), Article 1. <https://doi.org/10.35961/jppmkepri.v2i1.324>
- Saumantri, T., Hafizd, J. Z., & Faturrahman, R. F. (2023). Penguatan moderasi beragama berbasis kebangsaan pada siswa remaja di Masjid Al-Ma'had Dukupuntang. *Mafaza : Jurnal Pengabdian Masyarakat*, 3(2), Article 2. <https://doi.org/10.32665/mafaza.v3i2.2289>
- Schmidt, L. (2021). Aesthetics of authority: 'Islam Nusantara' and Islamic 'radicalism' in Indonesian film and social media. *Religion*, 51(2), 237–258. <https://doi.org/10.1080/0048721X.2020.1868387>
- Schunke, B. (2015). *The management of religious diversity in schools from legal perspective*. <https://repository.up.ac.za/handle/2263/52966>
- Shaleh, S., Zamroni, Z., Mukminan, M., Ashadi, A., Sudrajat, A., Supaat, S., Jandra, M., & Ramadhan, S. (2020). Mapping the threat of radicalism symptoms among upper-secondary students: A mix method approach. *International Journal of Advanced Science and Technology*, 29, 3055–3068.
- Shofaussamawati, S., & Muhtador, M. (2023). Peningkatan Pemahaman moderasi beragama bagi santri: Pencegahan ekstrimisme di kalangan Santri. *Gusjigang Jurnal Pengabdian Masyarakat*, 1(1), Article 1.
- Tasika, Y., & Giyarsi. (2022). The effectiveness of the discussion method to increase students' understanding and activeness in Islamic Religious Education Subjects. *Nusantara Education*, 1(1), Article 1.
- Thoriquttyas, T., Saputra, M., Huda, I., Hanafi, Y., & Zaimatus, N. (2020). Strengthening the religious moderation through innovation of Islamic Religious Education (IRE) based civic intelligence and the Values Clarification Technique (VCT). *KnE Social Sciences*, 219–227. <https://doi.org/10.18502/kss.v4i14.7878>
- Virhaus, D. R., & Khaidarulloh, K. (2021). Pengabdian masyarakat berbasis moderasi beragama: Studi implementasi KKN Nusantara IAIN Ponorogo tahun 2021 di daerah 3 T, Konawe, Sulawesi Tenggara. *InEJ: Indonesian Engagement Journal*, 2(2), Article 2. <https://doi.org/10.21154/inej.v2i2.3762>
- Wissinger, J. E., Knutson, C. M., & Javner, C. H. (2020). Designing Impactful green and sustainable chemistry workshops for high school teachers. In *Chemistry Education for a Sustainable Society Volume 1: High School, Outreach, & Global Perspectives* (Vol. 1344, pp. 1–14). American Chemical Society. <https://doi.org/10.1021/bk-2020-1344.ch001>
- Yew, E. H. J., & Goh, K. (2016). Problem-based learning: An overview of its process and impact on learning. *Health Professions Education*, 2(2), 75–79. <https://doi.org/10.1016/j.hpe.2016.01.004>



# Processing snakehead fish as a high-protein modern healthy food product in the snakehead fish farmers' group


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ARTICLE INFO	ABSTRACT
<p><b>Article history</b>            Received: 2023-11-14            Revised: 2024-01-11            Accepted: 2024-01-16            Published: 2024-01-31</p> <p><b>Keywords</b>            Unemployment and Poverty            Community Empowerment            Snakehead Fish</p>	<p><i>This activity is a response to the impact of the Covid-19 pandemic, which has led to a high unemployment rate in Gresik since March 2020. Several industries have conducted layoffs, affected 2,300 employees and led to an increase in poverty levels. The Community-Based Empowerment Program in Tenggor Balongpanggung Village was initiated as a solution. This village is rich in snakehead fish resources but requires human resource development in its distribution. Through training, the villagers will learn how to enhance the added value of snakehead fish, turning it into a high-protein modern healthy food product that can be marketed, providing economic benefits for both the commodity and UD Sumber Rejeki Lestari. The main objectives of this activity are to introduce UD Sumber Rejeki Lestari as the source of raw materials for snakehead fish, provide information about business opportunities through partnerships, create business opportunities for the community through partnerships, and improve the community's skills in processing snakehead fish.</i></p>
<p><b>Kata kunci</b>            Pengangguran dan Kemiskinan            Pemberdayaan masyarakat            Ikan Gabus</p>	<p><b>Pengolahan ikan gabus sebagai produk pangan sehat modern berprotein tinggi di kelompok petani ikan gabus.</b> Kegiatan ini merupakan respon terhadap dampak pandemi Covid-19 yang menyebabkan tingginya angka pengangguran di Gresik sejak Maret 2020. Beberapa industri melakukan PHK sehingga berdampak pada 2.300 karyawan dan berujung pada peningkatan angka kemiskinan. Program Pemberdayaan Berbasis Masyarakat di Desa Tenggor Balongpanggung digagas sebagai solusi. Desa ini kaya akan sumber daya ikan gabus namun memerlukan pengembangan sumber daya manusia dalam pendistribusiannya. Melalui pelatihan, masyarakat akan belajar bagaimana meningkatkan nilai tambah ikan gabus menjadi produk makanan sehat modern berprotein tinggi yang dapat dipasarkan, memberikan manfaat ekonomi baik bagi komoditas tersebut maupun UD Sumber Rejeki Lestari. Tujuan utama dari kegiatan ini adalah untuk memperkenalkan UD Sumber Rejeki Lestari sebagai sumber bahan baku ikan gabus, memberikan informasi peluang usaha melalui kemitraan, menciptakan peluang usaha bagi masyarakat melalui kemitraan, dan meningkatkan keterampilan masyarakat dalam pengolahan ikan gabus.</p> <p style="text-align: right;">Copyright © 2024, Anjeli, et al.            This is an open access article under the <a href="#">CC-BY-SA</a> license</p> <div style="text-align: right;">  </div>

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## INTRODUCTION

Gresik Regency currently boasts the largest expanse of ponds in the East Java region, with a total area spanning 62,207 hectares, constituting 63% of the total pond area in East Java. The regency has a significant fisheries sector, encompassing both marine and pond fisheries, as well as inland fisheries. In 2012, Gresik was designated as a pioneering regency in the development of aquaculture, with a primary focus on cultivating milkfish and shrimp. The catfish (*Plotosus canius*) is one of the coastal area's prominent fish species, especially within the mangrove ecosystem. Catfish serves as a vital fisheries resource for the coastal communities and belongs to the *Plotosidae* family, playing a crucial role in the local economy (Astawan, 2007; Hendri et al., 2023; Sari et al., 2023).

According to the data from the Ministry of Marine Affairs and Fisheries in 2018 (*Kementrian Kelautan Dan Perikanan (KKP)*, 2019), catfish production experienced a significant upsurge from 841,750 tons to 1.81 million tons between 2017 and 2018 (*Kementrian Kelautan Dan Perikanan (KKP)*, 2018), with an average production growth rate of 56.32% from 2015 to 2018 (*Kementrian Kelautan Dan Perikanan (KKP)*, 2020). Catfish consumption has also been on the rise, with 2021 data indicating that the average per capita consumption was 54.49 kilograms per year, expected to reach approximately 62.50 kilograms per capita by 2023. This illustrates significant year-on-year growth, making catfish cultivation a promising prospect. In addition to being easily cultivated, catfish also boasts excellent nutritional qualities (Akinpelu et al., 2021; Canti et al., 2023; Mobdy et al., 2021; Otolowo et al., 2018). Based on this data, catfish is not only straightforward to cultivate but also meets high nutritional standards. The local population has grown accustomed to consuming catfish as a staple food, positioning it as a solution for family food security alongside rice (Niko, 2020).

UD Sumber Rejeki Lestari, as a partner of the Community Service Program (PBM), has been actively involved in productive economic activities through catfish cultivation since 2019, obtaining a trade license in 2021. This endeavor encompasses an 800 square meter area and is supported by three employees who employ modern catfish cultivation methods with a booster system. The catfish production capacity at UD Sumber Rejeki Lestari reaches 3.5 quintals per pond. With this capacity across 25 ponds, production reaches approximately 87.5 quintals every three months. Despite effective production and a customer base, profit margins remain minimal due to the absence of added value in the sold commodity. (Purcell, et al., 2017).

Several indicators underscore the imperative for collaboration with the community at UD Sumber Rejeki Lestari. Firstly, although catfish production has permeated the market, the profitability margins remain low due to the lack of added value. Secondly, there is a continuous rise in market demand for catfish, and by providing training in catfish cultivation to the community, there is a potential increase in catfish production. Thirdly, human resource development is essential for processing catfish into value-added products. Fourthly, collaborative efforts with the community are necessary to explore opportunities in the processed catfish food industry. Finally, it is crucial to raise awareness about catfish cultivation to maximize the utilization of resources held by UD Sumber Rejeki Lestari.

The participants in this activity comprise the local PKK (Family Welfare Empowerment) groups, agricultural laborers, and Karang Taruna youth organization members in Tenggor Village. This village is renowned for its agricultural potential, particularly in watermelons and sweet potatoes. Its residents primarily work as farmers or laborers in manufacturing companies. The impact of the pandemic, including reduced purchasing power, layoffs, and economic hardship, has been felt in this area. The village government, under the leadership of Village Chief Mr. Kowianto, allocated village funds to assist the pandemic-affected residents with essential food distribution (Radar News, 2020). However, this solution was temporary in nature, and long-term efforts are required to boost the local economy (Aisyah, 2020).

This Community Service Program activity aligns strongly with several United Nations Sustainable Development Goals (SDGs) established by the international community. The following are the connections between this initiative and various SDGs: SDG 1: No Poverty, SDG 2: Zero Hunger, SDG 8: Decent Work and Economic Growth, SDG 12: Responsible Production and Consumption and SDG 14: Life Below Water (Bappenas, 2019).

## METHOD

The implementation method for the Community Service Program in addressing the issues faced by the productive partner, UD. Sumber Rejeki Lestari, revolves around the challenges of a shortage of human resources and enhancing the market value of their products. The solution proposed by the service providers is to mobilize participants from the surrounding community in the Balongpanggung District to meet the human resource needs and to offer them as business partners in processing and marketing catfish. In addressing the issues related to the catfish products, the solution offered is to increase the added value of catfish by transforming them into "smoked catfish" products, with the expectation of improving profit margins compared to selling catfish without further processing (Agustini, T.W, A.S. Fahmi, 2006). The method employed to provide these solutions to the community involves engaging the local population in the PKM, conducting simple catfish farming training to enhance their food security, offering training in preparing processed catfish products to improve their skills, and creating business opportunities for them as business partners (Amalia, 2012).

The implementation method for non-productive partners (women's community groups, youth organizations, and rural laborers from the Tenggor village) in this Community Service Program involves mobilizing participants from the surrounding community as business partners in processing and marketing snakehead fish. The community will be engaged in training on snakehead fish cultivation and the production of processed fish-based food products. Increasing the added value of snakehead fish is expected to yield higher profit margins. The method employed includes training, mentoring, and community empowerment. For non-productive partners, this program will enhance entrepreneurial literacy, offer business opportunities, and provide training on the use of vacuum devices for product packaging. In both cases, data collection and analysis will be utilized to measure the success of this program (Fauzi, 2019).



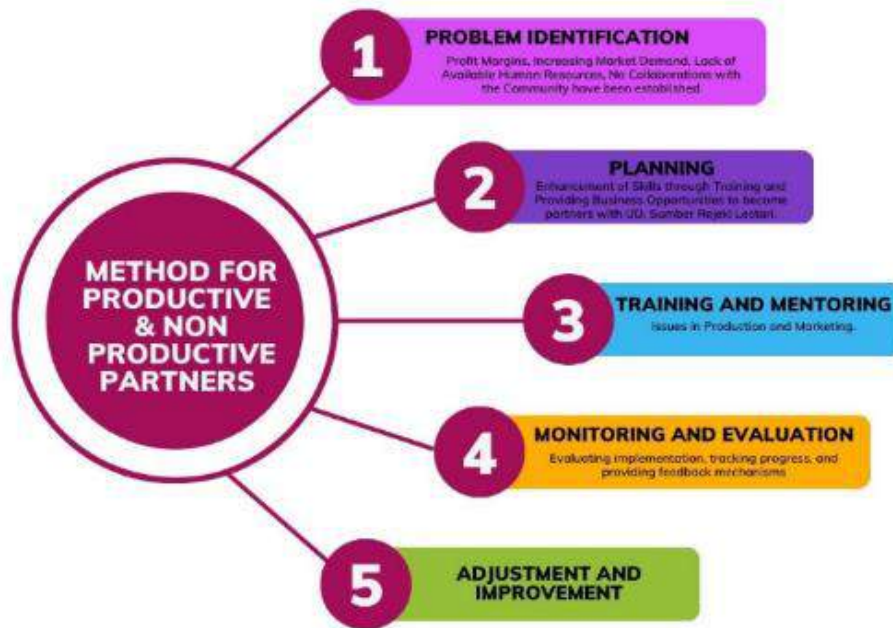


Figure 1. Implementation Method for Productive and Non-Productive Partners

## RESULTS AND DISCUSSION

This community service project has resulted in some meaningful activities that empower community in improving a modern healthy food product of snakehead fish. Some programs held are described as follows.

### For Productive Partners (UD Sumber Rejeki Lestari)

#### *Increased Profit Margins*

One of the challenges faced by UD Sumber Rejeki Lestari was the low profit margin from snakehead fish sales due to the lack of added value in the commodity. However, through training and mentoring, UD Sumber Rejeki Lestari successfully improved the profit margins from snakehead fish sales. By introducing added value to the commodity, they were able to achieve more lucrative results. This outcome demonstrates that the community engagement approach has effectively provided a solution for productive partners to enhance their economic well-being.

**Meeting Market Demand:** Before the implementation of this program, UD Sumber Rejeki Lestari encountered difficulties in meeting the increasing market demand, which could negatively affect business sustainability. Through the guidance provided in the training, UD Sumber Rejeki Lestari can now meet the rising market demand (Table 1). Increased productivity in snakehead fish cultivation through best practices has resulted in a sufficient supply to meet market demand. This indicates that the community engagement activities have successfully addressed this challenge and assisted productive partners in optimizing their potential.

Tabel 1. Production results of snakehead fish

Before (July 5 <sup>th</sup> , 2023)		After (October 3 <sup>rd</sup> , 2023)		Improvement
1 Pond	25 Ponds	1 Pond	25 Ponds	
±3,5 quintal	±87,5 quintal	±3,9 quintal	±97,5	±10 quintal

Data Source: (UD. Sumber Rejeki Lestari, 2020)

#### *Competent Human Resources*

Previously, UD Sumber Rejeki Lestari lacked competent human resources (HR) who could assist in processing snakehead fish into value-added products. Competent HR is the key to the success of business development and product quality enhancement. Through the technical training provided in the community service activities (Figure 2), UD Sumber Rejeki Lestari now possesses competent human resources for processing catfish. They have gained an understanding of breeding techniques, pond management, disease control, and the utilization of technology in snakehead fish farming. These competent HR have greatly contributed to UD Sumber Rejeki Lestari's increased productivity and the improved quality of snakehead fish produced. This outcome serves as evidence that the training provided in community service activities has successfully enhanced the productive partners' capacity and aided them in optimizing their available resources (Haryanti, H., Iskandar, I., Rizal, A., Aliah, R. S., & Sachoemar, 2023).



Figure 2. Effective and efficient technical training and snakehead fish farming assistance

### **Formed Partnerships**

Prior to this activity, UD Sumber Rejeki Lestari had not established partnerships with the local community. Partnerships are a key factor in the success of developing a business and optimizing its potential. In this activity, partnerships with the local community have been formed. Through training and mentoring, the community is encouraged to create and strengthen community networks, share experiences, and establish mutually beneficial partnerships. These partnerships create a win-win solution between UD Sumber Rejeki Lestari and the community in developing opportunities for processed fish snack businesses. This partnership benefits UD Sumber Rejeki Lestari by improving the distribution of catfish and providing additional income to the community. This outcome is a tangible example of how a collaborative approach in community service activities can create mutually beneficial partnerships (Winarno, 2014).

### **For Non-Productive Partners (Tenggor Balongpanggang Village Community)**

#### ***Socialization and snakehead fish farming literacies***

Before this activity was carried out, the community in Tenggor Balongpanggang Village had limited understanding of catfish farming. They were not aware of the economic potential that could be generated through snakehead fish farming. However, through entrepreneurship socialization and literacy (Figure 3), the community has gained a better understanding of snakehead fish farming. They now have knowledge about the economic potential of snakehead fish farming and how to utilize it. Socialization about snakehead fish farming by UD Sumber Rejeki Lestari and direct visits to snakehead fish farming sites have inspired the community. They now realize that through snakehead fish farming, they can improve individual and community economic scales. Snakehead fish farming can be a source of income for families, especially since it can be done with relatively simple means. This outcome demonstrates that community service activities have successfully increased entrepreneurial literacy and raised awareness among the community about the economic potential around them.



Figure 3. Socialization of UD Sumber Rejeki Lestari to the Tanggor Village Community

### ***Business Opportunity Offer***

In addition to literacy about catfish farming, the community now also has knowledge about business opportunities and how to establish partnerships with UD Sumber Rejeki Lestari (Figure 4). They understand that entrepreneurship can be pursued and how to become competent marketers. The community has been encouraged to offer business opportunities and ignite interest and entrepreneurial spirit. Offering business opportunities requires access and information obtained through networking and business cooperation. In this activity, a business partnership between the community and UD Sumber Rejeki Lestari has been established as a win-win solution for both parties. In this partnership, snakehead fish distribution has increased, and the community has generated income from this partnership. This outcome is a real example of how community service activities have successfully stimulated the entrepreneurial spirit of the community and provided them with knowledge on how to develop their businesses (Ubadillah.A & Hersoelistyorini.W, 2010).



Figure 4. Entrepreneurship Training

### ***Training in Snakehead Fish Processing***

One of the significant outcomes of this activity is the training and mentoring in processing snakehead fish into high-protein modern health foods (Sofyan & Karim, 2014). The community has been trained in various Sembilang fish processing techniques, including smoking, deep-frying, grilling, and product innovation. (Rahmawati, 2012). They have also learned various methods of processing snakehead fish, such as making snakehead fish nuggets (Bliss Bites), meatballs, fish floss (Crisps), katsu, and smoked fish. This training also includes guidance on presentation and product promotion. With this knowledge, the community can now process snakehead fish into various high-quality, healthy food products (Fona & Kurniasih, 2017). This outcome demonstrates that the training and skill development approach in community service activities have provided tangible benefits to the community and helped them develop processed snakehead fish food businesses (Haris & Nafsiyah, 2019).

### ***The Use of Vacuum Machines***

One crucial step in adding value to snakehead fish products is by utilizing vacuum devices in product packaging (Figure 5). However, the proper use of this equipment requires specific knowledge and skills. Through training, the community has been educated in the operation of vacuum machines (Martuti et al., 2014). They can now operate these devices correctly, enhancing the efficiency of the snakehead fish processing process and achieving a significant increase in added value. With a comprehensive understanding of the use of this high-tech equipment, they can improve product quality and reach a broader market. This outcome is a tangible example of how technical training in community service activities can benefit the community and assist them in increasing the added value of their products (Gozali et al., 2001).

### ***Training and Marketing Product Assistance***

Marketing processed snakehead fish products is a crucial step in developing the economic potential of the community. The community has received training and assistance in marketing processed snakehead fish products (Figure 6). They can now market their products more effectively, expand their access to a broader market, add value to their products, and increase economic income at the village level. Through this training, they have learned how to market products effectively, establish collaborations with various parties, and utilize various distribution channels. This outcome is evidence that community service activities have successfully enhanced the marketing skills of the community and provided them with opportunities to reach a broader market (Mairizal, 2010).





Figure 5. Training in Vacuum Machine Utilization



Figure 6. Product Marketing Training

### **Impact and Changes that Occurred**

**Economic Improvement:** One of the most significant impacts of this activity is the economic improvement for productive partners (UD Sumber Rejeki Lestari). Through increased profit margins and meeting market demand, UD Sumber Rejeki Lestari now has a more profitable and sustainable business. This improvement has a positive impact on their income and helps them overcome economic constraints. **Attitude and Entrepreneurial Spirit Change:** Non-productive members of the Tenggor Balongpanggung Village have undergone a significant change in their attitude toward entrepreneurship. They now have a high entrepreneurial spirit and realize the economic potential around them. This change provides them with opportunities to create additional income and improve their well-being.

### **Successful Partnerships**

The partnership formed between UD Sumber Rejeki Lestari and the local community is an example of a successful partnership. This partnership benefits both parties, improves the distribution of snakehead fish, and provides additional income to the community. It also creates a partnership model that can be adopted in other regions.

### **Improved Food Security**

This activity has contributed to increased food security in the area. Higher quality and value-added processed snakehead fish products have helped the community meet their food needs. This has a positive impact on family health and nutrition, especially for children.

### **Reduced Unemployment**

One of the serious issues faced by the local community is unemployment due to job layoffs in industries and other economic sectors. This activity has provided a solution for some members of the community to create new sources of income through snakehead fish farming and processing. **Contribution to the "Eat Fish Movement":** This activity also

supports the "Eat Fish Movement," which aims to prevent stunting. High-protein processed snakehead fish products have contributed to efforts to improve children's nutrition and prevent stunting in the region.

Therefore, the "Processing of Snakehead Fish as a High-Protein Modern Health Food Product in the Snakehead Fish Farmer Group of Balongpanggang District, Gresik" activity has successfully achieved its goals in providing solutions for both productive and non-productive partners. Through a holistic and collaborative community engagement approach, this activity has had a positive impact on the community and helped them optimize their economic potential. The success of this activity also contributes to social and economic development in the region and enhances the reputation of the university as an educational institution that cares and plays a role in social transformation. Thus, this community engagement activity is a tangible example of how universities can contribute to community advancement and create sustainable changes (Sunarma, 2004).

## CONCLUSION

The community engagement activity, "Processing Snakehead Fish as High-Protein Modern Health Food Products," conducted in Balongpanggang District, Gresik, serves as a practical solution for productive partner UD Sumber Rejeki Lestari, enhancing profit margins through value addition to products. Simultaneously, the program successfully addresses the growing market demand for snakehead fish by improving aquaculture productivity. Non-productive partners, including Family Welfare Empowerment, Karang Taruna (Youth organization), and rural laborers, benefit from entrepreneurship training, business opportunities, and skills in processing snakehead fish into high-protein modern health food products. This initiative not only elevates the welfare of both productive and non-productive partners but also supports the government's anti-stunting efforts by improving community access to nutritious food. The community engagement approach, coupled with collaboration among universities, government entities, and business partners, holds the potential to contribute significantly to social and economic development in the region.

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## REFERENCES

- Agustini, T. W., & Fahmi, U. A. (2006). Diversification of fisheries products. Penerbit Universitas Diponegoro.
- Aisyah, I. (2020). Ketahanan pangan keluarga di masa pandemi Covid 19. *Jurnal Kesehatan Komunitas Indonesia*, 16(2), 179-189. <https://doi.org/10.37058/jkki.v16i2.2576>.
- Akinpelu, A. T., Akinloye, O. M., Olumuyiwa, A. O., Afolabi, O. O., & Stephen, O. A. (2021). Comparative assessment of the nutritional fitness of wild and cultured african catfish (*Clarias gariepinus*). *Annual Research & Review in Biology*, 96–106. <https://doi.org/10.9734/arrb/2021/v36i230345>
- Amalia, U. (2012). Pendugaan umur simpan produk nugget ikan dengan merk dagang fish nugget "So Lite." *Jurnal Saintek Perikanan*, 8(1), 27–31.
- Astawan, M. (2007). Ikan air tawar kaya protein dan vitamin. Swadaya.
- Bappenas. (2019). Roadmap of SDGs Indonesia: A highlight. BAPPENAS.
- Canti, M., Kurniady, F., Hutagalung, R. A., & Prasetya, W. (2023). Nutritional, physical, and sensory properties of fish crackers produced from the head of catfish (*Clarias gariepinus*). *Food Research*, 7(Supplementary 1), 51–63. [https://doi.org/10.26656/fr.2017.7\(S1\).17](https://doi.org/10.26656/fr.2017.7(S1).17)
- Fauzi, A. (2019). Fish processing innovation based on food security product variations for bay fishermen, Labuan District, Pandeglang Regency, Banten Province. *Journal of Indonesian Community Empowerment*, 1(2), 401–411. <https://journal.prasetiyamulya.ac.id/journal/index.php/JPM/article/view/307>
- Fona, Z., Kurniasih, E., & Raudah, R. (2017). Pengembangan unit usaha nugget sehat di Politeknik Negeri Lhokseumawe. *Agrokreatif, Jurnal Ilmiah Pengabdian Kepada Masyarakat*, 3(2), 115–122.
- Gozali, T., Sutrisno, A. D. & Ernida, D. (2001). Pengaruh waktu pengukusan dan perbandingan jamur tiram terhadap karakteristik nugget jamur tiram putih (*Pleurotus florida*). *Makalah Seminar Nasional Teknologi Pangan Semarang. 9-10 Oktober 2001. Buku A. Perhimpunan Teknologi Pangan dan Rekayasa*. Semarang.
- Haris, H., & Nafsiyah, I. (2019). Formulation of a mixture of fish waste and trash fish on the protein content and digestibility of fish meal. *BIAM Magazine*, 15(2), 82–93. <https://doi.org/10.29360/mb.v15i2.5606>
- Haryanti, H., Iskandar, I., Rizal, A., Aliah, R. S., & Sachoemar, S. I. (2023). Urban farming aquaculture as an alternative business for food and economic security during the COVID-19 pandemic – Case study in the sub-urban area of Jakarta, Indonesia. *Polish Journal of Environmental Studies*, 32(5), 4023–4036. <https://doi.org/10.15244/pjoes/166362>



- Hendri, H., Chalid, I., Meliza, R., Ameliany, N., & Yunanda, R. (2023). Development of catfish cultivation fishermen to support the economy of coastal communities. *Malikussaleh Governance and Policy Reviews*, 1(1), Article 1. <https://ojs.unimal.ac.id/mgpr/article/view/33-38>
- Kementerian Kelautan dan Perikanan (KKP). (2019).
- Kementerian Kelautan dan Perikanan (KKP). (2020).
- Kementerian Kelautan dan Perikanan (KKP). (2018). Industrialisasi dalam menekan pengangguran di Gresik. <https://jatimnet.com/industrialisasi-dalam-menekan-pengangguran-di-gresik>
- Mairizal, M. (2010). Pengaruh penggantian tepung ikan dengan tepung silase limbah udang dalam ransum ayam pedaging terhadap retensi bahan kering dan protein kasar. *Jurnal Peternakan*, 7(1), 35–40.
- Martuti, N., Rosidah, K. T., & Saputro, D. D. (2014). Oven panggang sebagai solusi pengolahan ikan higienis dan ramah lingkungan. *Rekayasa*, 12(2), 1–9.
- Mobdy, H. E. A., Abdel-Aal, H. A., Souzan, S. L., & Nassar, A. G. (2021). Nutritional value of african catfish (*Clarias gariepinus*) meat. *Asian Journal of Applied Chemistry Research*, 31–39. <https://doi.org/10.9734/ajacr/2021/v8i230190>
- Niko, N. (2020). Persoalan kerawanan pangan pada masyarakat miskin di wilayah perbatasan Entikong (Indonesia-Malaysia Kalimantan Barat. *Jurnal Surya Masyarakat*, 2(2), 94–104.
- Otolowo, D. T., Olapade, A. A., & Makanjuola, S. A. (2018). Predicting the nutritional and rancidity properties of dehydrated catfish (*Clarias gariepinus*) using response surface methodology. *Preventive Nutrition and Food Science*, 23(4), 347–355. <https://doi.org/10.3746/pnf.2018.23.4.347>
- Purcell, S. W., Crona, B. I., Lalavanua, W., & Eriksson, H. (2017). Distribution of economic returns in small-scale fisheries for international markets: A value-chain analysis. *Marine Policy*, 86, 9–16. <https://doi.org/10.1016/j.marpol.2017.09.001>
- Radar News. (2020). *Pemdes Balongpanggang beri bantuan dana desa kepada warga terdampak pandemi*. Radar News.
- Rahmawati, F. (2012). Aneka ragam pengolahan ikan: Pemberdayaan sosial untuk kegiatan pendidikan alternatif dalam pengolahan potensi lokal. *Kerjasama Kementerian Pembangunan Daerah Tertinggal Dengan Fakultas Pertanian UGM Yogyakarta*.
- Sari, P. D. W., Nindarwi, D. D., Aji, L. A. K., & Dewantara, M. (2023). Catfish culture techniques with aquaponic systems in the elderly group as an effort to increase productivity and economic independence of the community in Pakal District, Surabaya. *Kontribusi : Research Dissemination for Community Development*, 6(1), Article 1. <https://doi.org/10.30587/kontribusi.v6i1.4932>
- Sofyan, J. S. dan Karim, M. (2014). (2014). Perbandingan nutrisi otak-otak berbahan baku ikan tenggiri, ikan bandeng dan ikan gabus. *Jurnal Balik Diwa*, 5(2), 58–63.
- Sunarma, A. (2004). *Peningkatan produktifitas usaha Sembilang Sangkuriang*. Departemen Kelautan dan Perikanan.
- Ubadillah, A & Hersoelistyorini, W. (2010). Kadar protein dan sifat organoleptik nugget rajungan dengan substitusi ikan sembilang (*Clarias gariepinus*). *Jurnal Pangan Dan Gizi*, 1(2).
- UD. Sumber Rejeki Lestari. (2020). *Production results of catfish*. UD. Sumber Rejeki Lestari.
- Winarno, B. (2014). *Dinamika Isu-Isu Global Kontemporer*. CAPS.




# SOSTAC framework analysis for enhancing digital marketing in Yogyakarta's Art Music Today

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ARTICLE INFO	ABSTRACT
<p><b>Article history</b>            Received: 2023-12-01            Revised: 2024-01-26            Accepted: 2024-01-30            Published: 2024-02-01</p> <p><b>Keywords</b>            5S Framework            Marketing Mix 7P            SOSTAC Analysis            STP Marketing            SWOT Analysis</p>	<p><i>This research utilizes a qualitative descriptive methodology, employing the SOSTAC model to analyze Art Music Today (AMT). The study follows six structured steps, starting with a SWOT-based Situation Analysis highlighting AMT's strengths as a unique Yogyakarta entity. Strategic objectives are set using the 5s Framework, focusing on digital marketing elements like online sales optimization and user experience. The Strategy phase emphasizes STP marketing, presenting AMT as a tailored music information center. Tactics, guided by the 7P framework, include product diversification and pricing strategies, contributing to an enhanced user experience. An 18-month action plan, depicted in a Gantt chart, guides implementation from content creation to streamlined processes. The Control phase involves monitoring with Google Analytics and social media evaluation. Through leveraging strengths and addressing weaknesses, AMT positions itself for growth in the digital landscape, using the SOSTAC model as a robust framework for digital marketing excellence. As a suggestion, through a proactive approach to leveraging inherent strengths and addressing weaknesses, AMT aims for significant growth in the dynamic digital environment. Aligning its digital marketing efforts with the SOSTAC model, which covers Situational Analysis, Objectives, Strategy, Tactics, Action, and Control, ensures a comprehensive understanding of current market dynamics. This strategic alignment establishes the foundation for a well-defined and actionable digital marketing strategy.</i></p>
<p><b>Kata kunci</b>            Analisis SOSTAC            Analisis SWOT            Bauran Pemasaran 7P            Kerangka Kerja 5S            Pemasaran STP</p>	<p><b>Analisis kerangka SOSTAC untuk meningkatkan pemasaran digital di Art Music Today Yogyakarta.</b>            Penelitian ini menggunakan metodologi deskriptif kualitatif, dengan menerapkan model SOSTAC untuk menganalisis Art Music Today (AMT). Studi ini mengikuti enam langkah terstruktur, dimulai dengan Analisis Situasi berbasis SWOT yang menyoroti kekuatan AMT sebagai entitas unik di Yogyakarta. Tujuan strategis ditetapkan menggunakan Kerangka 5s, berfokus pada elemen pemasaran digital seperti optimalisasi penjualan online dan pengalaman pengguna. Fase Strategi menekankan pemasaran STP, mempresentasikan AMT sebagai pusat informasi musik yang disesuaikan. Taktik, dipandu oleh kerangka 7P, mencakup diversifikasi produk dan strategi penetapan harga, berkontribusi pada pengalaman pengguna yang ditingkatkan. Rencana tindakan selama 18 bulan, digambarkan dalam diagram Gantt, memandu implementasi mulai dari pembuatan konten hingga proses yang disederhanakan. Fase Kontrol melibatkan pemantauan dengan Google Analytics dan evaluasi media sosial. Dengan memanfaatkan kekuatan dan menanggapi kelemahan, AMT menempatkan dirinya untuk pertumbuhan dalam lanskap digital, menggunakan model SOSTAC sebagai kerangka yang kokoh untuk keunggulan pemasaran digital. Sebagai saran, melalui pendekatan proaktif untuk memanfaatkan kekuatan yang melekat dan menanggapi kelemahan, AMT bertujuan untuk pertumbuhan signifikan dalam lingkungan digital yang dinamis. Penyelarasan upaya pemasaran digital dengan model SOSTAC, yang mencakup Analisis Situasi, Tujuan, Strategi, Taktik, Aksi, dan Kontrol, memastikan pemahaman menyeluruh tentang dinamika pasar saat ini. Keselarasan strategis ini membentuk dasar untuk strategi pemasaran digital yang terdefinisi dengan baik dan dapat diimplementasikan.</p> <p style="text-align: right;">Copyright © 2024, Anggraeni et al.            This is an open access article under the <a href="https://creativecommons.org/licenses/by-sa/4.0/">CC-BY-SA</a> license</p> <div style="text-align: right;">  </div>

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## INTRODUCTION

In the backdrop of the transformative power of music highlighted by scholars, the electrifying Coldplay concert in Jakarta on November 15, 2023 (Oktaviana, 2023), exemplifies the thriving and dynamic landscape of the Music Events market in Indonesia. The extraordinary phenomenon of ticket sales, selling out within a mere three hours despite the relatively high price range, as reported by (Dufana, 2023) and confirmed on the official ticket sales page (PK Entertainment, 2023), underscores the immense popularity and demand for live music experiences in the country. This local phenomenon aligns with broader trends indicated by data from (Statista, 2023), forecasting substantial growth in the Indonesian Music Events market. With a projected revenue of US\$92.82 million in 2023 and an estimated annual growth rate of 4.81%, the market is anticipated to reach a volume of US\$112.00 million by 2027. The expected expansion in the user base, with projections indicating a reach of 6.0 million users by 2027 and a user penetration rate rising from 2.0% in 2023 to 2.1% by 2027, further emphasizes the promising outlook for both revenue and user engagement in the Music Events market in Indonesia.

The universal language of music, often defined as a transcendent mode of communication, is embraced by all, transcending differences and providing a means for self-expression, speaking out, and reshaping perceptions (Stanley, 2020). As articulated by Mehr et al. (2019), Bowman (2021), Maróti et al. (2019), Clayton et al. (2020) and (Szyzkowska (2022), it offers a profound conduit for individuals to navigate and regulate their feelings. Its significance lies in its profound ability to articulate emotions (Bowman, 2021) and elicit a diverse range of emotions (Er et al., 2021), offering a conduit for individuals to navigate and regulate their feelings (Alvarez-cueva, 2022). This extraordinary communicative power is evident in its ability to express complex ideas and sentiments, often surpassing the limitations of verbal language (Georgiou, 2021). Music becomes a shared experience that resonates with people across diverse backgrounds, fostering connections and shared understanding (Nijs & Nicolaou, 2021). Its impact extends beyond mere entertainment, playing a pivotal role in shaping identities, fostering community, and reflecting societal values (Hartnett et al., 2023). This universal resonance positions music as a dynamic and influential force in the human experience, capable of transcending boundaries and fostering a collective sense of connection and understanding (Gibson, 2020).

The research gap for this study was identified through a literature review using the "Publish or Perish" tool and querying the Scopus database with the keyword 'music digital marketing.' Out of 91 papers found from 2019 to 2023, 11 articles were carefully selected by the researchers. This approach differs from previous studies (Altynov, 2022; Azzellini et al., 2022; Bengtsson & Edlom, 2021; Bossey, 2019; Cha et al., 2020; De Beukelaer & Eisenberg, 2020; Edlom, 2022; Efurhievwe & Okpeki, 2023; Krismayer et al., 2019; Strand & Robertson, 2020; Venkatesan et al., 2020) as it specifically analyzes the use of music digital marketing in Yogyakarta's Art Music Today. Unlike earlier research covering diverse topics, this study focuses on a localized context, utilizing a qualitative descriptive method with the SOSTAC analysis framework. This unique approach sets it apart, providing insights into the digital marketing practices of a specific music entity in a specific geographical area. The research relies on Harzing's Publish or Perish and the Scopus database spanning 2019-2023 for a comprehensive analysis of scholarly output. The use of Scopus, known for its high-quality academic research coverage, ensures a thorough examination of academic contributions across disciplines. This research contributes novelty by offering a unique analysis of music digital marketing through the application of the SOSTAC framework. In contrast to existing studies exploring various aspects, such as predicting user traits, sensory characteristics, accessibility challenges at music festivals, the role of mobile tech firms in music distribution, and the evolving work of communication practitioners, this research stands out for its exclusive focus on evaluating digital marketing strategies within the SOSTAC framework. This distinctive approach adds a novel perspective to the broader landscape of research in the field.

"Art Music Today" stands as a dynamic and influential network, spearheading Yogyakarta's musical landscape in Indonesia. This comprehensive platform, as detailed by (Gitomartoyo, 2023), boasts a multifaceted agenda focused on music performances, discussions, workshops, publications, documentation, and the dissemination of information. The inclusivity of this network actively engages composers, musicologists, instrumentalists, and the public, creating an environment where creative ideas can thrive and be collectively cultivated. However, it's worth noting that there has been a recent challenge. The traffic to the website of "Art Music Today" has experienced a decline from September 2023 to October 2023. The number of visitors dropped from 2000 to 965 during this period. Despite this setback, the network remains committed to its mission of fortifying the presence of contemporary music in Indonesia. "Art Music Today" continues to serve as a vital space for the diverse facets of the music community to collaboratively contribute to its ongoing evolution. Accessible to all those with an interest in the latest developments in art music, the network acts as a catalyst for innovation, connectivity, and the continual enrichment of the contemporary musical tapestry in Yogyakarta and beyond. Initially adapting to the digital era, "Art Music Today" recognized the significance of enhanced digital promotions to broaden audience reach and increase viewership. However, the current analysis reveals that the network lacks a strong online presence on key platforms such as its website, Instagram, or Facebook.

This research aims to address the recent decline in website traffic for "Art Music Today," a prominent network in Yogyakarta's music scene. Despite serving as a comprehensive platform for music-related activities, the network has experienced a decrease in visitors. The primary focus of the research is to enhance the online presence of "Art Music Today" across various platforms, including its website, Instagram, and Facebook. As part of a broader exploration of the

role of culture and cultural policy in advancing the Sustainable Development Goals (SDGs), this article specifically delves into cultural practices associated with music and sound. In Indonesia, a local project aimed at documenting and sustaining music is yielding positive outcomes for health and well-being (SDG3), equality (SDG10), and community sustainability (SDG11) (Grant et al., 2022). The objective is to revitalize the network's reach, ensuring accessibility, innovation, and connectivity within the contemporary musical landscape in Yogyakarta and beyond.

## METHOD

This research employs a meticulous qualitative descriptive methodology through the SOSTAC model in six steps. The researchers chose to employ the SOSTAC analysis, a comprehensive strategic planning framework encompassing six key stages: Situation Analysis, where the current internal and external factors are assessed; Objectives, where specific and measurable goals are established; Strategy, which outlines the overall approach to achieving the objectives; Tactics, where specific actions are determined to implement the chosen strategy; Action, involving the practical implementation of plans and allocation of resources; and Control, which focuses on monitoring, measuring, and adjusting the plan to ensure it remains aligned with organizational goals, as mentioned at Figure 1. This decision was guided by the framework's structured and systematic approach, acknowledged by scholars such as (Jupriyatmoko et al., 2023; Putera & Heikal, 2021; Rifai et al., 2021; Sahartian et al., 2022; Sulistyowati & Husda, 2023b, 2023a; Syahrul et al., 2022).



**Fig. 1.** SOSTAC Analysis  
Source: Briray (2020)

### Situation Analysis (S)

In this phase, researchers employ a qualitative SWOT-based analysis of Art Music Today (AMT) through in-depth interviews, content analysis, and surveys. Strengths, weaknesses, opportunities, and threats are identified, employing the SWOT framework as a strategic planning tool. The analysis aims to unveil competitive advantages and challenges, informing strategies that capitalize on strengths, address weaknesses, exploit opportunities, and mitigate threats (Armstrong et al., 2019; Chaffey & Ellis-Chadwick, 2022; Kotler et al., 2023).

### Objectives (O)

Utilizing the 5s Framework, researchers set strategic digital marketing objectives for AMT, ensuring specificity, measurability, and alignment with overall organizational goals. The 5S framework, introduced by PR Smith, comprehensively addresses digital marketing plans, encompassing selling, speaking, serving, saving, and sizzling. Each 'S' focuses on a different aspect, from optimizing sales channels to creating digital value propositions and exclusive offers (Chaffey & Ellis-Chadwick, 2022; Irwanto et al., 2021; Pham, 2020; Tcivina, 2020).

### Strategy (S)

The Strategy phase involves applying STP marketing through qualitative research methods such as focus groups and in-depth interviews. This data informs the strategic positioning of AMT within the digital music landscape. STP marketing emphasizes segmentation, targeting, and positioning to effectively engage specific customer segments (George, 2021).

### Tactics (T)

Researchers employ the 7P framework by conducting market research and user testing to gather feedback on product diversification, membership initiatives, sponsorship programs, pricing strategies, and online presence optimization. The 7Ps marketing mix extends traditional elements to include People, Processes, and Physical Evidence, refining tactics based on iterative feedback (Chaffey & Ellis-Chadwick, 2022; Kotler et al., 2023).

### Actions (A)

The Actions phase involves crafting an 18-month action plan for dynamic goal implementation through collaborative workshops with key stakeholders and marketing experts. The plan is visualized using project management tools, ensuring a phased and strategic approach to implementation.

### Control (C)

In the Control phase, researchers implement a robust monitoring system, tracking Google Analytics and social media metrics regularly. Surveys and interviews are conducted to gather user feedback, allowing for real-time adjustments to ensure alignment with organizational goals. Continuous monitoring is crucial for evaluating the effectiveness of implemented strategies.

This structured approach establishes a holistic framework for AMT's digital marketing excellence, illustrated in Figure 2.



Figure 2. The SOSTAC methodology of Art Music Today

## RESULTS AND DISCUSSION

### Situation Analysis

Art Music Today, assessed using a SWOT framework, excels in its diverse musical content and extensive educational programs, as highlighted by (Gitomartoyo, 2023). Unique strengths include being the sole DIY entity engaged in both music and publishing, regularly updated knowledge assets, and well-equipped studios. Noteworthy weaknesses encompass funding constraints, non-representative facilities, and a need for a more strategic vision. Opportunities lie in the specific lack of music publications in Indonesia and the potential for internet-driven engagement. Strategic responses involve knowledge rebranding, in-house events, network expansion, and addressing new players through content creation. To mitigate the threat of similar creative players, strategies include testimonial-based content and increased online engagement. Adjusting the management system for heightened professionalism is recommended to address both internal weaknesses and external threats.

### Objectives

In its objective-setting phase, Art Music Today strategically defines digital marketing goals using the 5s framework: sell (optimizing online sales), serve (prioritizing user experience), speak (establishing a strong online presence), save (implementing cost-saving measures), and sizzle (creating excitement and distinctiveness). These objectives cover aspects of refined e-commerce platforms, targeted advertising, enhanced website usability, efficient online customer support, diverse digital communication channels, cost optimization, and innovative campaigns to ensure a well-rounded and comprehensive digital marketing strategy for Art Music Today.

### Strategy

Art Music Today can enhance its impact through the strategic use of STP (Segmentation, Targeting, Positioning) marketing. In the segmentation phase, specific audience clusters, including students and cultural enthusiasts, are identified based on demographics and psychographics related to music and cultural interests. Targeting prioritizes engagement with students and educators, aligning with the organization's mission. Tailored communication strategies



highlight Art Music Today as a holistic music information center. In the positioning phase, the organization emphasizes its commitment to community well-being and intelligence, creating a unique brand image. By systematically implementing STP marketing, Art Music Today can establish deep connections with its audience, contributing significantly to cultural enrichment and education.

### Tactics

Art Music Today can strategically enhance its impact using the 7P framework. In product, diversification into various musical genres and expanding digital content, including online courses, is recommended. For pricing, the introduction of tiered memberships and sponsorship packages can incentivize engagement and secure financial support. Place considerations involve optimizing online presence for seamless interaction and ensuring mobile accessibility. Promotion efforts should include targeted social media campaigns and collaborations with influencers. People-centric strategies encompass staff training, volunteer programs, and fostering community involvement. Streamlining registration processes and incorporating feedback mechanisms are crucial for operational improvement. Lastly, the creation of branded merchandise and visually appealing event signage serves as tangible physical evidence of the organization's cultural presence.

### Action

To significantly boost its impact, Art Music Today (AMT) plans to implement a meticulous 18-month action plan, organized through a Gantt chart (Sulistyowati & Husda, 2023b) Within the first two months, AMT will diversify its offerings by identifying gaps in its current musical products and introducing new genres, workshops, and educational programs. Following this, the next five months will focus on establishing a dedicated digital content creation team, investing in necessary equipment, and launching high-quality digital content. Subsequent steps include designing tiered membership programs, crafting attractive sponsorship packages, optimizing the online presence, conducting social media campaigns and collaborations, implementing staff training and volunteer programs, and streamlining registration processes. The final eight months involve tasks such as creating branded merchandise and culminate in an overall review and adjustments to ensure sustained impact and success. The Gantt chart will serve as a dynamic visual guide, ensuring systematic coordination of these strategic initiatives.

### Control

#### Website

In the control phase, the AMT website needs to be monitored and analyzed using Google Analytics. Google Analytics plays a pivotal role in this control process by providing insights into website performance, user behavior, and engagement metrics. This data-driven approach enables AMT to promptly respond to emerging trends, optimize user experience, and refine their digital strategies for continued growth and potential international expansion.

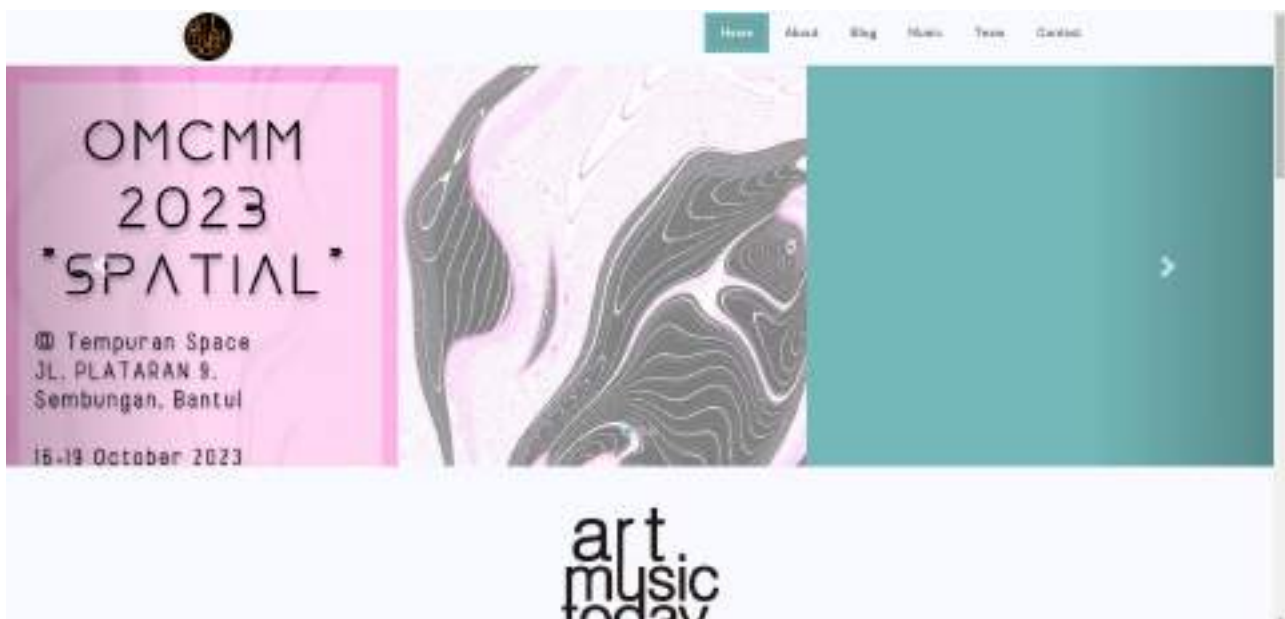


Figure 3. Website of Art Music Today  
Source: <https://artmusictoday.org/home/>

**Instagram**

Art Music Today's Instagram account, @artmusictoday, depicted in Figure 1, is notable for its active and engaging presence on the platform. With a total of 350 posts, the account exemplifies a consistent commitment to content creation. The substantial following of 1,583 followers indicates a noteworthy level of interest and engagement within the Instagram community.

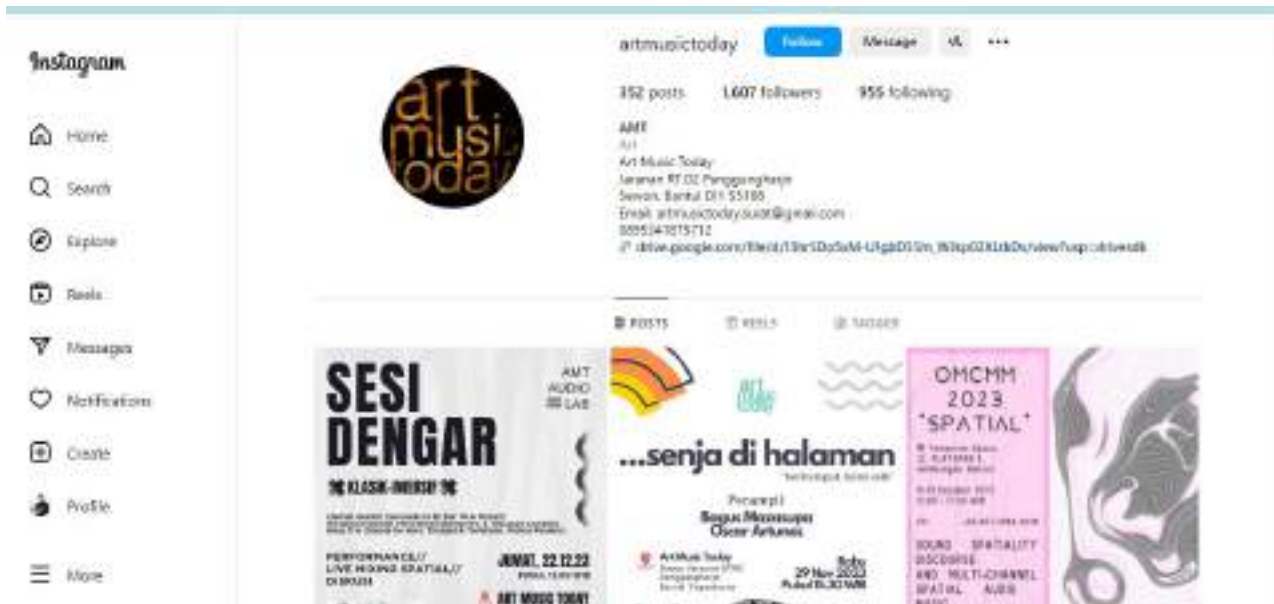


Figure 4. Instagram profile of Art Music Today (@artmusictoday)  
 Source: <https://www.instagram.com/artmusictoday/> (Nov 14, 2023)

Art Music Today's (AMT) Instagram strategy effectively engages a diverse audience interested in art and music. The inclusion of engagement metrics reflects a meticulous effort to understand audience interaction. While post titles reveal a balanced strategy, the age of content suggests room for improvement in online presence through more frequent content production. Intervals ranging from 80 to 158 weeks indicate an opportunity to enhance sustaining audience attention with a consistent posting schedule. Utilizing the Instagram Professional Dashboard could further optimize AMT's Instagram performance, providing valuable tools for a comprehensive social media strategy.

Table 1. Five Newest Content at AMT Instagram Account

Titles	Age of Content (Weeks)	Viewers	Likes
LiRamadhan 2022 telah usai	80	263	14
Latency Music Concerts SERIES 2	112	111	15
[SEIZURE WARNING!!!]	112	60	4
LATENCY MUSIC CONCERT	126	180	25
Sampai tanggal 7 November setiap hari di YouTube: October Meeting.	158	266	32

Source: <https://www.instagram.com/artmusictoday/> (Nov 14, 2023)

**Facebook**

Figure 5 illustrates the current state of Art Music Today's (AMT) Facebook page, indicating a moderate level of engagement with 1400 followers. To amplify its impact, AMT should adopt a strategic approach. Firstly, maintaining a consistent posting schedule is crucial for audience retention. Secondly, active engagement with followers, including responding to comments and messages, can foster a sense of community. Exploring additional features on Facebook, such as live videos and stories, can bring a dynamic element to AMT's online presence. Diversifying content types is key—mixing updates with behind-the-scenes glimpses and interactive posts can capture varied audience interests. To strengthen its online presence further, AMT can leverage the Facebook Professional Dashboard tool. This tool provides valuable analytics and insights, enabling a data-driven approach to refining strategies. By understanding audience behavior and preferences, AMT can optimize content for improved engagement.

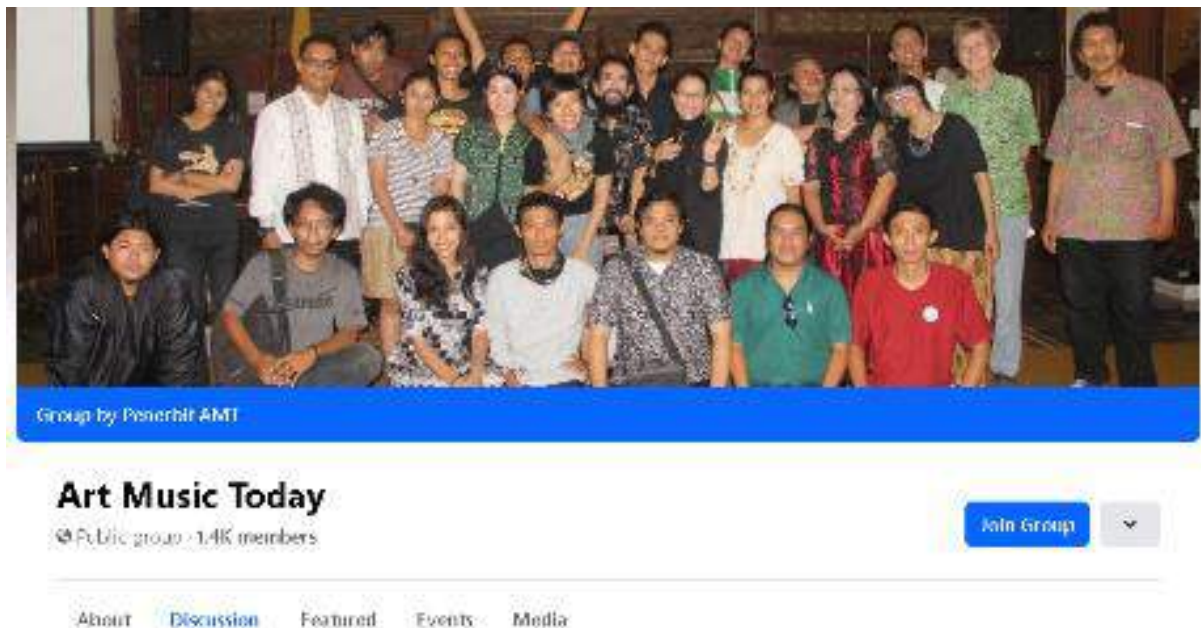


Figure 5. Facebook Group of Art Music Today  
 Source : <https://www.facebook.com/groups/38517916184/>

"Art Music Today" is a dynamic force in Yogyakarta's music scene, offering a diverse agenda of performances, discussions, workshops, and publications. Despite a recent dip in website traffic, from 2000 to 965 visitors between September and October 2023, the network remains committed to fortifying contemporary music in Indonesia. Serving as a vital space for collaborative contributions, it acts as a catalyst for innovation and connectivity in the music community. The network, initially adapting to the digital era, now faces the challenge of improving its online presence on platforms like its website, Instagram, or Facebook. Identifying these areas for enhancement reflects a dedication to remaining dynamic in the digital age. The SOSTAC framework, encompassing Situation, Objectives, Strategy, Tactics, Action, and Control, provides a systematic guide for analyzing and strategizing "Art Music Today's" trajectory, enhancing its effectiveness and aligning efforts with organizational goals (Table 2).

Table 2. SOSTAC Analysis of AMT

SOSTAC Element	Application for Art Music Today
Situation	- Strengths: Diverse musical content, educational programs, DIY entity, well-equipped studios. - Weaknesses: Funding constraints, non-representative facilities, lack of strategic vision. - Opportunities: Lack of music publications in Indonesia, potential for internet-driven engagement. - Threats: Emergence of similar creative players.
Objectives	- Sell: Optimize online sales through refined e-commerce platforms. - Serve: Prioritize user experience for online customers. - Speak: Establish a strong online presence. - Save: Implement cost-saving measures. - Sizzle: Create excitement and distinctiveness through innovative campaigns.
Strategy	- Utilize STP (Segmentation, Targeting, Positioning) marketing. - Segmentation: Identify specific audience clusters (students, cultural enthusiasts). - Targeting: Prioritize engagement with students and educators. - Positioning: Emphasize commitment to community well-being and intelligence.
Tactics	- Product: Diversify into various musical genres, expand digital content. - Pricing: Introduce tiered memberships, sponsorship packages. - Place: Optimize online presence, ensure mobile accessibility. - Promotion: Targeted social media campaigns, collaborations with influencers. - People: Staff training, volunteer programs, foster community involvement. - Process: Streamline registration processes, incorporate feedback mechanisms. - Physical evidence: Create branded merchandise, visually appealing event signage.
Action	- Implement an 18-month action plan using a Gantt chart. - Diversify offerings, establish digital content creation team, launch high-quality digital content. - Design tiered membership programs, craft sponsorship packages, optimize online presence, conduct social media campaigns, implement staff training, streamline registration processes, create branded merchandise. - Finalize with an overall review and adjustments.
Control	- Monitor the website using Google Analytics for insights into performance, user behavior, and engagement metrics. - Utilize Instagram Professional Dashboard for social media strategy optimization. - Leverage the Facebook Professional Dashboard for analytics and insights.

The SOSTAC model, as delineated by Chaffey & Ellis-Chadwick (2022), plays a crucial role in augmenting the digital marketing strategy of Art Music Today (AMT) by providing a systematic approach across its vital components. The

implementation of a comprehensive Situation Analysis, as proposed by Jatmiko et al. (2022), empowers AMT to leverage its strengths, address weaknesses, and capitalize on opportunities within the music and cultural landscape. Clear digital marketing objectives, molded by the 5S framework and prioritized for user experience and online presence (Adeola et al., 2020), are firmly established. The Strategy phase integrates the influential STP marketing model, as emphasized by Sihotang & Hudrasyah (2023), aligning with AMT's mission and establishing meaningful connections with specific audience clusters. Tactical implementation, guided by the 7Ps framework, ensures a comprehensive marketing mix, covering product diversification and innovative campaigns (Denga et al., 2022). The subsequent Action phase unfolds a plan, advocating a dynamic and coordinated approach, while the Control phase employs tools such as Google Analytics (Gupta et al., 2020) and social media analytics (Wu et al., 2023) for data-driven optimization and refinement of digital strategies (Naprawski, 2023).

The strategic integration of the SOSTAC model into Art Music Today's (AMT) digital marketing strategy underscores a harmonious blend of systematic planning and iterative methodologies, fostering sustained and collaborative efforts. This alignment with the structured framework of SOSTAC, accentuating phased planning and consistent challenge resolution, reflects AMT's unwavering commitment to continuous growth. Supported by the positive impact highlighted by various researchers, the implementation of SOSTAC in AMT's digital marketing strategy stands as a testament to its effectiveness (Arsyadi et al., 2023). This strategic alignment extends to the collaborative implementation of SOSTAC at the organizational level, promising enhancements to AMT's digital presence and increased user engagement (Irwanto et al., 2021). The overarching objective is to revitalize AMT's reach, ensuring accessibility, innovation, and connectivity within the contemporary musical landscape in Yogyakarta and beyond. Simultaneously, the research underscores the pivotal role of digital presence, echoing Neirotti & Raguseo's (2021) assertion that a robust online presence enhances organizational visibility. In the control phase, vigilant monitoring of AMT's website through Google Analytics provides actionable insights for adaptive strategies (Gupta et al., 2020), fostering sustained growth and potential international expansion. The analysis of AMT's Instagram strategy further emphasizes effective engagement with a diverse audience, accompanied by recommendations for performance optimization through the Instagram Professional Dashboard (Palapah, 2020). This holistic approach, rooted in systematic planning and iterative refinement, positions AMT for a dynamic and impactful journey in the ever-evolving realm of contemporary music.

## CONCLUSION

Art Music Today (AMT) stands at the precipice of a transformative journey towards growth and cultural enrichment, anchored in the profound synergy of diverse musical content, educational initiatives, and a robust digital presence. The canvas of opportunity unfolds as AMT deftly leverages its identified strengths from the SWOT analysis, artfully aligning objectives with the 5s framework, adopting STP marketing, and applying the 7P framework to weave an impactful narrative across various dimensions. The strokes of strategy come to life in the 18-month action plan, illustrated with a Gantt chart, serving as a meticulous guide for the orchestration of diversification and continuous improvement. Through vigilant monitoring via Google Analytics and the harmonious optimization of social media engagement, AMT positions itself as a dynamic force for sustained growth in the evolving realm of contemporary music. To enrich its digital tapestry further, suggestions include refining the website, engaging actively on social media, seamlessly incorporating multimedia, and fostering collaborations that resonate with the artistry inherent in AMT's mission. For users, the masterpiece of engagement unfolds with interactive features, personalized profiles, artist collaborations, a user-friendly interface, and a collective symphony of community participation. Future research opportunities, akin to the exploration of digital marketing strategies, understanding the nuanced palette of user preferences, evaluating the resonance of promotional campaigns, embracing emerging technologies, and conducting harmonious comparative studies within the niche, promise to sculpt the continued success of AMT's artistic odyssey. In the dynamic landscape of contemporary music, this comprehensive approach, rooted in the essence of art, ensures AMT's enduring relevance and continuous evolution as a beacon in the ever-shifting realm of artistic expression.

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## REFERENCES

- Adeola, O., Hinson, R. E., & Evans, O. (2020). Social media in marketing communications: a synthesis of successful strategies for the digital generation. In *Digital Transformation in Business and Society* (pp. 61–81). Springer International Publishing. [https://doi.org/10.1007/978-3-030-08277-2\\_4](https://doi.org/10.1007/978-3-030-08277-2_4)

- Altynov, A. I. (2022). Digital transformation of music aggregation and distribution companies: The case of Russia. *Business Informatics*, 16(1), 56–71. <https://doi.org/10.17323/2587-814X.2022.1.56.71>
- Alvarez-cueva, P. (2022). Music to face the lockdown: An analysis of Covid-19 music narratives on individual and social well-being. *Social Inclusion*, 10(2), 6–18. <https://doi.org/10.17645/SI.V10I2.4894>
- Armstrong, G., Kotler, P. T., Trifts, V., & Buchwitz, L. A. (2019). *Marketing: An introduction* (4th ed.). Pearson. [https://www.pearson.com/nl/en\\_NL/higher-education/subject-catalogue/marketing/armstrong-marketing-an-introduction-4e.html](https://www.pearson.com/nl/en_NL/higher-education/subject-catalogue/marketing/armstrong-marketing-an-introduction-4e.html)
- Arsyadi, M. G. R., Wulandari, S., & Alam, P. F. (2023). Improvement of digital marketing strategy Kickskemon cleaning shoe service with SOSTAC method. *E-Proceeding of Engineering*, 10(2), 928–933. <https://openlibrarypublications.telkomuniversity.ac.id/index.php/engineering/article/view/19757>
- Azzellini, D., Greer, I., & Umney, C. (2022). Why isn't there an Uber for live music? The digitalisation of intermediaries and the limits of the platform economy. *New Technology, Work and Employment*, 37(1), 1–23. <https://doi.org/10.1111/ntwe.12213>
- Bengtsson, L. R., & Edlom, J. (2021). Mapping transmedia marketing in the music industry: A methodology. *Media and Communication*, 9(3), 164–174. <https://doi.org/10.17645/mac.v9i3.4064>
- Bossey, A. (2019). Accessibility all areas? UK live music industry perceptions of current practice and Information and Communication Technology improvements to accessibility for music festival attendees who are deaf or disabled. *International Journal of Event and Festival Management*, 11(1), 6–25. <https://www.emerald.com/insight/content/doi/10.1108/IJEFM-03-2019-0022/full/html>
- Bowman, W. (2021). Sound, sociality, and music: Part one. *Visions of Research in Music Education*, 16(27), 1–11. <https://digitalcommons.lib.uconn.edu/cgi/viewcontent.cgi?article=1783&context=vrm>
- Briray. (2020, July 9). *RevRoad + The SOSTAC Method*. <https://www.Revroad.Com/2020/07/09/Revroad-the-Sostac-Method/>. <https://www.revroad.com/2020/07/09/revroad-the-sostac-method/>
- Chaffey, D., & Ellis-Chadwick, F. (2022). *Digital marketing* (8th ed.). Pearson. <https://www.pearson.com/se/Nordics-Higher-Education/subject-catalogue/marketing/Chaffey-Digital-Marketing-8e.html>
- Cha, K. C., Suh, M., Kwon, G., Yang, S., & Lee, E. J. (2020). Young consumers' brain responses to pop music on YouTube. *Asia Pacific Journal of Marketing and Logistics*, 32(5), 1132–1148. <https://doi.org/10.1108/APJML-04-2019-0247>
- Chankseliani, M., & McCowan, T. (2021). Higher education and the Sustainable Development Goals. *Higher Education*, 81(1), 1–8. <https://doi.org/10.1007/s10734-020-00652-w>
- Clayton, M., Jakubowski, K., Eerola, T., Keller, P. E., Camurri, A., Volpe, G., & Alborn, P. (2020). Interpersonal entrainment in music performance. *Music Perception*, 38(2), 136–194. <https://doi.org/10.1525/mp.2020.38.2.136>
- De Beukelaer, C., & Eisenberg, A. J. (2020). Mobilising African music: How mobile telecommunications and technology firms are transforming African music sectors. *Journal of African Cultural Studies*, 32(2), 195–211. <https://doi.org/10.1080/13696815.2018.1546569>
- Denga, E. M., Vajjhala, N. R., & Rakshit, S. (2022). *The role of digital marketing in achieving sustainable competitive advantage* (pp. 44–60). IGI Global. <https://doi.org/10.4018/978-1-7998-8169-8.ch003>
- Dufana, A. (2023, May 19). *Coldplay's Comcert tickets in Jakarta are officially sold out*. <https://www.socialexpat.net/coldplays-concert-tickets-in-jakarta-are-officially-sold-out/>
- Edlom, J. (2022). The engagement imperative: experiences of communication practitioners' brand work in the music industry. *Media and Communication*, 2022(1), 66–76. <https://doi.org/10.17645/mac.v9i4.4448>
- Efurhievwe, M. A., & Okpeki, P. I. (2023). Ethical interface of market societies and music production in Nigeria: Towards prosperity and partnership. *Journal of Dharma: Dharmaram Journal of Religions and Philosophies*, 48(2), 249–268. <https://www.researchgate.net/publication/373710730>
- Er, M. B., Çiğ, H., & Aydılek, İ. B. (2021). A new approach to recognition of human emotions using brain signals and music stimuli. *Applied Acoustics*, 175, 107840. <https://doi.org/10.1016/j.apacoust.2020.107840>
- George, R. (2021). Marketing tourism and hospitality: Concepts and cases. In *Marketing Tourism and Hospitality: Concepts and Cases*. Springer International Publishing. <https://doi.org/10.1007/978-3-030-64111-5>
- Georgiou, S. (2021). Surpassing narrative and non-verbal communication: a cross-modal approach to music composition in nation branding. In *Handbook of Research on Future Policies and Strategies for Nation Branding* (pp. 223–232). IGI Global. <https://doi.org/10.4018/978-1-7998-7533-8.ch014>
- Gibson, J. L. (2020). *Making music together: The community musician's role in music-making with participants* [Doctoral thesis, York St John University]. <https://ray.yorks.ac.uk/id/eprint/4995/1/GIBSON%20JOANNE%20FINAL%20THESIS.pdf>
- Gitomartoyo, F. K. A. (2023). Perencanaan strategi ekspansif dalam pengelolaan organisasi nirlaba art music today. *Jurnal Tata Kelola Seni*, 9(1), 11–25. <https://journal.isi.ac.id/index.php/JTKS/article/view/7900/0>
- Grant, C., Bartleet, B.-L., Barclay, L., Lamont, J., & Sur, S. (2022). Integrating music and sound into efforts to advance the sustainable development goals in the Asia-Pacific: case studies from Indonesia, Vanuatu and Australia. *International Journal of Cultural Policy*, 28(4), 499–512. <https://doi.org/10.1080/10286632.2021.1971206>



- Gupta, S., Leszkiewicz, A., Kumar, V., Bijmolt, T., & Potapov, D. (2020). Digital Analytics: Modeling for Insights and New Methods. *Journal of Interactive Marketing*, 51, 26–43. <https://doi.org/10.1016/j.intmar.2020.04.003>
- Hartnett, A. C., Lasslo, S. K., & Hertlein, B. R. (2023). Exploring the influence of diction and language style in children's song lyrics on preschool learning and development. *Jurnal Ilmu Pendidikan Dan Humaniora*, 12(2), 121–132. <https://doi.org/10.35335/jiph.v12i2.36>
- Irwanto, J., Murniati, W., & Fauziyah, A. (2021). Optimization of digital marketing strategy with Implementation of SOSTAC method. *IJEBD (International Journal of Entrepreneurship and Business Development)*, 4(6), 886–892. <https://doi.org/10.29138/ijebd.v4i6.1532>
- Jatmiko, B., Handayani, S. D., Udin, U., Suryandani, E., Kusumawati, R., Laras, T., & Raharti, R. (2022). Key-factor strategy of creative industry in distribution channel: A SWOT analysis method. *International Journal of Sustainable Development and Planning*, 17(6), 1895–1904. <https://doi.org/10.18280/ijstdp.170624>
- Jupriyatmoko, Sulistyowati, T., & Elfi Husda, N. (2023). Optimizing marketing strategies and brand image with SOSTAC: A study of Zettamind studios. *Jurnal Ekonomi*, 12(4), 2437–2444. <http://ejournal.seaninstitute.or.id/index.php/Ekonomi>
- Kotler, P., Armstrong, G., & Balasubramanian, S. (2023). *Global edition principles of marketing nineteenth edition* (19th ed.). Pearson Education Limited. <https://www.pearson.com/en-us/subject-catalog/p/principles-of-marketing/P200000009859?view=educator>
- Krismayer, T., Schedl, M., Knees, P., & Rabiser, R. (2019). Predicting user demographics from music listening information. *Multimedia Tools and Applications*, 78(3), 2897–2920. <https://doi.org/10.1007/s11042-018-5980-y>
- Maróti, E., Barabás, E., Deszpot, G., Farnadi, T., Norbert Nemes, L., Szirányi, B., & Honbolygó, F. (2019). Does moving to the music make you smarter? The relation of sensorimotor entrainment to cognitive, linguistic, musical, and social skills. *Psychology of Music*, 47(5), 663–679. <https://doi.org/10.1177/0305735618778765>
- Mehr, S. A., Singh, M., Knox, D., Ketter, D. M., Pickens-Jones, D., Atwood, S., Lucas, C., Jacoby, N., Egner, A. A., Hopkins, E. J., Howard, R. M., Hartshorne, J. K., Jennings, M. V., Simson, J., Bainbridge, C. M., Pinker, S., O'Donnell, T. J., Krasnow, M. M., & Glowacki, L. (2019). Universality and diversity in human song. *Science*, 366(6468). <https://doi.org/10.1126/science.aax0868>
- Naprawski, T. (2023). The impact of web analytics tools on knowledge management. *Procedia Computer Science*, 225, 3404–3414. <https://doi.org/10.1016/j.procs.2023.10.335>
- Neirotti, P., & Raguseo, E. (2021). Mitigating resource dependence on internet visibility providers: Exploring complementarity effects in the positioning of small hotels on online intermediaries. *Information & Management*, 58(1), 103279. <https://doi.org/10.1016/j.im.2020.103279>
- Nijs, L., & Nicolaou, G. (2021). Flourishing in resonance: Joint resilience building through music and motion. *Frontiers in Psychology*, 12. <https://doi.org/10.3389/fpsyg.2021.666702>
- Oktaviana, M. (2023, May 9). *Coldplay kantong pendapat Rp8 triliun saat konser, terbesar sepanjang sejarah*. <https://economy.okezone.com/read/2023/05/09/320/2810930/coldplay-kantongi-pendapatan-rp8-triliun-saat-konser-terbesar-sepanjang-sejarah>
- Palapah, M. A. O. (2020). Instagram activation as a part of university public relations social media orchestration. *Mediator: Jurnal Komunikasi*, 13(2), 217–232. <https://doi.org/10.29313/mediator.v13i2.6618>
- Pham, H. C. (2020). Factors affecting the market share of retailers: Evidence from vietnam. *Journal of Asian Finance, Economics and Business*, 7(11), 413–419. <https://doi.org/10.13106/jafeb.2020.vol7.no11.413>
- PK Entertainment. (2023, May). *Coldplay music of the speres*. [https://coldplayinjakarta.com/%20\(2023\).%20COLDPLAY%20MUSIC%20of%20the%20SPERES.%20https://coldplayinjakarta.com/](https://coldplayinjakarta.com/%20(2023).%20COLDPLAY%20MUSIC%20of%20the%20SPERES.%20https://coldplayinjakarta.com/)
- Putera, G. A., & Heikal, J. (2021). Business strategy of indah kiat pulp and paper Perawang Mill, Riau, Indonesia using PESTLE, Porter's five forces, and SWOT Analysis under SOSTAC Framework. *International Journal of Scientific Research in Science and Technology*, 8(6), 252–270. <https://doi.org/10.32628/ijrsr218624>
- Rifai, Z., Faqih, H., & Meiliana, D. (2021). Metode SOSTAC UNTUK PENYUSUNAN STRATEGI DIGITAL MARKETING PADA UMKM dalam menghadapi pandemi dan pasca pandemi. *Jurnal Sains Dan Manajemen*, 9(1). <https://ejournal.bsi.ac.id/ejurnal/index.php/evolusi/article/view/9241>
- Sahartian, O., Ayouvi Poerna Wardhanie, & Sri Hariani Eko Wulandari. (2022). Strategi digital marketing instagram menggunakan framework SOSTAC guna meningkatkan omzet consumer goods madu. *JSII (Jurnal Sistem Informasi)*, 9(2), 141–149. <https://doi.org/10.30656/jsii.v9i2.5049>
- Sihotang, H. K. N., & Hudrasyah, H. (2023). Proposed digital marketing strategy using existing customer journey analysis case study: PT SS. *International Journal of Current Science Research and Review*, 06(03). <https://doi.org/10.47191/ijcsrr/V6-i3-07>
- Stanley, D. (2020). *Music education and performance for people with learning disabilities*. [https://media.churchillfellowship.org/documents/Stanley\\_D\\_Report\\_2019\\_Final.pdf](https://media.churchillfellowship.org/documents/Stanley_D_Report_2019_Final.pdf)
- Statista. (2023, November). *Music events - Indonesia*. <https://www.statista.com/outlook/dmo/eservices/event-tickets/music-events/indonesia>

- Strand, A., & Robertson, M. (2020). An attitudinal impacts analysis of social media platforms and brand relationship quality at music festivals. *Event Management*, 24(6), 769–788.  
<https://doi.org/10.3727/152599520X15894679115538>
- Sulistyowati, T., & Husda, N. E. (2023a). Analisis implementasi strategi pemasaran digital dengan pendekatan model SOSTAC di Universitas Putera Batam. *Prosiding Seminar Nasional Ilmu Sosial & Teknologi (SNISTEK) 5 TAHUN 2023*, 15, 45–50. <https://doi.org/https://doi.org/10.33884/psnistek.v5i.8062>
- Sulistyowati, T., & Husda, N. E. (2023b). Optimasi strategi pemasaran digital pada UMKM Uci Garden. *Proceeding National Conference Business, Management, And Accounting (NCBMA)*, 146–157.  
<https://garuda.kemdikbud.go.id/documents/detail/3623312>
- Syahrul, S., Doho, Y. D. B., & Pradina, Y. D. (2022). “Pay-as-you-wish” Program as marketing communication strategy using SOSTAC On Indonesian MSME business. *Journal of Research on Business and Tourism*, 2(1), 40.  
<https://doi.org/10.37535/104002120224>
- Szyszkowska, M. A. (2022). the singing voice’s charms: aesthetic and transformative aspects of singing in literature, art, and philosophy. *Eidos. A Journal for Philosophy of Culture*, 6(2), 26–36.  
<https://doi.org/10.14394/eidos.jpc.2022.0013>
- Tcivina, A. (2020). *social media marketing plan for Hard Rock Cafe Helsinki* [Haaga-Helia University of Applied Sciences].  
<https://www.theseus.fi/bitstream/handle/10024/343002/TcivinaAlisaThesisFinal.pdf?sequence=2>
- Venkatesan, T., Wang, Q. J., & Spence, C. (2020). *Does the typeface on album cover influence expectations and perception of music?* [https://ora.ox.ac.uk/objects/uuid:7beb83c1-86ab-4fe4-b1d4-78297324d8a5/download\\_file?file\\_format=application%2Fpdf&safe\\_filename=PACA%2BAuthor%2BAccepted%2BSubmission.pdf&type\\_of\\_work=Journal+article](https://ora.ox.ac.uk/objects/uuid:7beb83c1-86ab-4fe4-b1d4-78297324d8a5/download_file?file_format=application%2Fpdf&safe_filename=PACA%2BAuthor%2BAccepted%2BSubmission.pdf&type_of_work=Journal+article)
- Wu, Q., Yan, D., & Umair, M. (2023). Assessing the role of competitive intelligence and practices of dynamic capabilities in business accommodation of SMEs. *Economic Analysis and Policy*, 77, 1103–1114.  
<https://doi.org/10.1016/j.eap.2022.11.024>




# Utilization of waste paper as teaching media for volcano eruption simulation in improving student knowledge

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ARTICLE INFO	ABSTRACT
<p><b>Article history</b> Received: 2023-12-16 Revised: 2024-01-28 Accepted: 2024-01-31 Published: 2024-02-02</p> <p><b>Keywords</b> Waste paper Teaching media Volcano</p>	<p>Indonesia has the highest number of active volcanoes in the world due to its geologic location at the confluence of the Eurasian and Australian plates. However, despite this, the knowledge of local communities regarding volcanic eruptions is still very minimal. Therefore, it is important to provide education to the community in this context is the local community. This Community Service Program aims to increase community knowledge related to the process of volcanic eruption by using pulp-based learning media, so that it can become disaster mitigation knowledge. The methods used are observation, coaching or training based on practical simulations, questionnaires and interviews. The subject of this Community Service is the community of Tambun village, Baolan sub-district, Tolitoli district, totaling 21 people in collaboration with students of the elementary school teacher education program in semester III. The results of this program are the increase in community knowledge related to volcanic eruptions and the growth of community awareness related to the use of waste paper, this is in line with SDGs 4 and SDGs 17 relating to quality education and partnerships with the community.</p>
<p><b>Kata Kunci</b> Kertas bekas Media pembelajaran Gunung berapi</p>	<p><b>Pemanfaatan kertas bekas sebagai media pembelajaran simulasi letusan gunung berapi dalam meningkatkan pengetahuan siswa.</b> Indonesia memiliki jumlah gunung berapi aktif terbanyak di dunia karena letak geologisnya yang berada di pertemuan lempeng Eurasia dan Australia. Namun meskipun demikian pengetahuan masyarakat lokal mengenai erupsi gunung berapi masih sangat minim. Oleh karena itu, pentingnya memberikan edukasi kepada masyarakat dalam konteks ini adalah masyarakat lokal. Program Pengabdian kepada Masyarakat (PkM) ini bertujuan untuk meningkatkan pengetahuan masyarakat terkait proses terjadinya erupsi gunung berapi dengan menggunakan media pembelajaran berbahan dasar bubur kertas, sehingga dapat menjadi pengetahuan mitigasi bencana. Metode yang digunakan adalah observasi, pembinaan atau pelatihan berbasis simulasi praktikum, kuesioner dan wawancara. Subjek Pengabdian Kepada Masyarakat ini adalah masyarakat kelurahan Tambun, kecamatan Baolan, kabupaten Tolitoli berjumlah 21 orang yang bekerjasama dengan mahasiswa prodi pendidikan guru sekolah dasar semester III. Hasil dari program ini adalah bertambahnya pengetahuan masyarakat terkait erupsi gunung berapi dan tumbuhnya kesadaran masyarakat terkait pemanfaatan limbah kertas, hal ini sejalan dengan SDGs 4 dan SDGs 17 yang berkaitan dengan pendidikan berkualitas dan kemitraan bersama masyarakat.</p> <p style="text-align: right;">Copyright © 2024, Hamna et al This is an open access article under the CC-BY-SA license</p> <div style="text-align: right;">  </div>

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## INTRODUCTION

Indonesia is a country on the ring of fire that has many volcanoes, Indonesia has 147 volcanoes, of which 76 are still active making it the country with the highest number of active volcanoes in the world (Bhaskara, 2017). Meanwhile, according to the Ministry of Energy and Mineral Resources, Indonesia has 127 active volcanoes, 70 of which are observed by the Center for Volcanology and Geological Hazard Mitigation. Indonesia is further categorized as the country with the most explosive eruptions ever recorded and the largest number of deaths from eruptions (Cottrell, 2015).

A volcano is a mountain crater or break in the Earth's crust that is the point where liquid lava, gas, or other substances rise to the Earth's surface (Simon et al., 2020). Volcanism is a similar process that ranges several orders of magnitude in space and time, and that all kinds of geological processes occur at volcanoes (Borgia et al., 2010). Volcanic eruptions are natural events that often occur in Indonesia as one of the natural disasters (Teh & Khan, 2021). Eruptions have a negative impact in the form of damaged facilities, loss of resources, obstruction of economic activities and potentially causing many casualties (Gaire et al., 2015; Iqbal, 2021).

Another impact of volcanic eruptions is the occurrence of volcanic earthquakes and the greater impact is the occurrence of Tsunami (Barokah & Kamal, 2023; Day, 2015). The origin of the word "tsunami" is Japanese, with "Tsu" referring to "harbor" and "nami" meaning "wave". Broadly speaking, a tsunami is a wave or series of long-term ocean waves that arise due to an unmitigated disturbance in the marine environment, impacting coastal areas (Mutaqin et al., 2019). Based on the explanation, it can be seen that Indonesia has many active mountains that can trigger eruptions, volcanic earthquakes and other disasters such as tsunamis. Disaster refers to an event or series of events that pose a risk and disrupt people's lives and livelihoods. This can be caused by natural, non-natural factors, or human actions that result in human losses, environmental damage, loss of property, and psychological effects (Kurniawati, 2020; Megananda et al., 2023).

This service activity the team focuses more on volcanic disasters using three-dimensional paper mountain teaching media, because volcanic eruptions do not occur in all parts of Indonesia, unlike floods which almost all regions have been affected, with this causing many people who do not know the process of eruption (Bakkour et al., 2015; Ilham & Amal, 2023).

Indonesian people in general do not know the process of volcanic eruption, especially those who live in non-volcano areas, therefore it is necessary to illustrate the process of volcanic eruption either in the form of a documentary video, or animation (Kerlow et al., 2020; Lansigu et al., 2014; Nadila et al., 2023; Rapprich et al., 2017). This community service activity is carried out with simulations using three-dimensional teaching media which of course can be demonstrated directly by participants so that participants can directly observe the eruption process from the simulation. In contrast to using video illustrations that use two-dimensional media, participants can only see the process without direct demonstration.

The team prefers to use the simulation practice method, this activity in addition to facilitating participants' understanding of the eruption process is also an effort to reduce paper waste. According to data from KLHK in 2020, the amount of paper and cardboard waste is around 21.86 grams per square meter, therefore to minimize the increase in paper waste, it can utilize paper waste into media in learning. Waste paper can be turned into useful items with added value. For example, turning it into pulp that is used as teaching media (Basyari et al., 2022; Hamna & BK, 2023; Khoeriyah & Kamal, 2023). The utilization of learning media using paper waste not only improves the quality of learning, but the utilization of paper waste can increase environmental awareness.

The team conducted the service by using learning media because learning media can support student learning motivation (Kang & Ritzhaupt, 2021; Maruti et al., 2023). One of the tasks of an educator is to motivate students as expressed by KI Hajar Dewantara "Ing Madya Mangun Karsa" which means, as a leader (educator) who is in the middle, the ability to inspire, motivate, collaborate, and encourage creativity in students is important. This strategy can be realized through the application of the discussion method where the teacher acts as a source of ideas and a guide who provides guidance and input to students (Alika et al., 2023; Mudana, 2019).

This community service is also carried out based on the basic law article 31 paragraph 1 which means that the community or citizens have the right to education. In the research location, there are many people who have not received upper secondary education so they do not have much knowledge related to volcanic eruptions. The importance of disaster knowledge is important so that this service is carried out.

This community service program also has relevance to several Sustainable Development Goals (SDGs), especially SDG 4 (Quality Education) and SDG 11 (Sustainable Cities and Settlements). (1) SDG 4 - Quality Education: This community service directly contributes to increasing community knowledge about the process of volcanic eruptions. By educating the local community, this program supports the achievement of SDG 4 which emphasizes the importance of quality and inclusive education. (2) SDG 11 - Sustainable Cities and Settlements: Education on volcanic eruptions has a positive impact on people's awareness of the risks of natural disasters in their area. This can help create more disaster-resilient communities. By encouraging the community to utilize waste paper into three-dimensional learning media, the program also creates awareness on the importance of waste management and contributes to sustainable urban development. (3)

SDG 13 - Action on Climate Change: Although not directly, this program can also relate to SDG 13 by raising awareness of natural phenomena such as volcanic eruptions, which can contribute to the understanding of climate change and its impacts. (4) SDG 17 - Partnerships to Achieve Goals: The collaboration between students and local communities in this program creates partnerships that are in line with SDG 17. These partnerships support the achievement of sustainable development goals through participatory and inclusive approaches. Through this community service program, there are concrete efforts to increase community knowledge about natural disasters, create environmental awareness, and support sustainable development in accordance with the principles of the SDGs.

The community service also uses simulation teaching media made of paper pulp as an effort to reduce paper waste in the surrounding environment. The teaching media can be used several times or the media is durable, so there is no need to throw it away after use because it can be reused. The advantages of the media that the team uses are that the material is easy to find because it comes from paper waste (non-synthetic), easily decomposes when disposed of so it does not pollute the environment, supports recycling programs, the materials used in the eruption experiment process are not dangerous. The making of this learning media also supports Article 11 paragraph 2 of Government Regulation No. 81 of 2012 which requires every individual to reduce and handle waste problems. From this regulation, the team uses paper waste to support waste reduction, in this case paper waste.

Based on the description above, the team conducted community service to the local community around the campus who had absolutely no knowledge related to volcanic eruptions and worked together. This community service activity also involves third semester students to help improve the understanding and knowledge of the community regarding the process of volcanic eruptions. The team used waste paper as a base material in the process of making the mountain as an effort to utilize and reduce paper waste.

## METHOD

The target in this service is the local community who live in Tambun Village, Baolan District, Tolitoli Regency in Universitas Madako Tolitoli. This service also involves students of the Elementary School Teacher Education Study Program, Semester III Class C, totaling 21 students. The reason for this service is to increase the knowledge and understanding of the local community regarding volcanic eruptions, because many local people do not know the process of volcanic eruptions and have never directly seen the volcanic eruption, therefore simulation activities are needed using the help of three-dimensional teaching media.

The method of implementing the service was carried out with initial observations, volcanic eruption simulations, questionnaires and participant response interviews. Initial observations are made to understand the context and initial conditions of the participants (community) or the area that is the focus of the service. This helps gain a better understanding of the problems faced. In this case, the problem encountered is the lack of community understanding related to volcanic eruptions. Operationalization of observations is carried out when the service team visits the location or subject of focus and will observe the condition of community and environmental knowledge directly and record any field facts observed during the observation.

At first the team observed the participants, then continued with the process of making teaching media made from papier-mâché and lava made from a mixture of baking soda, liquid soap and vinegar, then the team simulated a volcanic eruption using the teaching media that had been made. The simulation was carried out by demonstrating three types of mountains, including mountains that are active, mountains that are inactive, and mountains that are no longer active. This community service activity ended with interviews with participants to determine the level of satisfaction and provide space for participants to provide criticism and suggestions to the service team.

The volcanic eruption simulation was conducted to test the response and readiness of participants in dealing with emergency situations that might occur. Simulations were also conducted to help participants understand the process of volcanic eruption with the help of three-dimensional volcano learning media. The simulation was carried out with the initial stage of presenting material related to volcanic eruptions and the geographical conditions of Indonesia which has many volcanoes so it is important to know it as an effort to disaster mitigation preparedness, the next stage is to demonstrate the process of volcanic eruption using volcano teaching media mixed with vinegar and baking soda so as to trigger a reaction and cause gas to push it out, this is likened to lava coming out of the mouth of a volcano. The simulation process is expected to increase the knowledge and experience of participants (community) because participants are directly involved in simulation activities by observing what the process of volcanic eruption is like, which is likened to mountain media and a mixture of baking soda and vinegar as lava.

The use of questionnaires conducted online through the Google Forms platform as an efficient evaluation material because the answers to the questionnaire go directly to the service team server. The questionnaire was given after a series of observation activities and simulation-based training had been completed. The questionnaire presented contains indicators including: (1) Participant satisfaction regarding the material and training provided, (2) The durability of the teaching media used, (3) Community service contribution in increasing community knowledge and reducing paper waste,



(4) The use of teaching media can be used at other educational levels. It is expected that this questionnaire can measure participant satisfaction related to the community service program that has been carried out.

Interviews were conducted to measure in-depth understanding of participants' views, experiences, and expectations related to the problems faced. The interview was operationalized by interviewing a small number of randomly selected participants with questions containing their understanding of the eruption process and the geographical conditions of Indonesia. The interviews were expected to reveal qualitative aspects that may not be covered in the questionnaire, provide better context, and help detail the needs and solutions desired by the participants.

To measure the success of this service program, analytical techniques that can be used include (1) *Initial Observation Analysis*: Evaluate the results of initial observations of participants to assess the level of participation, engagement, and initial reactions to the program; (2) *Volcano Eruption Simulation Analysis*: Assess the effectiveness of the volcano eruption simulation in conveying information and building participants' understanding of the natural phenomenon; (3) *Questionnaire Analysis*: Using data from the questionnaire to evaluate the knowledge gained by participants, their level of satisfaction with the program, as well as feedback for improvement; (4) *Analysis of Participant Response Interviews*: Analyzing the results of the interviews to get an in-depth view of the participants' level of satisfaction, their understanding of the material, and suggestions and criticisms that can be used for future improvements. Using a combination of these analysis techniques, a comprehensive understanding of the success of this service program can be generated as well as areas for improvement in the future.

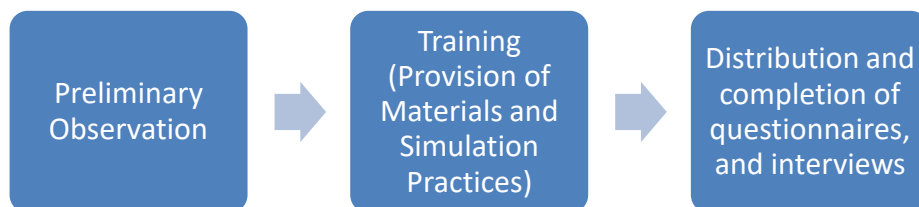


Figure 1. Stages of community service implementation

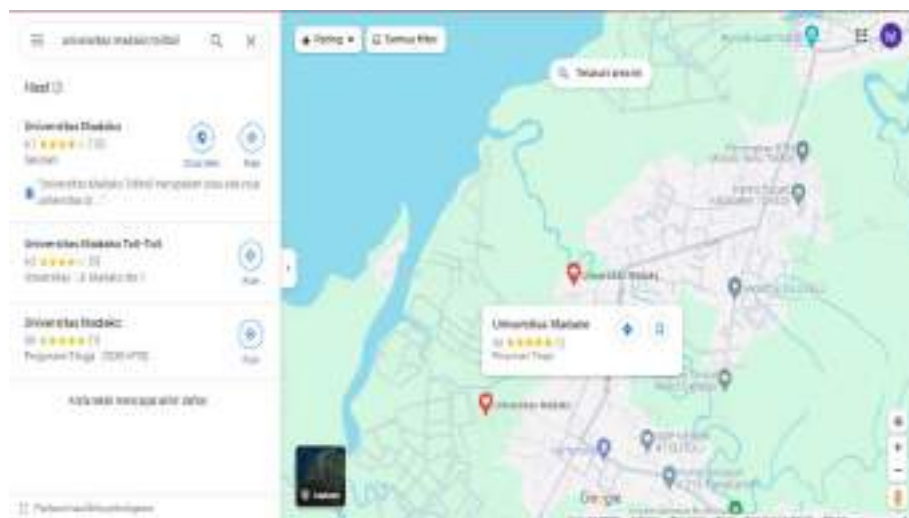


Figure 2. Location map of community service activities

## RESULTS AND DISCUSSION

Learning media is a tool that helps in the process of teaching and learning with the aim of explaining the message that wants to be expressed when learning takes place. This enables the achievement of learning objectives in a more effective and efficient way (Alika et al., 2023; Amalia et al., 2023; Setiawan et al., 2021). In this case, the team used three-dimensional visual learning media made from papier-mâché. The team made three mountains with two different shapes and three different types of activities. The shape of the mountain made is a strato volcano and the maar volcano has a variety of activities such as consisting of active volcanoes, non-active volcanoes, and dead volcanoes (Zulfa et al., 2023; Trisiana et al., 2023; Simon et al., 2020).

The volcano teaching media simulation process activity is presented in Figure 3. Figure 4 presents documentation of community service participants. Meanwhile, Figure 5 shows a simulation of active strato volcano, smoking maar volcano and dead maar volcano (inactive).



Figure 3. Volcano teaching media simulation process



Figure 4. Documentation of community service participants



Figure 5. Simulation of active strato volcano, smoking maar volcano and dead maar volcano (inactive)

Initially when the team held deliberations to discuss the preparation of this service, the team planned to use clay and rice ash as the basic ingredients for making volcano teaching media. However, during the first stage of the initial making, the team experienced problems because the basic ingredients of clay were difficult to obtain in large quantities, and the team also experienced problems during the process of making and drying the teaching media, because during the drying process, the mountain teaching media was damaged in the form of cracks which were quite severe. Therefore, in the second stage of making the team overhauled or remade the mountain which would be coated with cement plaster, but this did not work because the mountain had cracks and the team had difficulty when lifting the media due to excessive weight.

The team took the initiative to change the base material from clay to paper pulp. In making phase III, the team re-made three mountain teaching media with pulp base material which was processed by soaking for approximately three hours. The materials and equipment used in making volcano teaching media, as in the following table.

Table 1. Materials and equipment

No.	Material	No.	Equipment
1.	Paper	1.	Chainsaw
2.	Adhesive or Wood Glue (18 pcs)	2.	Scissors
3.	Triplex/Plywood	3.	Measuring meter
4.	Gray Color Paint	4.	Pencil
5.	Baking Soda (2 pcs)	5.	6 Piece Bottles
6.	2 Bottles of Vinegar	6.	Thin Fabric
7.	Food Dyes		
8.	Liquid Soap		
9.	Used Cardboard		

In stage IV, the team conducted Community Service, the subject of service was the local community who lived in Tambun Village around Universitas Madako Tolitoli with a total of 21 participants, besides that this community service also involved active third semester students of the PGSD Study Program. In this community service program, first the process of making volcano media is carried out by utilizing the materials and equipment that have been prepared, then the design process is carried out in stages: (1) Cut the paper into small pieces; (2) Soak the paper for about three hours, (3) The paper is cut into as small pieces as possible and moistened to form pulp; (4) Squeeze the paper using cheesecloth to reduce moisture content; (5) Mix the paper with glue until evenly distributed; (6) Shape the pulp on plywood to resemble a mountain then place 3 bottles in the middle of the mountain as a support; and (7) Dry the mountain teaching media for about two days, after drying, give color as needed.

After the design of the volcano media was completed, three types of volcanoes were simulated based on their level of activity, namely active volcanoes, inactive volcanoes, and dead volcanoes. In the initial simulation, the team simulated active volcano teaching media (eruption). The volcanic eruption was carried out by mixing the compound  $\text{CH}_3\text{COOH}$  (Vinegar) with  $\text{NaHCO}_3$  (Baking soda) to produce a lava-like reaction due to the reaction between vinegar (acetic acid) and baking soda (sodium bicarbonate) producing sodium acetate, water, and carbon dioxide gas. When the two ingredients react, there is a release of gas in the form of bubbles. This gas is carbon dioxide that results from the chemical reaction, resembling the rise of mountain lava to the earth's surface (Musa & Kamal, 2022; Purwasih & Sahnun, 2022; Supriatin & Hayati, 2022)

The mountain shape used in this simulation is a strato-volcano shape. Strato or composite conical volcanoes are the most common and riskiest shape compared to other types of volcanoes (Galindo et al., 2021; Idris et al., 2022; Muttaqien & Awiria, 2022). The lower part tends to be flat, but the higher up it gets steeper to form a conical structure. The tops of strato volcanoes usually have small craters. They generally form in zones where plates meet each other (subduction) or areas of convergence, although their shapes are not always the same as they are affected by the variety and type of eruptions.

In the simulation, the team explained the causes of volcanic eruptions. The main cause of volcanic eruptions is the tectonic activity that occurs in the Earth's plates (Alfina et al., 2022; Masum & Ali Akbar, 2019; Wulandari et al., 2022). When two plates meet or slide over each other, the pressure and friction between them can cause cracks and fissures in the Earth's crust. Apart from tectonic activity, mountains can also erupt due to volcanic activity. As magma rises from the deep layers of the earth towards the surface, the resulting pressure and heat can cause volcanoes to erupt. Other factors that can affect a volcanic eruption include the gas content in the magma, the state of the crater, and weather conditions (Fitri et al., 2023; Popa et al., 2021).

The gas content in magma can also affect mountain eruptions. When magma rises to the surface, the pressure of the gases inside may increase (Mittal & Richards, 2019; Stibies et al., 2023). If the pressure of these gases cannot be released properly, the mountain will experience a violent eruption as a result. Gases that are usually present in magma include water vapor and carbon dioxide as well as sulfur dioxide, and nitrogen. The state of the mountain crater can also affect the eruption of the mountain. If a mountain crater is sealed, the pressure of magma rising to the surface will accumulate inside the crater, this accumulation of pressure will cause a strong eruption when the crater finally breaks (Bato et al., 2021; Sobon et al., 2023; Wattimena et al., 2022).

The second simulation, the team simulated a resting mountain, which is a mountain that only emits smoke without emitting lava. The simulation was carried out by using used cardboard boxes that were burned as smoke-producing materials that were inserted into the mountain hole. The shape of the mountain used in this simulation is the shape of a maar mountain. Maar is a depression or basin that often contains water, with a diameter of up to 2 kilometers, and is surrounded by deposits from volcanic eruptions. Maars that have depressed craters without water are referred to as "dry

maars" (Agustin & Bronto, 2019; Astari, 2022). A maar is a basin surrounded by sediment formed by a volcanic eruption (Ampry et al., 2022; Simon et al., 2020). While in terms of language, maar is a term derived from German which means "crater" or "crater". The main reason why volcanoes only emit smoke without emitting lava is because of the formation of a lava dome in the belly of the volcano (Adu & Cendana, 2022; Christian et al., 2020). This lava dome is formed when molten magma cools and solidifies in a magma channel (Tang et al., 2022). As a result, the pressure inside the volcano increases and traps gas and water vapor inside.

In addition, the geological conditions surrounding the volcano can also affect its activity. If there are fissures or cracks around the volcano, the magma pressure will be reduced and cause the volcano's activity to become quieter. However, even if it only emits smoke, a volcano can still harm the surrounding environment. The smoke emitted by volcanoes can contain toxic gases such as carbon monoxide and sulfur dioxide that can harm human and animal health.

The dead mountain teaching media is not simulated, it is only given an explanation related to the phenomenon that causes the mountain to have an inactive or dead status. Dead mountains are also referred to as dead mountains (Al-Maraghi et al., 2017). A volcano becomes dormant or dead when there is no more volcanic activity occurring within it. This can be caused by a variety of factors, including changes in the magma source, the closure of magma conduits, or the cooling of magma below the surface. When a volcano is dormant, it means that there are no signs of eruption or volcanic activity for a significant period of time. However, dormant volcanoes have the possibility of becoming active again although the likelihood is relatively low (Poland & Anderson, 2020).

Changes in the magma system or pressure building below the surface can trigger volcanic activity again. In some cases, dead volcanoes can undergo a process of "reactivation" where volcanic activity returns after a long period of inactivity. While this is not common, there have been instances where long-dormant volcanoes have erupted again. However, it is important to remember that when a dormant volcano reactivates, it can pose a serious threat to the surrounding environment. Therefore, constant monitoring of dormant volcanoes is essential to mitigate risks and anticipate possible eruptions.

After the volcano eruption simulation was carried out, the service team gave an online questionnaire to 16 participants who were willing to fill out the questionnaire with the aim of measuring how well the volcano simulation process was carried out by the community service team.

The questionnaire presented contains indicators including: (1) Participant satisfaction related to the material and training provided, (2) The durability of the teaching media used, (3) Community service contribution in increasing community knowledge and reducing paper waste, (4) The use of teaching media can be used at other educational levels. It is hoped that this questionnaire can measure participant satisfaction related to community service that has been carried out. Meanwhile, to measure the participants' cognition, it was measured by an evaluation interview.

The questions and the percentage of answers to the questionnaire or questionnaire given to community service participants include: (1) How satisfied are you with the community service project that the team did? Participants' answers: 75% very satisfied and 25% satisfied. (2) How did the research team perform in explaining the materials and simulations? Participants' answers: 81.3% very satisfied and 18.8% satisfied. (3) How good is the mountain project that the community service team made? Participants' answers: 37.5% very satisfied and 62.5% satisfied. (4) Do you think this project can be applied to elementary school students? Participants' answers: 68.8% answered yes and 31.3% answered no. (5) How durable is the mountain project that the community service team made? Participants' answers: 62.5% durable and 37.5% not durable enough. (6) Can this project be used for socialization purposes to the community? Participants' answers: 93.8% answered yes and 6.3% answered no. (7) Can this project reduce paper waste? Participants' answers: 93.8% answered yes and 6.3% answered no.

From the results of the questionnaire above, it can be concluded that the majority of community service participants are satisfied with the material provided by the community service team with a satisfaction presentation in the range of 75-80%, the use of media is also durable according to the views of participants through questionnaire answers, and this project can be applied to other levels such as elementary schools and can reduce the use of waste. This is in line with SDGs 4 Quality education because it involves collaboration between students and the local community and SDGs 11 Sustainable cities and settlements by reducing paper waste which is abundant in the service area.

After providing a link to the online questionnaire, the research team also conducted interviews with four community service participants consisting of 2 male participants and 2 female participants, the results of the interviews are presented in tabular form. A knowledge evaluation interview is an interactive process in which an interviewer asks a specific individual or subject to measure, assess, or evaluate his or her understanding and knowledge of a topic or field specific topic. The purpose of a knowledge evaluation interview is to understand the extent of information, concepts, or knowledge possessed by the subject regarding the topic being evaluated. In addition, another goal is to identify knowledge weaknesses, additional educational needs, or areas where the subject requires further assistance to improve their understanding of the subject.

1. What is a volcano? Participants' answers are presented in Table 2.

Table 2. Questions and answers of community service participants

Respondent's Initials	Group	Answers	Answer Result Description
MA	I	A volcano is a mountain that erupts and can emit lava.	Very good
MA	I	A volcano is a mountain filled with magma that can eject lava.	Very good
PA	I	A volcano is a mountain that has a volcanic crater filled with magma.	Very good
M	I	Volcanoes are mountains that contain magma deposits that can emit lava.	Very good

2. What is the process of a volcanic eruption? Participants' answers are presented in Table 3.

Table 3. Questions and answers of community service participants

Respondent's Initials	Group	Answers	Answer Result Description
MA	I	Volcanic eruptions occur due to magma deposits in the bowels of the earth, pushed out by high-pressure gas.	Good
MA	I	The eruption is caused by the shifting of the earth's structural layer, which triggers the gas pressure that pushes the magma out.	Very good
PA	I	The occurrence of eruptions is triggered by the pressure of gas that pushes magma deposits, now these magma deposits come out due to the push of high-pressure gas, caused by the collision of two plates.	Very good
M	I	Eruptions occur due to the collision of the earth's plates, which causes great pressure, so that the magma liquid is pushed and moves up and into the crater channel and out.	Very good

3. Why does Indonesia have many volcanoes? Participants' answers are presented in Table 4.

Table 4. Questions and answers of community service participants

Respondent's Initials	Group	Answers	Answer Result Description
MA	I	Because Indonesia is a ring of fire country, there are many volcanoes in Indonesia.	Very good
MA	I	Indonesia has many volcanoes due to its location on the Pacific Ring of Fire, an area along the edge of the Pacific Ocean that is prone to tectonic activity, making it susceptible to volcanic formation and activity.	Very good
PA	I	Indonesia is located on the "Pacific Ring of Fire," a region along the edge of the Pacific Ocean that experiences frequent seismic and volcanic activity. This is due to its geographical location at the confluence of the Indo-Australian, Eurasian and Pacific tectonic plates. As a result, there are many subduction zones, plate boundaries, and tectonic spreading zones that trigger volcanic activity in Indonesia, making it home to many volcanoes.	Very good
M	I	I think Indonesia has many volcanoes because the country is located in a region that experiences frequent earthquakes and volcanic activity. As I learnt, Indonesia is located along the Pacific Ring of Fire, a place where tectonic plates meet and a lot of volcanic activity occurs. This is related to Indonesia's geographical location at the confluence of several major plates, such as the Indo-Australian, Eurasian and Pacific plates. As a result, there are many subduction zones and tectonic spreading zones that can trigger volcanic eruptions in Indonesia.	Very good



From the Table 2, Table 3, and Table 4, it can be concluded that participants can answer questions properly and correctly, this proves an increase in the knowledge of participants from before who did not know the volcano simulation at all. The increase in knowledge is due to the provision of material accompanied by teaching media simulations that directly involve community service participants so that they can feel and understand the phenomena that occur in simulations and actual conditions. This is in line with previous research which states that the simulation method can increase community understanding and knowledge (Nurbaya et al., 2022).

## CONCLUSION

In accordance with the findings that have been reviewed, it can be concluded: (1) This volcanic eruption simulation can improve the science literacy knowledge of Primary School Teacher Education students in the third semester of Universitas Madako Tolitoli, because participants can better understand the process of volcanic eruption because participants are directly involved in the simulation; (2) After going through the volcanic eruption simulation, students managed to describe and understand the process of mountain eruption, recognise volcanoes in Indonesia, and understand the chemical reaction between vinegar and baking soda; and (3) Primary School Teacher Education students in the third semester of Universitas Madako Tolitoli showed high enthusiasm and enthusiasm during the implementation of this volcanic eruption simulation and increased awareness of the importance of utilising paper waste. Based on what has been discussed, the service team provides suggestions: (1) In future research, it is recommended to adopt broader quantitative methods as well as case studies covering various geographical contexts in order to expand the generalisation and application of the use of paper waste in volcanic eruption simulations; (2) Propose further collaboration between educational institutions, the paper industry, and environmental scientists to develop practical guidelines for the use of paper waste in volcanic eruption learning as an effort to support environmental sustainability; (3) To complement the results of this study, further research involving a survey of student responses to the use of paper waste as a teaching medium for volcanic eruption simulation is expected to gain a more comprehensive insight into its acceptance and benefits; (4) Further consideration is needed regarding the adaptation of this model in the context of distance learning (online) to ensure its accessibility for students in various locations as well as the application of supporting information technology; and (5) Encourage further discussion on the potential integration of paper waste in the formal education curriculum to expand students' understanding of natural disaster mitigation, especially volcanic eruptions, as an important part of environmental and disaster understanding.

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## REFERENCES

- Adu, S. S., & Cendana, W. (2022). Penerapan model think, pair, and share berbasis alat peraga untuk meningkatkan kemampuan berpikir kritis siswa. *Madako Elementary School*, 1(2), 132–150. <https://doi.org/https://doi.org/10.56630/mes.v1i2.53>
- Agustin, F., & Bronto, S. (2019). Volkanostratigrafi indera jauh kompleks Gunungapi Gede dan Sekitarnya, Jawa Barat, Indonesia. *Jurnal Geologi Dan Sumberdaya Mineral*, 20(1), 9–16. <https://doi.org/https://doi.org/10.33332/jgsm.geologi.v20i1.386>
- Al-Maraghi, F. A., Rochman, C., & Suhendi, H. Y. (2017). Profil literasi peserta didik terhadap mitigasi bencana gunung berapi di daerah Sukaratu Tasikmalaya. *WaPFI (Wahana Pendidikan Fisika)*, 2(2), 32–35. <https://doi.org/https://doi.org/10.17509/wapfi.v2i2.8275>
- Alfina, Irmadurisa, A., Zannah, A. R., Ivansyah, A. R., Istiningsih, S., & Widodo, A. (2022). Pentingnya penggunaan media animasi dalam meningkatkan kemampuan belajar matematika siswa sekolah dasar. *Madako Elementary School*, 1(2), 78–87. <https://doi.org/https://doi.org/10.56630/mes.v1i2.49>
- Alika K, H., Andriany, J., Oktavia, S., Agustina, R., Nursusanti, A., & Wahyuni, A. (2023). Meretas filsafat pendidikan materialisme-naturalisme dalam konteks pendidikan dasar. *Madako Elementary School*, 2(1), 48–61. <https://doi.org/https://doi.org/10.56630/mes.v2i1.60>
- Amalia, A.N., Putriani, I & Fauzi, A. (2023). Pengembangan multimedia pandaca (pandai tanda baca) untuk siswa sekolah dasar. *Madako Elementary School*, 2(1), 35–47. <https://doi.org/https://doi.org/10.56630/mes.v2i1.162>
- Ampry, E. S., Arsiah, Fatwa, M. F., A.M, M. I., & Arifuddin. (2022). Supervisi kepala sekolah terhadap kinerja guru sekolah

- dasar. *Madako Elementary School*, 1(2), 176–186. <https://doi.org/https://doi.org/10.56630/mes.v1i2.58>
- Astari, T. (2022). Buku teks dalam implementasi kurikulum merdeka di sekolah dasar. *Madako Elementary School*, 1(2), 163–175. <https://doi.org/https://doi.org/10.56630/mes.v1i2.56>
- Bakkour, D., Enjolras, G., Thouret, J.-C., Kast, R., Mei, E. T. W., & Prihatminingtyas, B. (2015). The adaptive governance of natural disaster systems: Insights from the 2010 mount Merapi eruption in Indonesia. *International Journal of Disaster Risk Reduction*, 13, 167–188. <https://doi.org/https://doi.org/10.1016/j.ijdrr.2015.05.006>
- Barokah, A. R., & Kamal, R. (2023). Implementasi sekolah adiwiyata terhadap pembentukan karakter kedisiplinan dan entrepreneurship siswa di MI Salafiyah Tanjung. *Madako Elementary School*, 2(2), 181–189. <https://doi.org/https://doi.org/10.56630/mes.v2i2.173>
- Basyari, I. W., Sugiarti, I. Y., & Karimah, N. I. (2022). Daur ulang limbah kertas menjadi media pembelajaran literasi peta pada KKG SD Kota Cirebon. *Bima Abdi: Jurnal Pengabdian Masyarakat*, 2(1), 87–96. <https://doi.org/https://doi.org/10.53299/bajpm.v2i1.149>
- Bato, M. G., Lundgren, P., Pinel, V., Solidum, R., Daag, A., & Cahulogan, M. (2021). The 2020 eruption and large lateral dike emplacement at Taal Volcano, Philippines: Insights From Satellite Radar Data. *Geophysical Research Letters*, 48(7), 1–15. <https://doi.org/10.1029/2021GL092803>
- Bhaskara, G. I. (2017). Gunung berapi dan pariwisata: Bermain dengan api. *Jurnal Analisis Pariwisata*, 17(1), 31–40. <https://doi.org/https://doi.org/10.23887/jfi.v2i2.21285>
- Borgia, A., Aubert, M., Merle, O., & Van Wyk De Vries, B. (2010). What is a volcano? *What Is a Volcano*, 1–9.
- Christian, K., Yorks, J., & Das, S. (2020). Differences in the evolution of pyrocumulonimbus and volcanic stratospheric plumes as observed by cats and caliop space-based lidars. *Atmosphere*, 11(10), 1–19. <https://doi.org/10.3390/atmos11101035>
- Cottrell, E. (2015). Chapter 1 - Global Distribution of Active Volcanoes. In J. F. Shroder & P. B. T.-V. H. Papale Risks and Disasters (Eds.), *Hazards and Disasters Series* (pp. 1–16). Elsevier. <https://doi.org/https://doi.org/10.1016/B978-0-12-396453-3.00001-0>
- Day, S. J. (2015). Volcanic tsunamis. In *The encyclopedia of volcanoes* (pp. 993–1009). Elsevier. <https://doi.org/https://doi.org/10.1016/B978-0-12-385938-9.00058-4>
- Fitri, N. W.N., Fauzi, A., & Widiastuti, S. (2023). Pengembangan game edukasi math hero's adventure pada pembelajaran matematika kelas iv sekolah dasar. *Madako Elementary School*, 2(1), 85–99. <https://doi.org/https://doi.org/10.56630/mes.v2i1.163>
- Gaire, S., Castro Delgado, R., & Arcos González, P. (2015). Disaster risk profile and existing legal framework of Nepal: Floods and landslides. *Risk Management and Healthcare Policy*, 139–149. <https://doi.org/https://doi.org/10.2147/RMHP.S90238>
- Galindo, I., Johnson, M. E., Martín-González, E., Romero, C., Vegas, J., Melo, C. S., Ávila, S. P., & Sánchez, N. (2021). Late pleistocene boulder slumps eroded from a basalt shoreline at el confital beach on gran canaria (Canary islands, Spain). *Journal of Marine Science and Engineering*, 9(2), 1–23. <https://doi.org/10.3390/jmse9020138>
- Hamna & BK, M. K. U. (2023). Model pembelajaran guided inquiry di era merdeka belajar: Efektivitas projek sains IPA siswa di sekolah dasar. *Madako Elementary School*, 2(2), 121–136. <https://doi.org/https://doi.org/10.56630/mes.v2i2.209>
- Idris, I., Hasjaya, A., M, S., Maryam, A., & Ahmad, R. E. (2022). Pengaruh model problem based learning berbantuan zoom meeting terhadap hasil belajar siswa. *Madako Elementary School*, 1(2), 151–162. <https://doi.org/https://doi.org/10.56630/mes.v1i2.55>
- Ilham, M., & Amal, A. (2023). Implementasi model project based learning berbasis teori belajar kolaboratif dalam pembelajaran konsep dasar IPA SD. *Madako Elementary School*, 2(2), 172–180. <https://doi.org/https://doi.org/10.56630/mes.v2i2.198>
- Iqbal, M. (2021). Disaster management in Indonesia: A Lesson from the 2010 Eruption of Mount Merapi. *Unisia*, 39(1). <https://doi.org/https://doi.org/10.20885/unisia.vol39.iss1.art1>
- Kang, Y., & Ritzhaupt, A. (2021). A comparative study of game-based online learning in music appreciation: An analysis of student motivation and achievement. *Journal of Educational Multimedia and Hypermedia*, 30(1), 59–80. <https://doi.org/https://www.learntechlib.org/primary/p/217256/>
- Kerlow, I., Pedreros, G., & Albert, H. (2020). Earth girl volcano: characterizing and conveying volcanic hazard complexity in an interactive casual game of disaster preparedness and response. *Geoscience Communication*, 3(2), 343–364. <https://doi.org/https://doi.org/10.5194/gc-3-343-2020>
- Khoeriyah, F., & Kamal, R. (2023). Implementasi evaluasi pembelajaran berbasis Student Led Conference ( SLC ) di sekolah dasar. *Madako Elementary School*, 2(2), 149–162. <https://doi.org/https://doi.org/10.56630/mes.v2i2.166>
- Kurniawati, D. (2020). Komunikasi mitigasi bencana sebagai kewaspadaan masyarakat menghadapi bencana. *JURNAL SIMBOLIKA Research and Learning in Communication Study*, 6(1), 51–58. <https://doi.org/10.31289/simbollika.v6i1.3494>
- Lansigu, C., Bosse-Lansigu, V., & Le Hebel, F. (2014). Tools and methods used to represent geological processes and

- geosites: graphic and animated media as a means to popularize the scientific content and value of geoheritage. *Geoheritage*, 6, 159–168. <https://doi.org/https://doi.org/10.1007/s12371-014-0101-4>
- Maruti, E. S., Hanuwati Anurilandhan Hidayat, & Daffa Adhiza Ilfani. (2023). Peran guru dan orang tua dalam pembelajaran daring di sekolah dasar. *Madako Elementary School*, 2(1), 100–109. <https://doi.org/https://doi.org/10.56630/mes.v2i1.64>
- Masum, M., & Ali Akbar, M. (2019). The pacific ring of fire is working as a home country of geothermal resources in the world. *IOP Conference Series: Earth and Environmental Science*, 249(1), 1–8. <https://doi.org/10.1088/1755-1315/249/1/012020>
- Megananda, N. P., Suyitno, & Anindya, D. (2023). Aktualisasi nilai adiwiyata pada konstelasi pembelajaran di sekolah dasar. *Madako Elementary School*, 2(2), 163–171. <https://doi.org/https://doi.org/10.56630/mes.v2i2.210>
- Zulfa, M., Munawarah, H. & Rizqi, S. (2023). Upaya pengenalan budaya lokal batik untuk meningkatkan kreativitas siswa madrasah ibtidaiyah pekalongan. *Madako Elementary School*, 2(1), 62–84. <https://doi.org/https://doi.org/10.56630/mes.v2i1.165>
- Mittal, T., & Richards, M. A. (2019). Volatile degassing from magma chambers as a control on volcanic eruptions. *Journal of Geophysical Research: Solid Earth*, 124(8), 7869–7901. <https://doi.org/10.1029/2018JB016983>
- Mudana, I. G. A. M. G. (2019). Membangun karakter dalam perspektif filsafat pendidikan Ki Hadjar Dewantara. *Jurnal Filsafat Indonesia*, 2(2), 75–81. <https://doi.org/https://doi.org/10.23887/jfi.v2i2.21285>
- Musa, M.M & Kamal, R. (2022). Ekstrakurikuler art painting dalam meningkatkan kreativitas siswa pada kompetensi pembelajaran abad 21 di sekolah dasar. *Madako Elementary School*, 1(2), 118–131. <https://doi.org/https://doi.org/10.56630/mes.v1i2.59>
- Mutaqin, B. W., Lavigne, F., Hadmoko, D. S., & Ngalawani, M. N. (2019). Volcanic eruption-induced tsunami in Indonesia: A review. *IOP Conference Series: Earth and Environmental Science*, 256(1), 12023. <https://doi.org/10.1088/1755-1315/256/1/012023>
- Muttaqien, N., & Awiria. (2022). Peningkatan kemampuan berbicara bahasa Inggris siswa madrasah ibtidaiyah melalui teknik pembelajaran picture and picture. *Jurnal Madako Elementary School*, 1(2), 68–77. <https://doi.org/https://doi.org/10.56630/mes.v1i2.47>
- Nadila, N., Widiastuti, S., & Fauzi, A. (2023). Pengembangan buku ajar ide pokok berbasis potensi lokal Pantai Tambakrejo : Model kooperatif scramble di SD. *Madako Elementary School*, 2(2), 110–120. <https://doi.org/https://doi.org/10.56630/mes.v2i2.207>
- Nurbaya, N., Haji Saeni, R., & Irwan, Z. (2022). Peningkatan pengetahuan dan kader posyandu melalui kegiatan edukasi dan simulasi. *JMM (Jurnal Masyarakat Mandiri)*, 6(1), 678–685. <https://doi.org/10.31764/jmm.v6i1.6579>
- Sobon, K., Sigarlaki, O., & Supit, P.H (2023). Peningkatan keterampilan membaca pemahaman melalui metode SQ3R Pada siswa kelas IV SD 2 Petir. *Madako Elementary School*, 2(1), 22–34. <https://doi.org/https://doi.org/10.56630/mes.v2i1.164>
- Poland, M. P., & Anderson, K. R. (2020). partly cloudy with a chance of lava flows: Forecasting volcanic eruptions in the twenty-first century. *Journal of Geophysical Research: Solid Earth*, 125(1), 1–32. <https://doi.org/10.1029/2018JB016974>
- Popa, R. G., Bachmann, O., & Huber, C. (2021). Explosive or effusive style of volcanic eruption determined by magma storage conditions. *Nature Geoscience*, 14(10), 781–786. <https://doi.org/10.1038/s41561-021-00827-9>
- Purwasih, W., & Sahnun, A. (2022). Peningkatan mutu lembaga pendidikan dasar melalui manajemen sarana dan prasarana. *Madako Elementary School*, 1(2), 99–117. <https://doi.org/https://doi.org/10.56630/mes.v1i2.51>
- Rapprich, V., Lisec, M., Fiferina, P., & Závada, P. (2017). Application of modern technologies in popularization of the Czech volcanic geoheritage. *Geoheritage*, 9, 413–420. <https://doi.org/https://doi.org/10.1007/s12371-016-0208-x>
- Setiawan, H. R., Rakhmadi, A. J., & Raisal, A. Y. (2021). Pengembangan media ajar lubang hitam menggunakan model pengembangan addie. *Jurnal Kumparan Fisika*, 4(2), 112–119. <https://doi.org/https://doi.org/10.33369/jkf.4.2.112-119>
- Simon, M. A. V., Setiawan, W., & Sastra, N. P. (2020). rancang bangun sistem peringatan dini bahaya aktivitas gunung berapi berbasis mikrokontroler arduino. *Jurnal SPEKTRUM*, 7(3), 42. <https://doi.org/10.24843/spektrum.2020.v07.i03.p6Stibies>
- J. M. A., Fitriani, A. A., & Yulianto, A. (2023). Analisis alat peraga terhadap motivasi belajar IPA kelas V SD Kristus Raja II Kota Sorong. *Madako Elementary School*, 2(2), 137–148. <https://doi.org/https://doi.org/10.56630/mes.v2i2.206>
- Supriatin, A., & Hayati, L. A. N. (2022). Permainan edukatif sebagai sarana dalam mengembangkan kemampuan literasi sains pada anak usia SD di Kelurahan Habaring Huring. *Institut Riset Dan Publikasi Indonesia (IRPI)*, 570–574.
- Tang, H., Tian, Z., Gao, Y., & Dai, X. (2022). Review of volcanic reservoir geology in China. *Earth-Science Reviews*, 232(6), 104158. <https://doi.org/10.1016/j.earscirev.2022.104158>
- Teh, D., & Khan, T. (2021). types, definition and classification classifications of natural disasters natural disasters and threat level threat levels. In *Handbook of Disaster Risk Reduction for Resilience: New Frameworks for Building Resilience to Disasters* (pp. 27–56). Springer. [https://doi.org/https://doi.org/10.1007/978-3-030-61278-8\\_2](https://doi.org/https://doi.org/10.1007/978-3-030-61278-8_2)

- Trisiana, R., Munte, A., Betaubun, C. A., & Malau, R. (2023). perlukah filsafat ber-lokalitas-naratif di sekolah dasar?: membingkai sekat pengasuhan guru. *Madako Elementary School*, 2(1), 1–21. <https://doi.org/https://doi.org/10.56630/mes.v2i1.171>
- Wattimena, S., Fatimah, W., Jusmawati, & Supardi, R. (2022). Hubungan pola asuh orang tua dan kebiasaan belajar terhadap prestasi siswa di sekolah dasar. *Madako Elementary School*, 1(2), 53–67. <https://doi.org/https://doi.org/10.56630/mes.v1i2.46>
- Wulandari, N., Muhdar, S., Sari, N., Mariyati, Y., & Saddam. (2022). Keefektifan media pembelajaran berbasis multimedia menggunakan powerpoint untuk meningkatkan hasil belajar siswa sekolah dasar. *Madako Elementary School*, 1(2), 88–98. <https://doi.org/https://doi.org/10.56630/mes.v1i2.50>



# Response of training participants in preparation of argumentative questions to train HOTS in Davao Indonesian school teachers

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ARTICLE INFO	ABSTRACT
<p><b>Article history</b> Received: 2023-12-17 Revised: 2024-01-16 Accepted: 2024-02-01 Published: 2024-02-05</p> <p><b>Keywords</b> Quality education Science Technology Engineering Mathematics Teacher training</p>	<p><i>Higher-Order Thinking Skills (HOTS) can be trained through concepts in science learning generally, and biology in particular. Teacher competence to facilitate students skilled HOTS can be improved through scientific forums, one of which is training and workshops. This activity is an alternative for teachers to refresh their understanding and pedagogical skills and build enthusiasm through various modeling and information to generate motivation. Training activities on the preparation of argumentative questions to train HOTS for Davao Indonesian School Teachers of Philippines were held in two stages, the first stage was carried out synchronously through online meetings using Zoom Meeting, while in the second stage, training was carried out asynchronously using Google Classroom. Trainees' responses to the implementation of the training were netted with an online questionnaire using Google Form. The data were analyzed in a quantitative descriptive. The results of this study showed that all participants rated that the material presented by the resource persons was good, which included material on HOTS, STEM approaches, and argumentative thinking. In addition, participants also gave positive responses to the workshop on developing argumentative questions, the ability of resource persons, and the technical implementation of the training. Participants hope that this activity can be followed up with offline training.</i></p>
<p><b>Kata kunci:</b> Pelatihan guru Pendidikan berkualitas Science Technology Engineering Mathematics</p>	<p><b>Respon peserta pelatihan dalam penyusunan soal argumentatif untuk melatih HOTS guru sekolah Indonesia di Davao.</b> Keterampilan berpikir tingkat tinggi dapat dilatihkan melalui konsep-konsep dalam pembelajaran sains umumnya, dan biologi khususnya. Kompetensi guru untuk memfasilitasi siswa terampil berpikir tingkat tinggi dapat ditingkatkan melalui forum ilmiah, salah satunya adalah pelatihan dan workshop. Kegiatan tersebut menjadi salah satu alternatif bagi guru untuk menyegarkan kembali pemahaman dan keterampilan pedagoginya serta membangun semangat melalui berbagai modeling dan informasi untuk membangkitkan motivasi. Kegiatan pelatihan Penyusunan Soal-soal Argumentatif untuk Melatih Berpikir HOTS pada Guru Sekolah Indonesia Davao Filipina diselenggarakan dalam dua tahap, tahap pertama dilakukan secara sinkron melalui pertemuan daring dengan menggunakan Zoom Meeting, sedangkan tahap kedua, pelatihan dilakukan secara asinkron dengan menggunakan Google Classroom. Respons peserta pelatihan terhadap pelaksanaan pelatihan dijarah dengan kuesioner daring menggunakan Google Form. Data dianalisis secara deskriptif kuantitatif. Hasil studi ini menunjukkan bahwa seluruh peserta memberikan menilai bahwa materi yang disampaikan narasumber baik, yaitu meliputi materi HOTS, pendekatan STEM, dan berpikir argumentatif. Selain itu, peserta juga memberi respons positif terhadap kegiatan workshop pengembangan soal argumentatif, kemampuan narasumber, dan teknis pelaksanaan pelatihan. Peserta berhadap kegiatan ini dapat ditindaklanjuti dengan pelatihan secara luring.</p> <p style="text-align: right;">Copyright © 2024, Puspitawati et al This is an open access article under the <a href="#">CC-BY-SA</a> license</p> <div style="text-align: right;">  </div>

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## INTRODUCTION

Davao Indonesian School or Sekolah Indonesia Davao (SID) is located in Davao City, Mindanao Island, Philippines, and is intended for Indonesian children whose parents live there as Indonesian workers in various sectors. Indonesian citizens who settled in the Mindanao Islands have settled several descendants in the territory of the Philippines. With the spread of Indonesian waka in the Philippine region, SID also facilitates students to live in dormitories (SID, 2023).

The condition of schools and students as described is very possible in the implementation of quality education with global competitiveness by instilling the values of Visionary, Agility, Resilience, Innovative, having an exemplary personality, having a balance of intellectual, emotional, physical, social, and spiritual intelligence. Through uploads on the official website, it is explained that learning in schools uses various approaches, and learning methods oriented to High Order Thinking Skills and focuses on improving critical skills and problem-solving skills, collaboration skills, communication skills, and creativity and innovation skills (4C) so that the sense of nationalism and Pancasila Character remains inherent and stronger in the personality of SID Alumni (SID, 2023). Basic Education Data (Dapodik) of the Ministry of Education, Culture, Research, and Technology in 2023 shows that SID has five schools for high school with 10 teachers and 46 students (Kemdikbud, 2020). Basic Education Data (Dapodik) of the Ministry of Education, Culture, Research and Technology in 2023 shows that SID has five schools for high schools with 10 teachers and 46 students (SID, 2023).

The condition of the school as written above illustrates that the number of teachers and students is not as many as Indonesian schools in the country. The learning method applied is oriented towards High Order Thinking Skills and focuses on achieving the 4Cs. It is possible to optimize the achievement of higher order thinking skills (HOTS), through workshops and higher order thinking conditioning by teachers on students during the learning process. Teacher competence to facilitate students skilled in higher-order thinking (HOTS) can be improved through scientific forums, one of which is workshops and workshops. This activity is an alternative for teachers to refresh their understanding and pedagogical skills and build enthusiasm through various modeling and information to generate motivation.

Higher order thinking skills (HOTS) can be trained through concepts in science learning generally, and biology in particular. Science/biology learning essentially activates students both physically and mentally in learning, linking learning materials with their application in everyday life, combining science-technology-society and practicing process skills namely observing, questioning, collecting information, reasoning, and communicating. Mastery of concepts by students is expected to be able to produce completeness according to learning competencies.

The importance of facilitating learning to encourage students' understanding of concepts is a study caused by the fact that understanding is closely related to learning. Learning focuses on what we know and the process of transferring knowledge does not rule out the possibility of acquiring students' core skills. Core skills are acquired through activities, 1) discussion, 2) experiment, 3) teacher demonstration, 4) experiment, 5) making observations, 6) verifying scientific laws through experiments, 7) formulating and testing hypotheses, 8) presenting and communicating research procedures and results, 9) documenting scientific activities, 10) identifying and summarizing information (Viyanti et al., 2016). One way to strengthen concepts in students can be done through the activity of the ability to argue.

Argumentation is an important means of learning through natural phenomena and encourages the development of students' critical attitudes (Driver et al., 2020). This encourages students' understanding of concepts associated with empowering argumentation skills with steps that are linked to argumentation elements. Similarities and differences between cooperative and collaborative learning. Cooperative learning; 1) students assess individual and group performance, 2) students work together in groups with an emphasis on social skills, and 3) Improve social skills in solving problems in everyday life. Collaborative learning; 1) students assess individual and group performance, 2) students are required to work together in groups with an emphasis on social skills, and 3) improve social skills in solving problems in everyday life. Differences cooperative learning 1) students receive social skills workshops in small groups, 2) structured problem-solving activities with each student having a specific role, 3) the teacher observes, listens and intervenes in the group when necessary, 4) cooperative learning is described as an "order" in the community process that helps and interconnects with each other in order to fulfill a goal with closed-ended tasks, 5) cooperative learning is more directive and more controlled by the learner, 6) cooperative learning many mechanisms of team analysis and introspection are learner-centered whereas in collaborative learning they are more learner-centered. Collaborative learning; 1) there is a belief that students already have the necessary social skills and they will build on their existing skills to achieve their goals, 2) students in groups (at least 2 people) jointly organize and negotiate in solving problems that are more open and complex in nature, 3) collaborative activities do not always have to be monitored by instructors/teachers. When questions are directed towards the teacher, the teacher simply guides the students to the information needed, 4) in collaborative learning, students are encouraged to build knowledge where it is distributed throughout the group and is open-ended in problem solving, 5) many of the mechanisms of team analysis and introspection are more learner-centered, and 6) collaborative learning more controlled by learners.

The existence of collaboration in learning is very effective for students in the classroom to empower argumentation skills (Burns. et al., 2014). Based on this background, argumentation skills workshops through collaborative activities in learning are needed. Activities are expected to be able to improve the ability of SID teachers to train students' argumentation skills to build higher-order thinking skills (HOTS). The success of this workshop activity will improve the quality of student learning, especially for SID. Based on these main problems, several problems can be described that is how the workshop participants respond to the preparation and use of argumentation-based assessment instruments. The workshop included a global partnership that brought together state and non-state organizations to collaborate on

advocacy, policymaking, implementation of activities, and/or joint funding to directly respond to education crises. For example, the Global Partnership for Education (GPE), Global Business Coalition for Education, the Global Partners Project, and others each support initiatives directed at improving educational (Menashy & Zeena, 2023).

## METHOD

The method of implementing activities or solving the problems offered is formulated into three stages, namely the preparation, implementation and evaluation stages and feedback. This activity was attended by teachers who teach at Davao School Philippines, the participants total 7, there are 4 teachers male and 3 female teachers, teaching time 7-28 years, Teaching classes of elementary, junior high, and senior high school, Teaching of Civic Education, Art and Cultural, Science, Mathematics, Indonesian, Elementary and Social Studies Indonesian, Geography, Informatics, IT, History, Biology, and Christian Education.

**The preparation stage** includes information dissemination activities to the target audience, namely teachers from several SID Junior High Schools / High Schools about the implementation of this PKM activity, duplication and provision of workshop modules, preparation of tools and materials needed for the workshop for participants in complete and in sufficient quantities. In the preparation stage, workshop evaluation tools and instruments needed to record data during the implementation of activities were also compiled.

**The implementation phase** includes the implementation of workshops that are planned to be carried out on SID junior and senior high school teachers. The number of participants involved was 7 teachers from various school levels at SID. At the beginning of the activity, participants will get adequate information about concepts related to the importance of argumentation skills through collaborative activities in learning. In this activity, an explanation of the concept of argumentative-collaborative skills was carried out by the activity implementation team and then the workshop participants carried out the practice of developing tools to train students' argumentation skills and practice the preparation and use of assessment instruments for students' argumentation skills trained. Thus, in this activity, various methods are used, namely 1) presentations to convey information about the importance of the concept of argumentative-collaborative skills in learning; 2) demonstrations are carried out to provide examples of the preparation of assessment instruments and their use in classroom learning; 3) Practice of preparing tools and instruments by workshop participants to train teachers' skills to improve.

**The evaluation stage** is carried out at several stages of activity, namely the evaluation of the product questions produced by the teachers participating in the implementation of this PKM activity. Immediate feedback is provided upon completion of the evaluation. The feedback is in the form of input for the improvement of the assessment devices and instruments used, the overall learning steps in which there is a student learning assessment component. Peer learning evaluation is carried out in the last part of the workshop material.

**At the end**, the workshop participants were given the test by App Quiziz about concepts related to argumentation skills. Performance tests for the creation and use of instruments assessing the ability of argumentation trained. The answers on the evaluation sheet during the test are data that can be used to determine the ability of workshop participants to absorb related workshop material the concept of argumentation skills. The results of the performance tests of the workshop participants provide an overview of the skills of the workshop participants in compiling and using the instruments trained. The questionnaire filled out by the participants in the last part of the activity to find out the response of workshop participants to PKM activities. Throughout the process of implementing activities, the necessary data collection is carried out.

## RESULTS AND DISCUSSION

The workshop on preparing argumentative questions to train HOTS thinking for Indonesian school teachers in Davao Philippines, will be held online on June 27, 2023. The activity was attended by Indonesian Davao Filipino school teachers from various types and various subjects has been carried out well.

The workshop equipment prepared for participants includes a collection of material in the form of material on argumentation skills and argumentation problem development exercise sheets. This workshop activity provides opportunities for participating teachers to develop argumentation questions as a way to train HOTS thinking in students. Participants were given one week to develop argumentation-based questions to be uploaded on a specially prepared GC platform. Socialization of activities to target audiences is carried out openly through social media Figure 1.

Workshop activities were carried out online and obtained by participants who participated were 20 participants, but those who attended and followed to completion were seven teachers who had filled in the registration link, followed the workshop material, did assignments and collected assignments on the GC, received input and were revised by the PKM assistance team and conducted questions and answers in the follow-up activities on the GC to completion. This program is using a learning approach 4.0 that applies the digital era learning activities, (Haleem et al., 2022; Singh et al., 2021) and teachers to be able to do learning is not limited space, interactive discussion (Haouas & Bouakaz, 2018). Training materials and introduction to argumentation learning concepts through online or using learning media as problem solvers (Sudiran & Adityo, 2023).

Figure 1. PKM implementation flyer packaged in online workshop

### Extracting Preliminary Information related to Argumentation Skills

Workshop activities have been carried out with speakers from lecturers majoring in biology and biology education who are competent in their fields, material delivered related to high-level thinking skills, argumentation skills material, material about STEM, material about examples of argumentation problems in Biology learning that can be developed to train students to think higher-order. The following is a Figure 3 and Figure 4 of the Davao School Joint Workshop in the Philippines.

**KETERAMPILAN BERARGUMENTASI**

Argumentasi merupakan cara mengemukakan pendapat dengan rasional untuk meyakinkan pendapatnya ke orang lain. Alat untuk meyakinkan pendapat tersebut berupa bukti-bukti yang dapat diterima oleh pembaca sebagai pendukung dari kesimpulan yang benar. Bukti-bukti itu terdapat dalam suatu pernyataan, yaitu induksi dan deduksi (Kiry, 2004).

Argumentasi selalu dalam kerangka penalaran karena argumen memerlukan pada penalaran dan penyusunan judgement tentang suatu keputusan melalui pendekatan yang berupa alir-aliran. Argumentasi merupakan konsep yang melibatkan argumentasi Fawcett dan Ross (1992). Setiap tindakan menggunakan pendapat atau bangunan selalu terdapat beberapa elemen penting (Toulmin, 2003) yaitu:

- **Argumentasi selalu terdandung klaim (claim) / C.** Klaim itu berupa kesimpulan atau pernyataan yang sangat dianggap dan diyakini kebenarannya oleh penulis. Klaim tersebut menjadi sentral dalam teks. Di dalam sebuah proses argumentasi, baik itu maupun tulis, klaim akan selalu dipertika dan dipertanyakan oleh penulis atau pembaca.
- **Argumentasi selalu terdandung Data (D)** Upaya memperjelas dan memperkembangkan klaim ini akan berhasil apabila didukung oleh data (D) atau landasan yang berupa bukti untuk memperkuat klaim.
- **Argumentasi dapat mengandung jaminan (W).** Jaminan yang ada tidak cukup untuk mendukung klaim, dapat dihasilkan jaminan atau **warrant (W)**. Warrant merupakan pernyataan yang menghubungkan sebuah klaim dengan data. Meskipun dengan hal-hal lain, data, dan argumen sebuah argumen telah dapat dikatakan benar-benar dengan

Figure 3. Argumentation skills material for workshop participants



Figure 4. Workshop online with Teachers DAVAO School

The measurement of participants' initial and final understanding was carried out simply through questions and answers. The PKM team provides a simple understanding of argumentation thinking and HOTS. In recent years, regulation of learning, which involves self-, co-, and socially shared regulations (Ramirez-Montoya et al., 2023).

In this initial information extracting process, participants respond well by asking questions and ideas about phenomena around students and schools that have the potential to be a stimulus to train HOTS thinking and compile all scientific arguments (Toulmins, 2006). The results are in the form of argumentation questions developed by participants. The arguments which we put forward, and the steps which occur in them, will be correspondingly various: depending on the logical types of the facts adduced and of the conclusions drawn from them, the steps we take—the transitions of logical type—will be different (Setiyaningsih et al., 2023). This program one of the stages to anticipate the developments in the era of globalization, it is necessary to improve the quality of education in Indonesia (Rizqi et al., 2020).

### Workshop participants' response

Based on the results of this initial information, it was used to see the argumentation skills of participants from SID. These results are discussed based on participant response diagrams. Participants' responses showed 100% pleasure participating in the argumentation skills development workshop as shown in Figure 5.

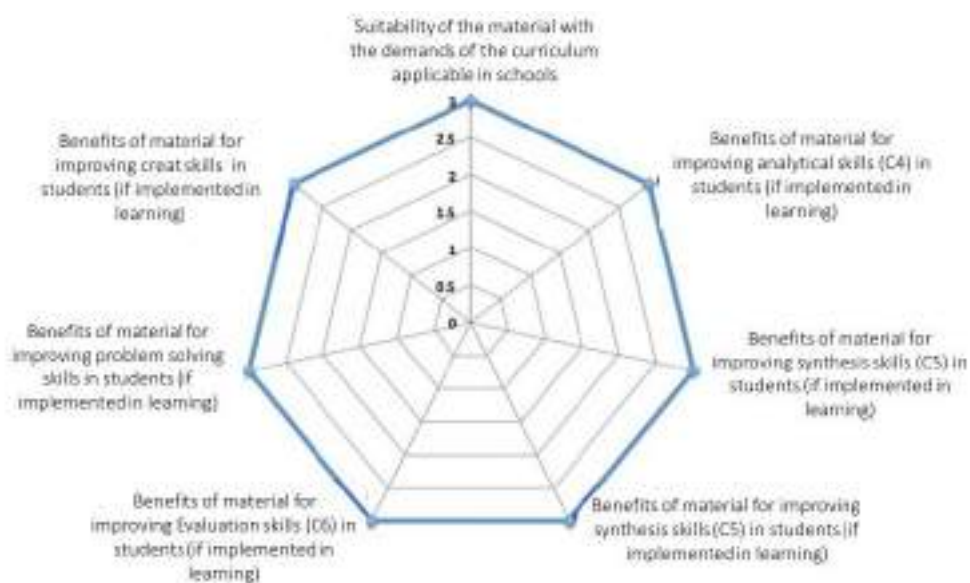


Figure 5. Trainee responses to higher-order thinking skills (HOTS) material; Description 3= good, 2= sufficient, 1= less.

Findings in Figure 5 show that the results based on the GC platform to answer the needs of the remote and difficult Indonesian teacher service community from Indonesia can answer researchers' questions, this is in line with the results of service reflection that is aligned with critical thinking reflection for online community service. (Wahyuni, 2023). The service program can also be able to obtain information from participants through workshops on how they carry out the teaching and learning process in class about HOTS questions (Sudiran, S., & Adityo, A.2023). Argumentation activities can be developed through the PKM program (Permana. et al., 2023).

Teachers at Davao schools also hope to practice the process of teaching and learning activities collaboratively in the classroom and apply HOTS questions such as STEM-shaped questions, argumentative, from the results of workshop activities. Teachers' skills to promote constructive and active learning can affect meaningful learning for their students (Apriono, 2013). This is in line with the results of research on argumentative that every researcher can use the argumentation model well as a tool to analyze a form of argumentation (Widhi et al., 2021).

Through this workshop, STEM-related materials are also presented to strengthen the concept of thinking, argumentation, and participants' opinions or responses can be netted with profiles as shown in Figure 6.

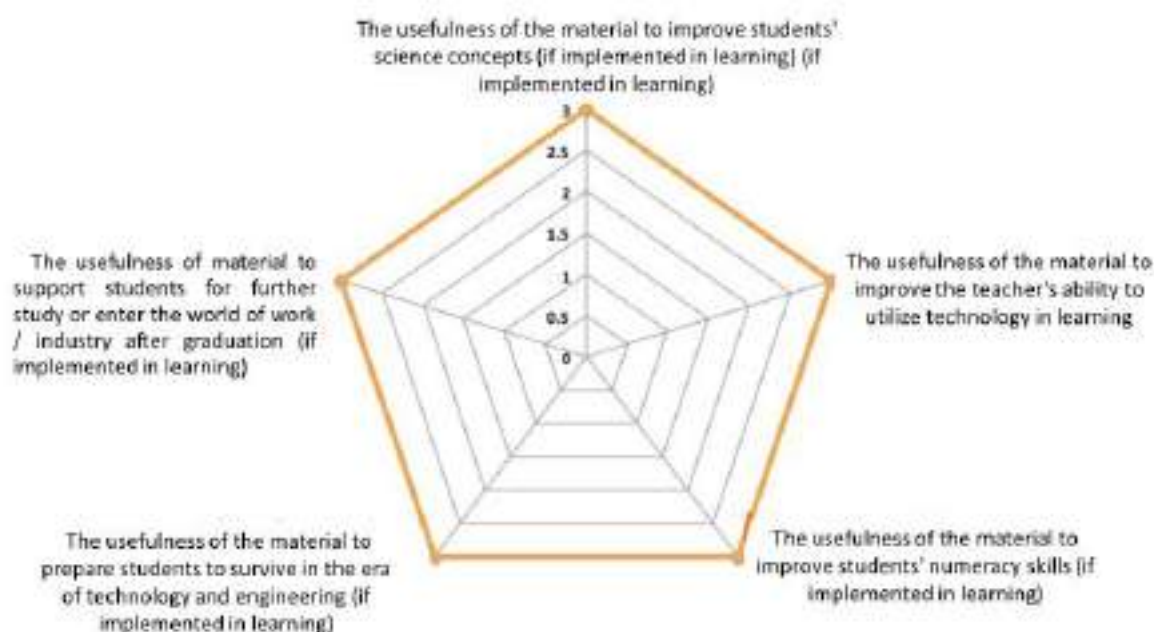


Figure 6. Trainees' responses to STEM (Science, Technology, Engineering, Mathematics) approach material; Description 3= good, 2= sufficient, 1= less.

Based on the aspects obtained based on Figure 6 has given very good results because each component provides an overview of the usefulness of workshop activities. Every critical thinking learning that utilizes technology is very important to be developed by teachers in order to keep up with the times. Following the innovations of technology to adapt to the rapidly, with sufficient knowledge, it is also crucial that they are equipped with the competencies, to enhance students' critical thinking skills and problem solving (Tasgin & Ciqdem, 2023). Many of the people responsible for these innovations were only slightly educated and/or were in some type of apprenticeship. Many of the people responsible for these innovations were only slightly educated and/or were in some type of apprenticeship. Technology Education teachers may use educational technology to deliver lessons and for assessment (White, 2014).

Learning that supports critical thinking skills is through investigation. The investigation focuses on two primary contexts, the most popular teaching and learning instructional methods and by implementation of integrated STEM teaching approach (Mughtar & Lin. 2023). Other studies also state that by learning STEM indicators in teaching materials for students can train BioEntrepreneurship skills to support SDGs in advanced learning, teachers can develop these indicators (Makhmudi et al., 2020).

Findings in Figure 7 show that during the workshop activities that have been carried out online, participants also filled out questionnaires which were distributed through G. Form. The selection of participants' responses on the implementation of PKM is divided into materials; practice and motivation in carrying out entrepreneurial activities.

The components in this instrument can be used as an aspect to assess the opinions of workshop participants, it is hope that in accordance with the purpose of the argumentation strategy is clarify and improve ideas, so that can make decisions appropriately and good. Technique to assess, classify, and show the quality or level or argumentation from students (Widhi et al., 2021).



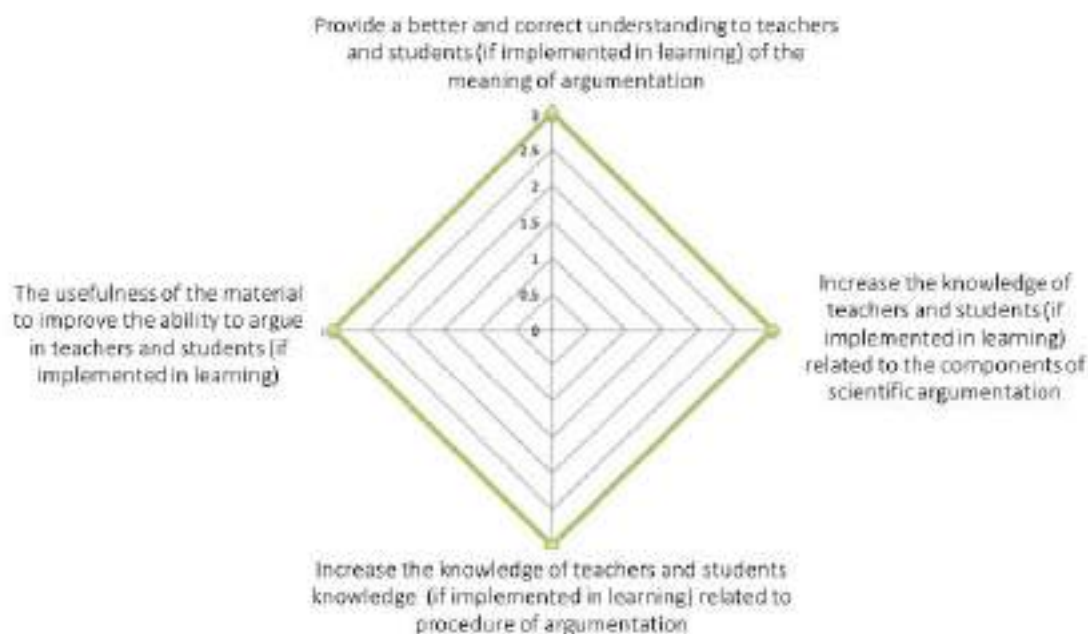


Figure 7. Trainees' responses to argumentative thinking material; Description 3= good, 2= sufficient, 1= less

The participants were also given a questionnaire at the end of the activity to see the response of the workshop activities which can be seen in Table 1.

Table 1. Response of Training Participants in Preparation of Argumentative Questions to Train HOTS Thinking in Indonesian School Teachers Davao Philippines Table 1.

No	Aspects	Average Score
<b>A Argumentation Question Development Workshop</b>		
1	Improve argumentative problem-making skills	3
2	Gain insight into variations / types of argumentative questions	3
3	Improve the ability to make argumentation questions according to student conditions at school	3
<b>B Resource Person's Ability</b>		
1	Mastery of the material presented	3
2	Clarity of articulation and expression	3
3	Communicative choice of words/sentences	3
4	Hospitality	3
5	Empathy	3
6	Openness	3
7	Responsive	3
<b>C Implementation techniques/sarara/infrastructure</b>		
1	Internet connection	3
2	Supporting modules/files	3
3	Sound clarity	3
4	Slide clarity	3
5	Lighting	3

Based on Table 1, it can be seen that 100% of participants gave a positive response to the activities carried out. The input given by the participants was intensive assistance to teachers to compile argumentation questions aimed at compiling question banks for each subject at each school level.

Based on the response questionnaire that has been filled out by respondents, it can be seen that participants give positive responses to the activities that have been followed. Positive comments have also been given by participants

(Table 1). Based on three indicators, it can be seen that the average reaction of participants to the online workshop material averaged a score of 3 with a good predicate.

Collaborative learning activities with argumentative models show that participants' responses to argumentative material are good so that good understanding of material concepts can be measured and can be analyzed through Tolmins' argumentation model (Widhi et al., 2021).

### Results of Argumentative Question development by participants

The evaluation stage, after attending the workshop on preparing argumentative questions, participants together tried to develop questions according to their subjects and education levels and the results were reported through Google Classroom, so that lecturers could provide comments and input to improve the question products that had been prepared. Students' perceptions of argumentation were based on knowledge, classroom activities, understanding, nature of science, actions by teachers and students, and classroom management (Kaya et al., 2010)

Based on the results of the workshop, participants can make argumentation questions that are collected, reviewed and assessed by accompanying lecturers. This is in line with previous research that learning based on Toulmin's Argumentation Pattern has advantages, including; 1) affect the ability of argumentation affect, 2) increase the strengthening and acceleration of understanding of concepts, 3) build better argumentation patterns, improve the quality of argumentation, and 4) create creative and innovative material development in learning. Therefore, the development of collaboration with the discussion learning that we do conducting, providing problem-based learning material, argumentation, STEM, and HOTS concepts can increase participants' knowledge in developing argumentative problems. Of course, it will be able to be used in classroom learning.

The end of this activity provides benefits that have a direct impact on participants. The novelty of this training includes: 1} Other maple teachers besides biology succeeded in developing argumentative questions, 2) meaning that these competencies can be learned across maples. For example, Indonesian maple teachers succeeded in compiling good argumentative questions, 2) Argumentative questions allow HOTS to be trained and mastered by participants, and 3} Of these 2 things mean that HOTS and argumentative thinking are general thinking logic, and can be trained without material content limits.

This activity is also obtained there are those skills that lend themselves to be possibly learned within the instructional/training cum community framework, for example, collaboration and leadership within a particular practice (Lee & Hung, 2012).

### CONCLUSION

Based on the response questionnaire that has been filled out by respondents, it can be seen that teachers at DAVAO schools in the Philippines gave a positive response to the activities that have been carried out. This result is seen based on three indicators; it can be seen that the average response of participants to the online workshop material averaged a score of 3 with a good predicate.

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### REFERENCES

- Apriono, D. (2013). Pembelajaran kolaboratif suatu landasan membangun kebersamaan dan keterampilan kerjasama. *Diklus, Jurnal Pendidikan Luar Sekolah*, 17(1), 292-304.  
<https://journal.uny.ac.id/index.php/diklus/article/view/2897>
- Burns, M., Pierson, E., & Reddy, S. (2014). Working together: How teachers teach and students learn in collaborative learning environments. *International Journal of Instructio*, 7(1), 17-32. <https://eric.ed.gov/?id=EJ1085240>
- White, D. W. (2014). What is STEM education and why is it important? *Florida Association of Teacher Educators Journal*, 1(14), 1-9. <http://www.fate1.org/journals/2014/white.pdf>
- Direktorat Jenderal Pendidikan Anak Usia Dini. (2020, Januari). *Data pokok pendidikan*. Retrieved from <https://dapo.kemdikbud.go.id/sekolah/D0CF918A7EA7150AD02F>.
- Driver, R., Newton, P., & Osborne, J. (2000). Establishing the norms of scientific argumentation in classrooms. *Science Education*, 84(3), 287-312. doi:<https://doi.org/10.1002/>

- Haleem, A., Javaid, M., Qadri, M. A., & Suman, R. (2022). Understanding the role of digital technologies in education: A review. *Sustainable Operations and Computers*, 3(1), 275-285. doi:<https://doi.org/10.1016/j.susoc.2022.05.004>
- Haouas, T., & Bouakaz, A. (2018). *Students' perceptions and attitudes towards the use of social media in enhancing English Language learning*. (U. O. Baudiaf-M'sila, Ed.) Retrieved from The case of second year LMD students at M'sila University department of English: <http://despace.univ-msila.dz:8080/xmlui/bitstream/handle/123456789/7721/2018-005.pdf?sequence=1&isAllowed=y>
- Kaya, E., Erduran, S., & Cetin, P. S. (2010). High school students' perceptions of argumentation. *Procedia Social and Behavioral Sciences*, 2(2), 3971–3975. <https://doi.org/10.1016/j.sbspro.2010.03.625>
- Lee, S. S., & Hung, D. (2012). Is there an instructional framework for 21st century learning? *Creative Education. Science Research*, 3(4), 461-470. <https://doi.org/10.4236/ce.2012.34071>
- Menashy, F., & Zeena, Z. (2023). Partnerships for education in emergencies: The intersecting promises and challenges of SDG 4 and SDG 17. *International Journal of Educational Development*, 103, 1-4. <https://doi.org/10.1016/j.ijedudev.2023.102934>
- Muchtar, A. B., & Lin, D. (2023). Integrated STEM education in Indonesia: What do science. *Jurnal Pendidikan Sains Indonesia*, 12(1), 232-246. <https://doi.org/10.24815/jpsi.v12i1.35588>
- Permana, T. I., Fatmawati, D., Nuryady, M. M., Fahlevy, I. R., & Ardiansyah, I. (2023). Scientific writing: A way to improve students' information literacy and reasoning ability. *Journal of Community Service and Empowerment*, 4(2), 319–325. <https://doi.org/10.22219/jcse.v4i2.25167>
- Ramirez-Montoya, Castillo-Martínez, I. M., Sanabria-Z, J., & Miranda, J. (2023). Complex thinking in the framework of education 4.0 and open innovation—A systematic literature review. *Journal Open Innovation: Technology, Market, and Complexity*, 8(4), 1-15. <https://doi.org/10.3390/joitmc8010004>
- Rizqi, R., Prabowo, P., & Kirana, T. (2020). Development of OCIPSE learning model to increase students' scientific creativity in natural science learning. *IJORER: International Journal of Recent Educational Research*, 1(1), 1-18. <https://doi.org/10.46245/ijorer.v1i1.10>
- SID. (2023). *Sekolah Indonesia Davao*. SID. Davao City: <https://sid.sch.id/tentang-sid/>. doi:<https://sid.sch.id/tentang-sid/>
- Singh, J., Steele, K., & Singh, L. (2021). Combining the best of online and face-to-face learning: Hybrid and Blended Learning Approach FOR COVID-19, post vaccine, & post-pandemic world. *Journal of Educational Technology*, 50(2), 140-171. doi:<https://doi.org/10.1177/00472395211047865>
- Sudiran, S., & Adityo, A. (2023). Teachers assistance of Google for education in supporting education 4.0. *Journal of Community Service and Empowerment*, 4(2), 220–228. <https://doi.org/10.22219/jcse/v4i2.26181>
- Tasgin, A. & Cigdem, D. (2023). The mediating role of critical thinking dispositions between secondary school student's self-efficacy and problem-solving skills. *Thinking Skills and Creativity*, 5, 1-11. doi:<https://doi.org/10.1016/j.tsc.2023.101400>
- Toulmin, S. E. (2006). Reasoning in theory and practice. In *Arguing on the Toulmin; New Essays in Argument Analysis and Evaluation* (Vol. 10 Series Editors). (B. V. David Hitchcock, Ed.) Netherlands: Springer.
- Vijayanti, V., Cari, C., Sunarno, W., & Prasetyo, Z. K. (2016). Pemberdayaan keterampilan argumentasi mendorong pemahaman konsep siswa. *Jurnal Penelitian Pembelajaran Fisika*, 7(1), 43-48. doi:<https://doi.org/10.26877/JP2F.V7I1.1152>
- Widhi, W., Wulansari, N. I., Admoko, S., Hakim, A. R., & Solahuddin, M. I. (2021). Analisis keterampilan argumentasi ilmiah peserta didik pada model pembelajaran berbasis Toulmin's Argumentation Pattern (TAP) dalam memahami konsep fisika dengan metode library research. *PENDIPA Journal of Science Education*, 5(1), 79-91. doi:<https://doi.org/10.33369/pendipa.5.1.79-91>
- Wahyuni, A. S. (2023). Delivering online community service from community perspective: A critical review. *Journal of Community Service and Empowerment*, 4(3), 486-491. <https://doi.org/10.22219/jcse.v4i3.27903>



# Empowering the community of Bokesan village through production of So Ikie (Nila-algae fish sausage)

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ARTICLE INFO	ABSTRACT
<p><b>Article history</b>            Received: 2023-12-07            Revised: 2024-01-11            Accepted: 2024-01-20            Published: 2024-02-05</p> <p><b>Keywords</b>            Algae            Nutripreneurship            Oreochromis niloticus            Sausage</p>	<p><i>Fish and algae (seaweed) are abundant commodities in Yogyakarta. The potential for high fiber sausages which have advantages needs to be socialized to the public. The aim of this activity is outreach including education and training for housewives in the hamlet of Bokesan, Sindumartani, Ngemplak, Sleman, Yogyakarta. This area already has local potential for tilapia cultivation. Housewives in Bokesan hamlet are members of the Mina Mandiri business group. The processed tilapia fish product that has been developed is tilapia fish chips or crispy tilapia. With the abundant availability of tilapia in the area, the So Ikie product (tilapia-algae fish sausage) will be developed. The Mina Mandiri business group needs insight into healthy food, So Ikie high fiber sausage products, So Ikie processing skills, packaging and labeling to increase Nutripreneurship empowerment. Nutripreneurship empowerment is carried out by providing education and training. The education provided includes material about healthy food, healthy lifestyles, and Nutripreneurship through diversification of tilapia-based preparations. The training provided is the practice of processing tilapia-algae fish sausage products as a diversification of tilapia-based products. The participants took part in community service activities with enthusiasm and enthusiasm. Empowerment of Nutripreneurship partners can be seen in increasing insight, skills, motivation and commitment to carrying out Nutripreneurship. This is demonstrated by the results of pre and posttest assessments, the quality of practical products, evaluation of activity implementation, and the implementation of follow-up programs independently by partners. The independent follow-up program implemented includes production activities resulting from training.</i></p>
<p><b>Kata Kunci</b>            Nutripreneurship            Oreochromis niloticus            Rumput laut            Sosis</p>	<p><b>Pemberdayaan masyarakat desa Bokesan melalui produksi So Ikie (Sosis ikan nila-algae).</b> Ikan dan algae (rumpun laut) merupakan komoditi yang melimpah di Yogyakarta. Potensi sosis tinggi serat yang memiliki keunggulan perlu disosialisasikan kepada masyarakat. Untuk tujuan kegiatan ini adalah sosialisasi mencakup edukasi dan pelatihan bagi para ibu rumah tangga di dusun Bokesan, Sindumartani, Ngemplak, Sleman, Yogyakarta. Wilayah tersebut telah memiliki potensi lokal budidaya ikan nila. Ibu-ibu rumah tangga di dusun Bokesan tergabung dalam kelompok usaha Mina Mandiri. Produk olahan ikan nila yang sudah dikembangkan adalah keripik ikan nila atau nila crispy. Dengan ketersediaan ikan nila yang melimpah di kawasan tersebut akan dikembangkan produk So Ikie (sosis ikan nila-algae). Kelompok usaha Mina Mandiri membutuhkan wawasan tentang makanan sehat, produk sosis tinggi serat So Ikie, keterampilan pengolahan So Ikie, pengemasan dan pelabelan untuk meningkatkan pemberdayaan Nutripreneurship. Pemberdayaan nutripreneurship dilaksanakan dengan memberikan pendidikan dan pelatihan. Pendidikan yang diberikan mencakup materi tentang makanan sehat, pola hidup sehat, dan Nutripreneurship melalui diversifikasi olahan berbasis ikan nila. Pelatihan yang diberikan adalah praktik pengolahan produk pembuatan sosis ikan nila-algae sebagai diversifikasi produk berbasis ikan nila. Para peserta mengikuti kegiatan pengabdian kepada masyarakat dengan antusias dan penuh semangat. Pemberdayaan Nutripreneurship mitra tampak pada peningkatan wawasan, keterampilan, motivasi dan komitmen untuk menjalankan Nutripreneurship. Hal ini ditunjukkan dengan hasil penilaian pre dan post test, kualitas produk hasil praktik, evaluasi pelaksanaan kegiatan, dan dilaksanakannya program tindak lanjut secara mandiri oleh mitra. Program tindak lanjut secara mandiri yang dilaksanakan mencakup kegiatan produksi produk hasil pelatihan.</p>

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## INTRODUCTION

Fish and algae are abundant commodities in Yogyakarta. The main handling and trade of fish and algae commodities in Yogyakarta is in the form of fresh fish and algae, dried algae and preserved fish products in the form of dried fish and salted fish (Afriwanti, 2018). The abundant production of fish and algae needs to be followed by the development of the handling of these commodities, among others, by looking for opportunities and innovations of new food products that are healthy, can be mass-produced, popular and have high economic value so that in addition to providing healthy food it also has the potential as a means of developing community Nutripreneurship (Astawan et al., 2018; Goswami, et al., 2015; Ansari, et al., 2020; Ullman & Grimm, 2020).

Sausage is one of the most popular food ingredients and is widely consumed by the public. In general, sausage is made from beef or chicken as the main ingredient and additional ingredients such as fillers and emulsifiers (Abrori, 2017). Sausage is a source of protein and fat nutritional elements. One of the innovative processed products based on fish and algae that has the potential to be produced is sausage. The use of fish and algae as the main ingredients of sausage will produce high fiber sausage because algae is rich in fiber (Koapaha, 2019; Wang et al., 2023; Francezon, et al., 2021; Ścieszka & Klewicka, 2018). In addition to being a source of fiber, algae that can form gels can play a role in producing sausages with good texture, without the need for additional fillers and emulsifiers (Cahyani, 2019). Thus, the production of fish and algae-based sausage has advantages in nutritional aspects because other than containing protein, fat, vitamins and minerals, it is also a source of fiber. This sausage product is also more economical because it does not require other additives such as fillers and emulsifiers (Lawrie, 2003; Espinosa-Ramírez, 2023; Gullón, 2020).

Nowadays, people's awareness of healthy food consumption is growing. Sausage products are very popular and widely consumed. Compared to existing sausage products and similar sausage products, high-fiber sausage products have advantages, among others, in terms of a more complete and balanced nutritional composition. It is expected that this high-fiber sausage product can be widely accepted and consumed by the community so as to support the provision of healthy food, improve the quality of community nutrition, and increase community Entrepreneurship. This community service activity is in collaboration with productive partner Mina Mandiri Business Group. Mina Mandiri Business Group is a business group consisting of housewives in Bokesan Hamlet, Sindumartani Village, Ngemplak, Sleman, Yogyakarta. The number of active members is 20-30 people.

The community in Bokesan Hamlet has a tilapia farming business. Tilapia cultivation is carried out in ponds on farmland or in residential yards. The results of tilapia cultivation are mostly only traded in the form of tilapia seeds and some are processed by the Mina Mandiri business group into crispy tilapia products. The lack of diversification of processed products causes the cultivation products traded to be limited to tilapia seeds. The Mina Mandiri Business Group carries out the crispy tilapia production process every two weeks with a production capacity of around 15-20kg. Crispy tilapia products are traded in thick plastic packaging with a weight of 100gr. Products that have been packaged are then traded directly and through social media and deposited in shops in the Sleman Regency and surrounding areas.

This community service program is undertaken as an act of implementing the tri dharma of higher education, particularly in the aspect of community empowerment. For students involved in this activity can get learning about *Nutripreneurship* including handling, processing, packaging, labeling and marketing So Ikie products based on local potential. Community Service activities in Bokesan Hamlet, Sindumartani Village, Ngemplak, Sleman, Yogyakarta support the implementation of Key Performance Indicators (KPI) 5 through increasing the number of publications of PKM activities carried out by lecturers and KPI 6 through increasing the number of partner collaborations and PKM activities carried out by lecturers.

By implementing this program, nila-algae fish sausage can serve as a healthy food which supports to improve family nutritional quality and it is a potential product to empower community with *Nutripreneurship*. This is in accordance with the needs of the community in Bokesan, Sindumartani village, Ngemplak, Sleman. At that location the community has developed a business venture in catfish and tilapia cultivation. Tilapia is cultivated in addition to using the rice field area also by utilizing the yard land around the house. In Bokesan a business group of housewives has been formed, namely the Mina Mandiri business group. The processed fish products that have been developed are tilapia chips or crispy tilapia. With the availability of fish raw materials, especially tilapia, which is abundant in the area, the Mina Mandiri group will further develop diversification of processed tilapia products. The potential product to be developed is a healthy high-fiber sausage based on tilapia and algae. Housewives who are members of the Mina Mandiri business group need insight into healthy high-fiber sausage food products based on tilapia and seaweed, sausage processing skills, and packaging and labeling to increase Nutripreneurship empowerment through the Mina Mandiri business group. This program is congruent to some of Sustainable Development Goals (SDGs) programs, they are good health and well-being, decent work and economic growth, and responsible consumption and production (sdgs.un.org).

Thus, these housewives can improve food security, economic security, and family health through the provision of nutritious food intake by utilizing local potential and accompanied by a healthy lifestyle. In addition, housewives in Bokesan, Sindumartani village, Ngemplak, Sleman can also further improve Nutripreneurship through increased development of processed products in the Mina Mandiri business group.



## METHOD

The implementation time of this activity is in October 2023. The stages of implementing community service activities are as follows.

### Preparation

This stage is the internal coordination stage of the team implementing community service activities. The preparation stage includes coordination in terms of material and schedule of activities, preparation of materials, equipment and optimization of So Ikie sausage products for training. Posters, videos, and booklets of So Ikie sausage products were also prepared.

### Education

At the stage of educational activities, theoretical material about healthy food, healthy lifestyles, and *Nutripreneurship* through tilapia-based processed diversification includes the concept of product development and tilapia-based food processing technology. Before the delivery of the material, participants took a pre-test.

### Food processing training

#### a. Preparation

The preparation stage was carried out by the implementation team including the preparation of standard recipes, practical materials, equipment and product samples made with standard recipes as a benchmark for the quality of the products to be made by the trainees. The main ingredient for making this typical snack is tilapia fish, which is a leading commodity in Bokesan, Sindumartani village, Ngemplak, Sleman. Another main ingredient used is seaweed, which is commonly found in traditional markets and modern supermarkets.

#### b. Food processing practice

In food processing practices, participants were divided into 5 groups, each group consisting of 3 participants. Each group practiced So Ikie sausage processing with assistance from community service tips and students. The main ingredient of tilapia fish was purchased from the tilapia fish farming pond in Bokesan, Sindumartani village, Ngemplak, Sleman, sausage casings were purchased from online stores and other ingredients were purchased at traditional markets. Materials were prepared by the community service implementation team. Equipment was prepared jointly by the community service implementation team and partners. At this stage, packaging and labeling for So Ikie sausage products were also prepared.

### Production of So Ikie sausage

At the So Ikie sausage production stage, the groups of participants directly carried out the processing and packaging of So Ikie sausages independently, without further assistance. Participants made creations and modifications in terms of the size of So Ikie sausages made according to participants' estimates to attract consumers.

### Evaluation of activity implementation

The activity evaluation stage is carried out in the form of participants submitting an evaluation verbally or by working on the Post Test and filling out the Activity Implementation Evaluation form.

### Follow-up activities

Follow-up activities include the delivery of equipment assistance to be used by partners to carry out training independently to strengthen mastery of processing and packaging skills for So Ikie sausage products.

## RESULTS AND DISCUSSION

An overview of the problems and solutions of partners, indicators and types of outputs of this activity is listed below in Table 1.

Table 1. Types of outputs from partners' problems and solutions

Partner Issues	1) Mina Mandiri business group women need an increased understanding of nutripreneurship, the potential of tilapia, algae, healthy food, So Ikie products and healthy lifestyles. 2) Mina Mandiri business group women do not have diversified processed products based on tilapia which is a local potential commodity. 3) Mina Mandiri business group women do not have skills in making tilapia-algae sausage as a diversification of tilapia-based products.
Solution	1) Providing education for the women of the Mina Mandiri business group about nutripreneurship, the potential of tilapia, algae, healthy food, So Ikie products and healthy lifestyles.

	2) Developing new products / diversification of tilapia-based processed products in the form of tilapia-algae sausage products (So Ikie) 3) Training on processing sausage products based on local potential commodities of tilapia-algae (So Ikie) as a tilapia-based deversification product
Indicator	1) Mina Mandiri business group women have an understanding of nutriprenurship, the potential of tilapia, algae, healthy food, So Ikie products and healthy lifestyles. 2) Mina Mandiri business group women have diversified tilapia-based processed products in the form of tilapia-algae sausage products (So Ikie). 3) Mina Mandiri business group women have skills in making tilapia-algae sausage (So Ikie).
Outputs	1) Increased knowledge of Mina Mandiri business group women about nutriprenurship, the potential of tilapia, algae, healthy food, So Ikie products and healthy lifestyles 2) Development of tilapia-algae sausage product (So Ikie) 3) Improving the skills of the women of Mina Mandiri business group in making tilapia-algae sausage (So Ikie)

Results of this community service are presented as follows.

### Preparation

At the preparation stage, data collection of activity participants was carried out, namely 15 women from the Mina Mandiri business group. The implementation team together with partners coordinated to prepare schedules, materials, equipment and supporting infrastructure (Figure 1 dan Figure 2).



Figure 1. So Ikie Sausage Product Poster



Figure 2. So Ikie Sausage Product Booklet

### Education

Educational activities were held at the meeting hall of Bokesan, Sindumartani village, Ngemplak, Sleman and attended by all participants. Educational materials include *Nutriprenurship*, tilapia potential, algae, healthy food, So Ikie products and healthy lifestyles. The implementation team took turns delivering educational material interactively and accompanied by the presentation of material in the form of PPT. To find out the students' understanding of the material provided, before the delivery of the material, a Pre-Test was conducted. Educational activities are shown in the Figure 3.



Figure 3. Educational Activities

### So Ikie sausage processing training

At the food processing training stage, the implementation team coordinated with partners to prepare materials, equipment and training venues. The training participants were divided into 5 groups with 3 members/group. The implementation team also prepared samples of So Ikie sausage products to be made.



During the training, each group of participants practiced So Ikie sausage processing. The practice of processing So Ikie sausages can generally be carried out well. The participants were diligent, persistent, and enthusiastic about processing So Ikie sausage products. The quality of the products produced by the participants was mostly good according to the samples or product examples prepared by the implementation team. Some of the So Ikie sausage products made were damaged due to several causes such as improper or too tight sausage ties, filling the sausage casings too full, and lack of control when the sausage was heated/steamed. Practical activities and products as shown in the pictures below.



Figure 4. So Ikie sausage processing practice

#### So Ikie sausage production

In the implementation of the production stage, each group of participants carried out the practice of processing So Ikie sausages independently. The implementation team or students monitored the activities carried out by the participants. The participants seemed diligent, excited, and enthusiastic about carrying out the practice. Learning from experience when carrying out the previous processing practice stage, at the So Ikie sausage production stage which was carried out by each group independently, the quality of the products produced was very satisfying. At this stage, So Ikie sausage product packaging labels were also prepared. At this stage, the calculation of production costs was also carried out to determine the selling price. From the results of the calculation, the selling price is still considered too high, so it needs to be modified in terms of the use of raw materials (tilapia and additional fillers) and the type of sausage casings (from edible film can be replaced using alternative nonedible film casings). so that the selling price is expected to be more affordable. So Ikie sausage products are expected to have a long shelf life of around 2-3 months, hence vacuum packaging and further storage in the freezer. The results of the production process stage activities are presented in the pictures below.



Figure 5. Participants carry out So Ikie sausage production



Figure 6. So Ikie sausage packaging and labeling

#### Evaluation of activity implementation

The evaluation stage is carried out in the form of participants submitting evaluations orally and by doing the Post Test and filling out the Activity Implementation Evaluation form. The results of the verbal evaluation of activities by participants stated that the participants were grateful for the additional insights and skills that had been provided and felt motivated to strengthen the production of So Ikie sausages as a product that could be developed for joint ventures with tilapia chips that had been produced previously. The results of the pre-test and pos-test as well as the evaluation of activities by participants are listed in the Figure 7.

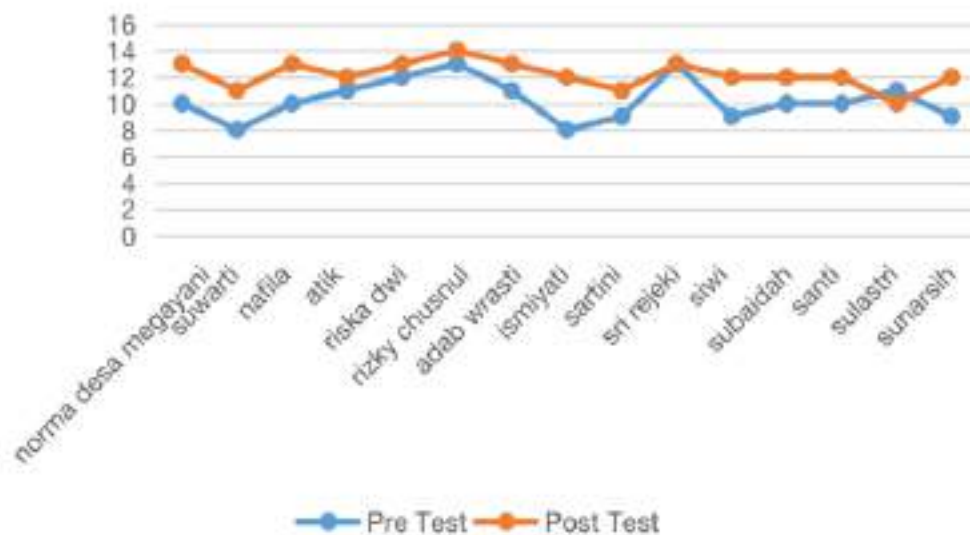


Figure 7. Participants' pretest and post test results

The evaluation results from the participants stated that the implementation of this community service activity was good. However, the weakness is found on weakness is the availability of practical equipment, considering that some practical equipment is not yet available in sufficient quantities for all groups, so it is necessary to take turns in using the equipment. Equipment that needs to be increased in number includes chopper/food processor, stuffer, and vacuum packer. At the end of the activity, the implementation team handed over stimulant practical equipment to partners to support *Nutripreneurship*. The stimulant equipment provided is a chopper/food processor, stuffer, and vacuum packer

which are the main equipment in the So Ikie sausage processing process and based on the evaluation results it is considered that the availability is not sufficient.

### Follow-up of community service activities

At the end of the activity, the implementation team handed over stimulant practical equipment to partners to support *Nutripreneurship*. The stimulant equipment provided is a chopper/food processor, stuffer, and vacuum packer which are the main equipment in the So Ikie sausage processing process and based on the evaluation results it is considered that the availability is not sufficient. Furthermore, the participants will strengthen their product mastery independently to be able to develop the So Ikie sausage production business.

### CONCLUSION

As for the conclusions of this service activity, among others: 1) The education provided is sufficient to provide an understanding of healthy food, healthy lifestyles, and *Nutripreneurship* through diversification of tilapia-based preparations, 2) The participants were able to carry out the product development of tilapia-algae sausage (So Ikie), 3) The participants were skilled in making tilapia-algae sausage (So Ikie), 4) In general, PkM activities have been carried out well.

### ACKNOWLEDGEMENT

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### REFERENCES

- Abrori, F. (2017). Pengaruh proporsi daging ikan dan tepung tapioka terhadap kualitas sosis ikan gabus. fakultas perikanan Universitas Sebelas Maret.
- Afriwanty, M. D. (2018). Mempelajari pengaruh penambahan tepung rumput laut (*kappaphycus alvarezii*) terhadap karakteristik fisik surimi ikan nila (*Oreochromis sp.*). Program Studi Teknologi Hasil Perikanan. Fakultas Perikanan dan Ilmu Kelautan. Institut Pertanian Bogor. Bogor.
- Ansari, F. A., Nasr, M., Guldhe, A., Gupta, S. K., Rawat, I., & Bux, F. (2020). Techno-economic feasibility of algal aquaculture via fish and biodiesel production pathways: A commercial-scale application. *Science of the Total Environment*, 704, 135259.
- Astawan, M; Koswara, S; & Herdiani, F. (2018). Pemanfaatan rumput laut (*euclidean cottonii*) untuk meningkatkan kadar iodium dan serat pangan pada selai dan dodol. *J Tekn. Dan Industri Pangan XV(2)*: 61-69.
- Badan Standardisasi Nasional. (2013). Syarat mutu sosis ikan. *Badan Standardisasi Nasional*. www.bsn.go.id
- Badan Standardisasi Nasional. (2015). Pedoman pengujian sensori pada produk perikanan.
- Cahyani, K. D. (2019). [Skripsi]. Kajian kacang merah sebagai bahan pengikat dan pengisi pada sosis ikan lele. [Skripsi]. Fakultas Pertanian. Universitas Sebelas Maret. Surakarta.
- Diskanlut Sulteng dan LP3L TALINTI. 2017. Grand strategi pengembangan budidaya rumput laut di Propinsi Sulawesi Tengah "Menuju Sulawesi Tengah sebagai Propinsi Rumput Laut Tahun 2011". Laporan Final Dinas Kelautan Dan Perikanan Propinsi Sulawesi Tengah dan LP3L TALINTI.
- Espinosa-Ramírez, J., Mondragón-Portocarrero, A. C., Rodríguez, J. A., Lorenzo, J. M., & Santos, E. M. (2023). Algae as a potential source of protein meat alternatives. *Frontiers in Nutrition*, 10. <https://doi.org/10.3389%2Ffnut.2023.1254300>
- Estiasih, T., & Kgs, A. (2016). Teknologi pengolahan pangan. 2nd ed. Jakarta: Bumi Aksara.
- Eti, F., Dwi, S. W., & Ilalqisny, I. (2014). Studi komunitas rumput laut pada berbagai substrat di perairan Pantai Permisian Kabupaten Cilacap. *Jurnal Scripta Biologica*, (1), 55-60.
- Francezon, N., Tremblay, A., Mouget, J. L., Pasetto, P., & Beaulieu, L. (2021). Algae as a source of natural flavors in innovative foods. *Journal of Agricultural and Food Chemistry*, 69(40), 11753-11772. <https://doi.org/10.1021/acs.jafc.1c04409>
- Goswami, G., Bang, V., & Agarwal, S. (2015). Diverse application of algae. *International Journal of Advanced Research in Science and Engineering*, 4(1), 1102-1109.
- Gullón, B., Gagaoua, M., Barba, F. J., Gullón, P., Zhang, W., & Lorenzo, J. M. (2020). Seaweeds as promising resource of bioactive compounds: Overview of novel extraction strategies and design of tailored meat products. *Trends in Food Science & Technology*, 100, 1-18. <https://doi.org/10.1016/j.tifs.2020.03.039>
- Rismawati, R. (2019). Studi laju pengeringan semi-refined carrageenan (src) yang diproduksi dari rumput laut *euclidean cottonii* dengan metode pemanasan konvensional dan pemanasan OHMIC [skripsi]. Makassar: Fakultas Pertanian, Universitas Hasanuddin. 85-92



- Setyaningsih, D., Apriyantono, A., & Sari, M. P. (2010). Analisis sensori untuk industri pangan dan agro. Bogor: IPB Press.
- Sipahutar, S., Yuliati, H., Taufiq, T., Kristiani, M. G. E., Prabowo, D. H. G., Ramadheka, R. R., Suryanto, M. R., & Pratama, R. B. (2020). The effect of gracilaria powder on the characteristics of nemipterid fish sausage. *IOP Conference Series: Earth and Environmental Science* 404. doi: 10.1088/1755-1315/404/1/012033.
- Kementerian Pendidikan dan Kebudayaan Republik Indonesia. 2013. Pengolahan diversifikasi hasil perikanan. Jakarta: Direktorat Pembinaan Sekolah Menengah Kejuruan.
- Koapaha, T., Langi, T., & Lalujan, L. E. (2019). Penggunaan pati sagu modifikasi fosfat terhadap sifat organoleptik sosis ikan nila (*pangasius hypopthalmus*)
- Kusharto, C. M. (2006). Serat makanan dan peranannya bagi kesehatan. *Jurnal Gizi dan Pangan*, 1(2), 45-54.
- Lawrie, R. A. (2003). Ilmu daging. Press UI, Jakarta. 11.
- Muhammad, F. (2011). Badan Dinas Penyuluhan Perikanan Indonesia. <http://dinaskelautan.danperikanan>
- Purwosari, A. G. (2016). Pengaruh penggunaan jenis dan jumlah bahan pengisi terhadap hasil jadi sosis ikan gabus (*Channa striata*). *E-Journal Boga*, 5(1), 211–228.
- Princestasari, L. D., & Amalia, L. (2015). Formulasi rumput laut gracilaria sp. dalam pembuatan bakso daging sapi tinggi serat dan iodium. *Jurnal Gizi Dan Pangan*, 10(3), 185–96. doi: 10.25182/jgp.2015.10.3
- Ścieszka, S., & Klewicka, E. (2019). Algae in food: A general review. *Critical reviews in food science and nutrition*, 59(21), 3538-3547. <https://doi.org/10.1080/10408398.2018.1496319>
- The 17 goals. Department of Economic and Social Affairs. Sustainable Development. <https://sdgs.un.org/goals>
- Ullmann, J., & Grimm, D. (2021). Algae and their potential for a future bioeconomy, landless food production, and the socio-economic impact of an algae industry. *Organic Agriculture*, 11(2), 261-267.
- Wang, M., Zhou, J., Tavares, J., Pinto, C. A., Saraiva, J. A., Prieto, M. A., Cao, H., Xiao, J., Simal-Gandara, J., & Barba, F. J. (2023). Applications of algae to obtain healthier meat products: A critical review on nutrients, acceptability and quality. *Critical Reviews in Food Science and Nutrition*, 63(26), 8357-8374. <https://doi.org/10.1080/10408398.2022.2054939>
- Winanti, E., Andriani, A., & Nurhatadi, N. (2013). Pengaruh penambahan bit sebagai pewarna alami terhadap karakteristik fisikokimia dan sensori sosis daging sapi. *Jurnal Teknosains Pangan*, 2(4), 18-23.
- Yakhin, L., Wijaya, K., & Santoso, J. (2013). peningkatan kualitas gel sosis ikan lele dengan penambahan tepung gracillaria gigas. *Jurnal Pengolahan Hasil Perikanan Indonesia*, 16(2), 177-182.
- Yaska, Q. I., Yusa, N. M., & Yusasrini, N. L. (2017). Pengaruh rasio tapioka dengan rumput laut gracilaria sp. terhadap karakteristik sosis ikan lemuru. *Jurnal Ilmu Dan Teknologi Pangan*, 6(1), 30-39. <https://ojs.unud.ac.id/index.php/itepa/article/view/28074>



# The effect of teacher empowerment-based course program on teachers' knowledge of Pancasila character on the Indonesia-Malaysia literacy

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ARTICLE INFO	ABSTRACT
<p><b>Article history</b>            Received: 2023-10-16            Revised: 2024-01-11            Accepted: 2024-01-20            Published: 2024-02-05</p> <p><b>Keywords</b>            Course program,            Indonesia-Malaysia Literacy            Pancasila Character            Teacher Empowerment            Teacher Knowledge,</p>	<p><i>The lack of teachers' ability to apply the Pancasila character can contribute to the fading of Pancasila culture abroad, especially for the families of Indonesian Immigrant Workers in Malaysia. This research aims to explore the understanding of the character of Pancasila among parents in the Indonesian-Malaysian literacy context. A quantitative research approach was used with a sample of 80 educators from the Kuala Lumpur Indonesian School and learning centers in Malaysia. The research instrument consists of a questionnaire with 15 items for the Teacher Empowerment Program variable and 14 items for Teacher Knowledge. Data analysis uses simple linear regression with validity, reliability, normality, heteroscedasticity, t test, and coefficient tests, which are processed using SPSS software. The research results found that the training program had a positive effect on teachers' knowledge about the character of Pancasila. The Teacher Empowerment Based Course Program has had a significant impact on teachers' understanding of the Indonesian-Malaysian Literacy Based Pancasila Character. After attending a course based on teacher empowerment, there was a significant increase in teachers' knowledge about the character of Pancasila based on Indonesian-Malaysian language literacy. This teacher empowerment-based course program provides educators with the opportunity to gain knowledge about Indonesian-Malaysian literacy. They can apply this knowledge through innovative and effective teaching methods. Future research could investigate further potential benefits beyond increasing teachers' knowledge after participating in this program.</i></p>
<p><b>Kata Kunci</b>            Karakter pancasila            Literasi Indonesia-Malaysia            Pemberdayaan guru            Pengetahuan guru            Program kursus</p>	<p><b>Pengaruh program kursus berbasis pemberdayaan guru terhadap pengetahuan guru tentang karakter Pancasila pada literasi Indonesia-Malaysia.</b> Kurangnya kemampuan guru dalam menerapkan karakter Pancasila dapat berkontribusi pada memudarnya budaya Pancasila di luar negeri, khususnya bagi keluarga Pekerja Imigran Indonesia di Malaysia. Penelitian ini bertujuan untuk mengeksplorasi pemahaman karakter Pancasila di kalangan orang tua dalam konteks literasi Indonesia-Malaysia. Pendekatan penelitian kuantitatif digunakan dengan sampel 80 orang pendidik dari Sekolah Indonesia Kuala Lumpur dan pusat pembelajaran di Malaysia. Instrumen penelitian terdiri dari angket dengan 15 item variabel Program Pemberdayaan Guru dan 14 item Pengetahuan Guru. Analisis data menggunakan regresi linier sederhana dengan uji validitas, reliabilitas, normalitas, heteroskedastisitas, uji t, dan uji Koefisien, yang diolah menggunakan software SPSS. Hasil penelitian menemukan bahwa program pelatihan berpengaruh positif terhadap pengetahuan guru tentang karakter Pancasila. Program Kursus Berbasis Pemberdayaan Guru memberikan dampak yang signifikan terhadap pemahaman guru terhadap Karakter Pancasila Berbasis Literasi Indonesia-Malaysia. Setelah mengikuti kursus berbasis pemberdayaan guru, terjadi peningkatan yang signifikan pada pengetahuan guru tentang karakter Pancasila berdasarkan literasi bahasa Indonesia-Malaysia. Program kursus berbasis pemberdayaan guru ini memberikan kesempatan kepada para pendidik untuk memperoleh pengetahuan tentang literasi Indonesia-Malaysia. Mereka dapat menerapkan pengetahuan ini melalui metode pengajaran yang inovatif dan efektif.</p>

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## INTRODUCTION

Instilling Pancasila character education is crucial in shaping youngsters who possess exemplary moral and social values (Malau, 2022; Setiyaningsih & Wiryanto, 2022; Susanti & Sukaesih, 2021). Nevertheless, effective implementation of this program relies heavily on the teachers' comprehension and competence to incorporate it into the school's learning process. Notably, Riadin & Permadi (2019) assert that some instructors still face challenges while implementing Pancasila character education in classrooms. This is caused by several factors, such as the lack of adequate training, limited resources, and the curriculum used has not fully supported the integration of Pancasila values (Yafie et al., 2021).

According to (Julaeha, 2019), one of the main reasons for teachers' lack of understanding is the absence of specialized training on Pancasila Character. In addition, resources such as books, literature, and appropriate guidelines are not yet available adequately and evenly (Prasety & Wijaya, 2022). Teachers must be able to master the understanding and link Pancasila character education in the implementation of learning in the classroom (Sulastri et al., 2022), whether it is only based on personal experience, peers, colleagues, or support from schools (Pratama & Noventari, 2018). However, not all schools can provide the same support, so this can hamper efforts to develop a young generation that has strong and sustainable Pancasila values (Rosana et al., 2019).

This lack of understanding of Pancasila character not only impacts teachers domestically, but also Indonesian teachers abroad, such as in Malaysia. Most students from Indonesian Immigrant Worker (PMI) families have lived in Malaysia since childhood, so many of them do not know and understand their culture and region of origin, and some have even forgotten their origin (Rahayuningtyas et al., 2021). The optimal acquisition of Pancasila character values is impeded by the cultural and educational differences experienced by Indonesian students in Malaysia (Yuliatin et al., 2021). Additionally, cultivating Pancasila character education for PMI students in Malaysia proves a challenge due to the scarcity of volunteer teachers who teach in various Malaysian states, far away from Indonesia.

Pancasila forms the core of Indonesia's national values, while literacy plays a crucial role in developing critical and analytical thinking abilities (Jannah & Fahlevi, 2018). Teachers, as change agents in the education system, have a significant responsibility in imparting and practicing the Pancasila principles (Solin & Hasugian, 2021). Teachers must serve as facilitators for utilizing learning resources both conventional and digital, such as the internet and electronic media, to keep up with global developments (Nanda & Budimansyah, 2020). Proper training equips teachers with extensive knowledge of Pancasila values and literacy abilities to effectively convey these concepts to younger generations (Astuti et al., 2022). In this instance, it is necessary for multiple parties to collaborate to offer extensive training and guidance using suitable resources.

Rubini et al., (2018) found that literacy-based learning can enhance and foster student character development, including traits such as trustworthiness, responsibility, respect, care, fairness, citizenship, courage, diligence, and integrity. Similarly, Susanti (2020), reports an increase in student awareness and engagement in building character aligned with cultural and ethical values through socialization activities promoting Pancasila character literacy. Increased awareness is not only observed by students but also by the school in assisting and shaping students with Pancasila character (Nurizka et al., 2020). This indicates that literacy-based training programs focused on Pancasila characters can enhance teachers' comprehension of Pancasila values and students' literacy abilities (Mudjiyanto et al., 2021).

A program aimed at empowering teachers is deemed capable of overcoming obstacles in order to enhance their understanding of the development of Pancasila character education and promote the integration of Pancasila values across all subjects (Achadi & Fithriyana, 2020). It is recommended that the Pancasila character education course program be founded on Indonesian-Malaysian literacy. This program enables teachers to comprehensively appreciate variations in culture and values between the two countries. Subsequently, educators can integrate Pancasila principles in the lives of Indonesian students living in Malaysia. The program serves to equip Indonesian learners with the essential skills and knowledge necessary for retaining and implementing Pancasila values without experiencing any difficulties or feeling alienated. Through this approach, educators can assist Indonesian students in Malaysia in comprehending the pertinence of applying the values of Pancasila to the younger generation's lives, regardless of their location (Rusnaini et al., 2021). This will enable the students to cultivate a robust and profound character within themselves. Furthermore, such programs supports the idea of Sustainable Development Goals (SDGs) proposed by the United Nations (UN) number 4 about quality education (United Nation, n.d.). It is expected that this program will give a strong foundation of Pancasila understanding among educators and learners.

## METHOD

This research utilized a quantitative methodology to assess the impact of two variables: Teacher Empowerment Based Course Program (X) and Teacher Knowledge (Y). The study examined educators from Sekolah Indonesia Kuala Lumpur, Malaysia and nearby centers, drawn from a probability sampling technique where all participants had an equal chance of being randomly selected irrespective of population strata. The study implemented a questionnaire as the means of data collection. Specifically, the tool utilized consisted of a 15-item Teacher Empowerment Program instrument and a 14-item Teacher Knowledge assessment. The research employed a probability sampling technique and gathered 80 participants for

the study. The data analysis in this study utilized simple linear regression, as well as various tests for validity, reliability, normality, heteroscedasticity, t-tests, F-tests, and the Determination Coefficient Test. The analysis method employed SPSS version 25 to address the problem formulated or confirm the theory.

## RESULTS AND DISCUSSION

### Validity Test

A validity test is conducted to determine the reliability of the questionnaire. A significance test between the computed  $r$  and the  $r$  table value will do this. A correlation coefficient significance test at the 0.05 level is frequently used to verify an item's appropriateness for use; if the item is strongly connected with the total score, it is accepted for use. Items, queries, and variables are considered legitimate if and only if their values are larger than zero, and the  $r$  count is bigger than the  $r$  table. In contrast, the  $r$  count cannot be legitimate if it is less than the  $r$  table. The results of the trials involving the factors of teacher autonomy and teacher expertise are presented in Table 1.

Table 1. Validity Test Results

Variable	Item	R Count	R Table	Sig	Note
<i>Teacher Empowerment</i>	X1.1	0.660	0.2199	0.000	Valid
	X1.2	0.674	0.2199	0.000	Valid
	X1.3	0.688	0.2199	0.000	Valid
	X1.4	0.625	0.2199	0.000	Valid
	X1.5	0.689	0.2199	0.000	Valid
	X1.6	0.629	0.2199	0.000	Valid
	X1.7	0.790	0.2199	0.000	Valid
	X1.8	0.728	0.2199	0.000	Valid
	X1.9	0.727	0.2199	0.000	Valid
	X1.10	0.663	0.2199	0.000	Valid
	X1.11	0.710	0.2199	0.000	Valid
	X1.12	0.845	0.2199	0.000	Valid
	X1.13	0.794	0.2199	0.000	Valid
	X1.14	0.796	0.2199	0.000	Valid
	X1.15	0.730	0.2199	0.000	Valid
<i>Teacher Knowledge</i>	Y1.1	0.729	0.2199	0.000	Valid
	Y1.2	0.693	0.2199	0.000	Valid
	Y1.3	0.743	0.2199	0.000	Valid
	Y1.4	0.700	0.2199	0.000	Valid
	Y1.5	0.737	0.2199	0.000	Valid
	Y1.6	0.733	0.2199	0.000	Valid
	Y1.7	0.769	0.2199	0.000	Valid
	Y1.8	0.747	0.2199	0.000	Valid
	Y1.9	0.747	0.2199	0.000	Valid
	Y1.10	0.748	0.2199	0.000	Valid
	Y1.11	0.727	0.2199	0.000	Valid
	Y1.12	0.686	0.2199	0.000	Valid
	Y1.13	0.635	0.2199	0.000	Valid
	Y1.14	0.775	0.2199	0.000	Valid

All items in the Teacher Empowerment and Teacher Knowledge categories have a correlation coefficient ( $r$ ) that is more than the crucial value ( $r$  table) and has a significance level greater than 0.05, as shown in Table 1. All items included in this study were found to have validity, suggesting that the measures of both teacher empowerment and teacher knowledge were effective.

### Reliability Test

The reliability test was employed to evaluate the consistency of measurement outcomes obtained from the questionnaire when administered multiple times. Any questions, structures, or variables that had a Cronbach Alpha coefficient below 0.60 were considered to be unreliable. Reliability was established for questions, structures, or variables that exhibited a Cronbach Alpha coefficient greater than 0.60. Cronbach's alpha was used to determine the accuracy of the study's findings. Table 2 displays the results of the study's reliability test.

Table 2. Reliability Test Result

Variable	Cronbach's Alpha	Standart Alpha	Note
Teacher Empowerment	0..933	0.60	Reliabel
Teacher Knowledge	0..930	0.60	Reliabel

Table 2 displays the results of a reliability analysis, which show that the variables of teacher empowerment and teacher knowledge both have values more than 0.06, indicating their dependability.

### Normality Test

The data normality test is used to determine the data distribution for the single variable of interest. If the goal is to know if the distribution is normal, the Kolmogorov-Smirnov test is what you need. The data are presumed to be normally distributed if and only if the p-value is greater than 0.05 ( $p > 0.05$ ). It is reasonable to infer that the data is statistically unusual if the p-value is less than 0.05 ( $P < 0.05$ ). Table 3 displays the outcomes of the present study's normality tests.

Table 3. Normality Test Result

		Unstandardized Residual
N		80
Normal Parameters <sup>a,b</sup>	Mean	.0000000
	Std. Deviation	.25709407
Most Extreme Differences	Absolute	.098
	Positive	.098
	Negative	-.068
Test Statistic		.098
Asymp. Sig. (2-tailed)		.057 <sup>c</sup>

- a. Test distribution is Normal.
- b. Calculated from data.
- c. Lilliefors Significance Correction.

Table 3's significant value, labeled Asymp. Sig. (2-tailed), may be seen to be 0.057 based on the data presented above. This value is significantly higher than the 0.05 threshold set as the level of significance. The distribution of the teacher empowerment variable (X) in relation to the teacher knowledge variable (Y1) is determined to be normally distributed, hence it is decided to accept the null hypothesis (H0).

### Heteroscedasticity Test

The purpose of this analysis is to compare groups of data to see if there is a statistically significant difference in the residual variance. Heteroscedasticity testing involves the utilization of a scatterplot diagram. The scatterplot graph allows for the examination of heteroscedasticity in a regression model. The presence of a discernible pattern in the Figure 1 suggests the occurrence of heteroscedasticity.

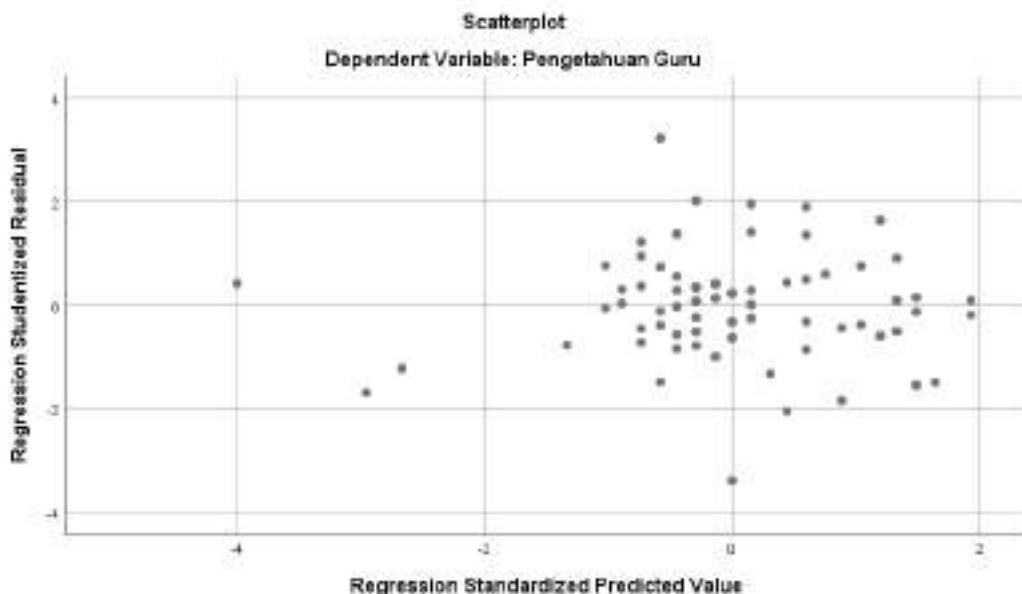


Figure 1. Heteroscedasticity Test Result



According to the observations depicted in Figure 1, the data points exhibit a random distribution, displaying both positive and negative values in relation to the Y-axis. The results of this analysis suggest that heteroscedasticity does not exist in the selected regression model.

### Simple Regression Test

The purpose of this study is to examine the relationship between teacher empowerment (the independent variable) and teacher knowledge (the dependent variable) using Simple Linear Regression Analysis (Table 6). The purpose of the analysis is to gain a deeper understanding of the variables and their relationship to one another.

Table 6. Simple Regression Coefficient

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.822	.256		3.214	.002
	Teacher Empowerment	.776	.065	.806	12.005	.000

a. Dependent Variable: Teacher Knowledge

The findings derived from the computation of the simple regression coefficients indicate that the constant coefficient is 0.822, while the coefficient associated with the independent variable (X) is 0.776. Based on the aforementioned data, Given that the correlation between teacher empowerment (X) and teacher knowledge (Y) is 0.806, it follows that there is a strong association between these two factors (Table 7).

Tabel 7. T<sup>a</sup> Test Result

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.822	.256		3.214	.002
	Teacher Empowerment	.776	.065	.806	12.005	.000

a. Dependent Variable: Teacher Knowledge

T test findings show that both teacher empowerment (X) and teacher knowledge (Y) have a statistically significant impact on student achievement. The t test calculated a significance level of 0.000, indicating that this is the case.

### Determination Coefficient Test

The Coefficient of Determination test is used to ascertain the degree of causality between the independent and dependent variables. Coefficient of determination, sometimes known as R-squared, is a statistical tool for evaluating levels of predictability. A high R-squared value, typically above 0.05, is indicative of a strong level of determination (Table 8).

Table 8. Test Results of the Coefficient of Determination (R<sup>2</sup>)

Model Summary <sup>b</sup>				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.806 <sup>a</sup>	.649	.644	.25874

a. Predictors: (Constant), Teacher Empowerment

b. Dependent Variable: Teacher Knowledge

Based on the aforementioned test, it has been determined that the coefficient of determination is 0.649, indicating a proportion of 64.9%. The training program based on teacher empowerment has a significant impact on the knowledge of teachers. Although it is understood that extra factors may account for 35.1% of the observed results that were not investigated here.

The study findings indicate that the Teacher Empowerment-Based Course Program has a notable impact on the level of Teachers' Knowledge on the Pancasila Character, as measured by the Indonesia-Malaysia Literacy assessment. The observation of a t test result of 12.005, accompanied with a significance value of 0.000, indicates the presence of a statistically significant relationship. Teachers' understanding about the character of Pancasila based on Indonesian-Malaysian literacy has risen after being given an intervention in the form of a teacher empowerment-based course program. In support of this idea, (Nukoonkan & Dhammapissamai, 2023) developed a self-guided, online training course for educators to enhance their project management abilities. (Hyseni Duraku et al., 2022) found that completing the training program significantly improved the knowledge and skills of early childhood education teachers. Similarly, (Zala-

Mezö et al., 2019) observed that a train-the-trainer program for instructors in higher education resulted in increased perceptions of self-efficacy and academic achievement levels in the teaching-learning process. However, (Zala-Mezö et al., 2019) focused more on developing teachers' project management skills rather than their overall knowledge. From the overall findings above, it shows that providing training to teachers can improve teacher knowledge, in this case related to teacher knowledge related to Pancasila character based on Indonesian-Malaysian literacy.

Such a program has great potential to deepen teachers' understanding of Pancasila values that reflect the culture, history and identity of the Indonesian-Malaysian community. From a psychological point of view, teacher empowerment through this kind of course can affect changes in knowledge through cognitive, emotional and behavioral processes. Teacher empowerment programs can also encourage action change (Mohamad et al., 2015). Teachers who are more educated in Indonesia-Malaysia literacy-based Pancasila character might try to integrate the values in their daily learning (Azizah et al., 2021). They may use regional literacy stories and content in their teaching to illustrate Pancasila concepts (Royani et al., 2022). This will have a positive impact on students, helping them to better understand the meaning of Pancasila values, and strengthen their cultural identity. Interactive and creative teaching methods allow teachers to integrate Pancasila values and Indonesian-Malaysian literacy into their lessons in interesting and relevant ways (Gill & Berezina, 2020). For example, teachers can use stories from both cultures as teaching materials, allowing students to understand the meaning of Pancasila characters concretely (Yafie et al., 2020). The use of techniques such as group discussions or regional literacy-based projects can also encourage students to actively participate in understanding and internalizing the values. Overall, the teacher empowerment-based course program can influence teachers' knowledge of Indonesia-Malaysia literacy-based Pancasila characters through cognitive, emotional and behavioral changes. With a deeper understanding and strengthened commitment to Pancasila values, teachers can play a more effective role in shaping students' character and promoting multicultural culture and awareness in the educational environment.

## CONCLUSION

The findings of the study indicate that the Teacher Empowerment-Based Course Program has a statistically significant impact on the level of knowledge among teachers on the Pancasila character, as it pertains to literacy in the context of Indonesia-Malaysia. The aforementioned observation is supported by the t-test outcome of 12.005, which exhibits a significance level of 0.000. Teachers' knowledge about the character of Pancasila based on Indonesian-Malaysian literacy has increased after being given an intervention in the form of a teacher empowerment-based course program. This teacher empowerment-based course program can provide teachers with knowledge related to Indonesian-Malaysian literacy so that they can apply and implement this literacy knowledge through appropriate and interesting teaching methods. This research is expected to contribute to the scientific field, especially in improving teacher competence. Further research can explore other positive impacts besides the increase in teacher knowledge after being given intervention through the program.

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## REFERENCES

- Achadi, M. W., & Noor Laila Fithriyana. (2020). Integration of Pancasila values in student books of Islamic religious education and character at high school level. *Jurnal Pendidikan Agama Islam*.  
<https://doi.org/10.14421/jpai.2020.172-02>
- Astuti, W., Yafie, E., Pangestu, K., Robbaniyah, I., Haqqi, Y. A., & Hidayana, K. (2022). Teacher-perceived ubiquitous learning environment for peer-to-peer collaborative learning to student achievement. *Proceedings - International Conference on Education and Technology, ICET, 2022-October*, 233–239.  
<https://doi.org/10.1109/ICET56879.2022.9990854>
- Azizah, A. R., Samawi, A., & Anisa, N. (2021). Dampak implementasi pembelajaran daring terhadap karakter anak di masa pandemi COVID-19. *Al Hikmah: Indonesian Journal of Early Childhood Islamiceducation*, 5(2), 79–89.
- Gill, C. H. D., & Berezina, E. (2020). School performance in three South East Asian countries: Lessons in leadership, decision-making and training. *European Journal of Training and Development*. <https://doi.org/10.1108/EJTD-01-2020-0014>
- Hyseni Duraku, Z., Blakaj, V., Shllaku Likaj, E., Boci, L., & Shtylla, H. (2022). Professional training improves early education teachers' knowledge, skills, motivation, and self-efficacy. *Frontiers in Education*.  
<https://doi.org/10.3389/educ.2022.980254>

- Jannah, F., & Fahlevi, R. (2018). Strengthening The Pancasila Character Values in Forming The Character of Pancasila Generation. *Proceedings of the 1st International Conference on Creativity, Innovation and Technology in Education*. <https://doi.org/10.2991/iccite-18.2018.18>
- Julaeha, S. (2019). Problematika kurikulum dan pembelajaran pendidikan karakter. *Jurnal Penelitian Pendidikan Islam*. <https://doi.org/10.36667/jppi.v7i2.367>
- Malau, P. T. (2022). The role of pancasila educational subjects and citizenship in the character forming of students in online learning period. *Proceeding of International Conference on Social Sciences and Education*, 2(1), Article 1. <https://jurnal.fkip.uns.ac.id/index.php/icsse/article/view/13282>
- Mohamad, N., Abdul Rahman, H., Usman, I. M., & Tawil, N. M. (2015). Ethics education and training for construction professionals in Malaysia. *Asian Social Science*. <https://doi.org/10.5539/ass.v11n4p55>
- Mudjiyanto, B., Dunan, A., Aptika, P., Ikp, B., Litbang, S., Kominfo, K., & Medan, J. (2021). Implementation of pancasila values in the pandemic of the Covid-19. *Majalah Ilmiah Semi Populer Komunikasi Massa*.
- Nanda, V. S., & Budimansyah, D. (2020). Strengthening of digital media literacy-based character education on hoax news spreading to students (case study on citizenship education learning in SMP Negeri 2 Bandung). *Journal of International Conference Proceedings*. <https://doi.org/10.32535/jicp.v2i4.804>
- Nukoonkan, C., & Dhammapissamai, P. (2023). Developing teachers to enhance project management skills for students. *World Journal of Education*. <https://doi.org/10.5430/wje.v13n1p58>
- Nurizka, R., Irawan, R., Sakti, S. A., & Hidayat, L. (2020). Internalization of school culture to foster awareness of Pancasila values in elementary school students. *Universal Journal of Educational Research*. <https://doi.org/10.13189/ujer.2020.081053>
- Prasety, E. J., & Wijaya, D. N. (2022). Wasita rini: Pemikiran Ki Hajar Dewantara dalam pendidikan perempuan. *Sutasoma : Jurnal Sastra Jawa*. <https://doi.org/10.15294/sutasoma.v10i2.61907>
- Pratama, A. Y., & Noventari, W. (2018). Revitalisasi nilai-nilai Pancasila: Kajian historis dari demokrasi terpimpin hingga era milenial. *Seminar Nasional PKn UNNES*.
- Rahayuningtyas, D. R., Rizqi, P. A., Firnanda, R., Putri, M., Sawwama, A., Lutfhi, E., & Ahsani, F. (2021). Peran guru dalam mempertahankan cultural heritage Indonesia dalam membentuk karakter siswa di Sekolah Indonesia Kuala Lumpur. In *PENSA : Jurnal Pendidikan dan Ilmu Sosial*.
- Riadin, A., & Permadi, A. S. (2019). Implementasi Pembelajaran PKn untuk membentuk pribadi yang berkarakter di SD Muhammadiyah Sampit. *Pedagogik: Jurnal Pendidikan*, 14(1), 18–28. <https://doi.org/10.33084/PEDAGOGIK.V14I1.828>
- Rosana, D., Setyawarno, D., & Setyaningsih, W. (2019). Development model of students' inert-depend strategies to face disruption era through best practice film of android based learning of pancasila character value. *Journal of Physics: Conference Series*. <https://doi.org/10.1088/1742-6596/1233/1/012098>
- Royani, A., Maknun, L., Susiawati, I., & Umbar, K. (2022). A Comparative analysis of learning outcomes in the faculty of education in Indonesia, Malaysia, and Singapore. *Jurnal Basicedu*. <https://doi.org/10.31004/basicedu.v6i2.2479>
- Rubini, B., Permanasari, A., & Permana, I. (2018). Building character through science learning with scientific literacy based. *IOP Conference Series: Materials Science and Engineering*. <https://doi.org/10.1088/1757-899X/288/1/012030>
- Rusnaini, R., Raharjo, R., Suryaningsih, A., & Noventari, W. (2021). Intensification of the Pancasila student profile and its implications for student personal resilience. *Jurnal Ketahanan Nasional*, 27(2). <https://doi.org/10.22146/jkn.67613>
- Setyaningsih, S., & Wiryanto, W. (2022). Peran guru sebagai aplikator profil pelajar pancasila dalam kurikulum merdeka belajar. *Jurnal Ilmiah Mandala Education*, 8(4), 2656–5862. <https://doi.org/10.58258/JIME.V8I4.4095>
- Solin, S. M., & Hasugian, L. (2021). Grounding Pancasila values as nusantara character building. *Social, Humanities, and Educational Studies (SHEs): Conference Series*. <https://doi.org/10.20961/shes.v4i4.50588>
- Sulastri, S., Syahril, S., Adi, N., & Ermita, E. (2022). Penguatan pendidikan karakter melalui profil pelajar pancasila bagi guru di sekolah dasar. *JRTI (Jurnal Riset Tindakan Indonesia)*. <https://doi.org/10.29210/30032075000>
- Susanti, E. (2020). Sosialisasi membangun literasi karakter berbasis pancasila di era digital 4.0 dalam upaya pencegahan radikalisme dan terorisme pada remaja. *Jurnal Sumbangsih*. <https://doi.org/10.23960/jsh.v1i1.3>
- Susanti, S., & Sukaesih, S. (2021). Strengthening character education in elementary school with international curriculum (a case study at bestari utami elementary school, Garut). *Sosiohumaniora*, 23(3), Article 3. <https://doi.org/10.24198/sosiohumaniora.v23i3.31896>
- United Nation. (n.d). The 17 goals. Retrieved January 1, 2024, from <https://sdgs.un.org/goals>. at 13.29
- Yafie, E., Kustiawan, U., Astuti, W., Haqqi, Y. A., Boedi, D., & Ilhami, B. S. (2020). Pengaruh pelatihan pembuatan media pembelajaran terhadap peningkatan keterampilan mengembangkan Alat Permainan Edukatif (APE) dari bahan bekas. *Abdimas Pedagogi: Jurnal Ilmiah Pengabdian Kepada Masyarakat*. <https://doi.org/10.17977/um050v3i2p124-135>
- Yafie, E., Olufunke, O.-F. T., Ali, M., Robbaniyah, I., Maulidia, L. N., & Setyaningsih, D. (2021). The combination of imaginative teaching methods and multimedia learning in early childhood education during COVID pandemic:

Social-emotional and language development. *Al-athfal: Jurnal Pendidikan Anak*, 7(1), 1–14.

<https://doi.org/10.14421/AL-ATHFAL.2021.71-01>

Yuliatin, Husni, L., Hirsanuddin, & Kaharudin. (2021). Character education based on local wisdom in Pancasila perspective. *Journal of Legal, Ethical and Regulatory Issues*.

Zala-Mezö, E., Raeder, S., & Strauss, N. C. (2019). More knowledge helps implement change: Evaluation of a training program during educational reform. *Studies in Educational Evaluation*.

<https://doi.org/10.1016/j.stueduc.2019.03.008>



# Improving the environmental quality of Kesiman Village, Mojokerto Regency through household waste sorting

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ARTICLE INFO	ABSTRACT
<p><b>Article history</b>            Received: 2023-07-11            Revised: 2024-02-04            Accepted: 2024-02-05            Published: 2024-02-05</p> <p><b>Keywords</b>            Household waste            Non-organic waste            Organic waste            Village empowerment            Waste sorting</p>	<p><i>The most significant source of waste in Indonesia is households. This community service aims to improve the environmental quality of Kesiman Village by educating residents to sort waste from their households. This activity begins with observations and interviews with residents. Preliminary survey results show that the waste problem has been around for a long time, and accumulation occurs in the Final Disposal Site (TPA). Based on interviews with villagers, they are willing to participate in the waste management assistance program. Furthermore, waste sorting facilities are provided for each resident's house by empowering village communities with expertise. Counseling or education is carried out at the home of a resident, as well as providing a real example of waste segregation. Sorting is done based on the categories of organic and non-organic waste. Two weeks after the counseling, the service team evaluated by direct surveying several residents' houses to see if the sorting had gone well and smoothly. The evaluation results show that residents understand and carry out waste segregation consistently. However, there are several obstacles; for example, some houses feel the trash can needs to be bigger, and sometimes they place organic and non-organic waste upside down. After the household waste sorting program runs smoothly, the community service team will plan and realize the Village waste management program so that the volume of waste is reduced and the environment is cleaner.</i></p>
<p><b>Kata kunci</b>            Pemberdayaan desa            Pemilahan sampah            Sampah non-organik            Sampah organik            Sampah rumah tangga</p>	<p><b>Peningkatan kualitas lingkungan Desa Kesiman, Kabupaten Mojokerto melalui pemilahan sampah rumah tangga.</b> Sumber sampah paling signifikan di Indonesia adalah rumah tangga. Pengabdian masyarakat ini bertujuan untuk meningkatkan kualitas lingkungan Desa Kesiman dengan mengedukasi warga untuk memilah sampah dari rumah tangganya. Kegiatan ini diawali dengan observasi dan wawancara dengan warga. Hasil survei pendahuluan menunjukkan bahwa permasalahan sampah sudah ada sejak lama, dan penumpukan terjadi di Tempat Pembuangan Akhir (TPA). Berdasarkan wawancara dengan warga desa, mereka bersedia mengikuti program pendampingan pengelolaan sampah. Selanjutnya, disediakan fasilitas pemilahan sampah untuk setiap rumah warga dengan memberdayakan masyarakat desa dengan keahlian. Penyuluhan atau edukasi dilakukan di rumah warga, sekaligus memberikan contoh nyata pemilahan sampah. Pemilahan dilakukan berdasarkan kategori sampah organik dan non organik. Dua minggu setelah penyuluhan, tim layanan mengevaluasi dengan survei langsung ke beberapa rumah warga untuk melihat apakah pemilahan telah berjalan dengan baik dan lancar. Hasil evaluasi menunjukkan bahwa warga memahami dan melakukan pemilahan sampah secara konsisten. Namun, ada beberapa kendala; misalnya, beberapa rumah merasa tempat sampah harus lebih besar, dan terkadang mereka menempatkan sampah organik dan non-organik terbalik. Setelah program pemilahan sampah rumah tangga berjalan lancar, tim pengabdian masyarakat akan merencanakan dan merealisasikan program pengelolaan sampah desa agar volume sampah berkurang dan lingkungan menjadi lebih bersih.</p>

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## INTRODUCTION

Soil, water, and air pollution can all be caused by improper garbage disposal (Lian et al., 2020; Rajpal et al., 2020; Saikawa et al., 2020). In addition, it is also bad for human health because, over the years, it has caused several health problems (Báreková et al., 2020; Handoyo et al., 2020; Odonkor & Sallar, 2021). The waste problem still needs to be fully overcome, even continuously increasing yearly. Based on data from KLH (Ministry of Environment) and BPS (Central Statistics Agency), the volume of waste is increasing. In 2015, Indonesia's waste reached 64.4 million tons; And in 2021, the amount of waste reached 68.5 million tons. In most cities in developing countries, municipal solid waste management is addressed with formally organized waste collection (Asgari et al., 2019; Sosna et al., 2019), inadequate waste management (Procházková et al., 2019; Wang et al., 2018), and recycling policies and practices (Kanhai et al., 2021; Xiao et al., 2017). The waste problem will ultimately affect the sustainability of a country (Sahar & Ahmad, 2019). The condition of waste accumulation does not only occur nationally but is also seen at the village level. Therefore, it is crucial to take concrete actions by assisting in managing waste from upstream or waste sources, namely households. Household waste is the largest source of waste (sipsn.menlhk.go.id). Household waste generally consists of paper, electronic equipment, food scraps, plastic and glass bottles, metal cans, and discarded clothes. Garbage separation, or garbage classification or garbage separation, is the process of separating waste of different elements operated manually in households or through curbside collection schemes (Harasarn et al., 2022; Taghipour et al., 2016). There is an urgent need to address this significant problem by implementing effective household waste sorting programs (Xu et al., 2017).

Kesiman Village is located in the Trawas sub-district, Mojokerto Regency. Kesiman Village has good natural and tourism potential but needs help with waste problems (Andono & Girindratama, 2023; Eriandani et al., 2023). If the village becomes a tourist destination but has yet to start managing its waste, the pile of garbage will be higher. Tourism growth is usually accompanied by an increase in some environmental and socioeconomic impacts (Obersteiner et al., 2021), in addition to emissions from transport and the impact of all necessary infrastructure (restaurants, lodging). Kesiman Village consists of 3 hamlets: Kemlagi Hamlet, Summersari Hamlet, and Kesiman Hamlet. The area of Kesiman Village is 118 Ha, and the population is 2924 people. In addition to having quite a large population, Kesiman Village also has a large enough market, so every day, it produces much waste.

Waste management activities have not been sorted from the source (Household). The waste will be collected in a landfill (Landfill), then burned. There are two places in the Village Landfill: Kemlagi and Summersari Hamlets. The conditions at both landfills are already very full. There are better solutions for handling waste than burning waste because it will cause various problems, such as health problems due to combustion substances, fire potential, etc. Burning waste in open spaces could be more efficient because the oxygen supply is limited, and the temperature is difficult to control. This incomplete combustion results in the emission of toxins, such as particulates, carbon monoxide (CO), and other gases, into the atmosphere without air pollution control (Agarwal et al., 2020; Ramadan et al., 2022). Another problem, if the rainy season, the pile of garbage cannot be burned and is increasingly mounting. The act of burning waste does not follow Article 29 in Law No. 18 of 2008 and has the potential for land fires. The accumulation of garbage in the disposal area has begun to pollute the flow of the village river.

There has never been a community-based environmental program, particularly on the issue of waste (Iryanto et al., 2022; Wandee et al., 2022). The number of households is almost 1000 households, the estimated waste produced with an area of 15m<sup>3</sup> per day. If waste management is done well, it will provide economic benefits, be healthy for the community, and be environmentally safe (Fajfrlíková et al., 2020; Liu et al., 2022). In the end, it achieved the Clean Indonesia program in 2025. Kesiman Village has also never held counseling on waste sorting, so until now; everything is mixed. Likewise, the most straightforward facilities for waste sorting have yet to be available. Separation of waste sources can reduce emissions of gases that cause global warming and climate change (Shyamal et al., 2023; Teng et al., 2022). Despite the benefits, previous research has shown that household waste sorting practices are rare in developing countries (Zambrano-Monserrate et al., 2020).

Based on the description of the situation analysis, it is known that Kesiman Village still needs to take the first steps for waste management. This is quite worrying because the development of Kesiman Village's tourism potential must be balanced with clean and comfortable environmental conditions. In addition, all communities and village officials have never received training and assistance for waste management. Based on the results of discussions with the head of Kesiman Village, there are three problems that we want to be resolved. First, how to manage waste from upstream to downstream so that there is a manageable amount of waste accumulation. Second, Kesiman Village needs a 'first step' to start household waste management actions. Third, Kesiman Village needs the help of facilities to encourage residents to sort waste. Waste separated from home will be easy to process further and reduce the volume of village waste (Sastrawan et al., 2022).

This community service activity in Kesiman Village aims to make two contributions. First, training and mentoring for the community along with village equipment. They need to know the basics of sorting and processing. After counseling is given, practices will be carried out in the form of assistance in sorting household waste. After counseling and practice, the actual implementation is carried out with supervision. Furthermore, monitoring and evaluation will be carried out within the specified time. Second, empowering villagers in making or providing facilities for sorting bins for each house. With the

existence of sorting bins, it is hoped that people are biased and accustomed to sorting their waste so that waste can be managed better.

This community service activity supports efforts to achieve Sustainable Development Goals (SDGs). Of the 17 SDGs, this activity has contributed to achieving the 11th and 13th SDGs (United Nation, n.d.). Waste sorting activities can create a more sustainable village by reducing the negative impact of waste on the environment and public health. Activities can also be the initial foundation in helping to reduce greenhouse gas emissions by reducing the volume of waste in landfills. The learning process concerning achieving the SDGs goals requires training and assistance with community empowerment (Quiroz-Niño & Murga-Menoyo, 2017).

## METHOD

The community service team consists of five lecturers and five students. The community service program for Kesiman Village, a village in Trawas sub-district, Mojokerto Regency, East Java Province (see Figure 3) was carried out over four months. It was carried out in several stages (see Figure 4)—first, observation and mapping of the needs of rural communities. Before the observation, the service team discussed with the village head to identify problems and determine the location of the service. Given that waste management assistance has never been carried out in Kesiman Village, it is necessary to choose one of the hamlets as a *pilot project*. If the program is successful, it will be continued in other Hamlets. Furthermore, the service team will conduct observations and interviews in selected hamlets.

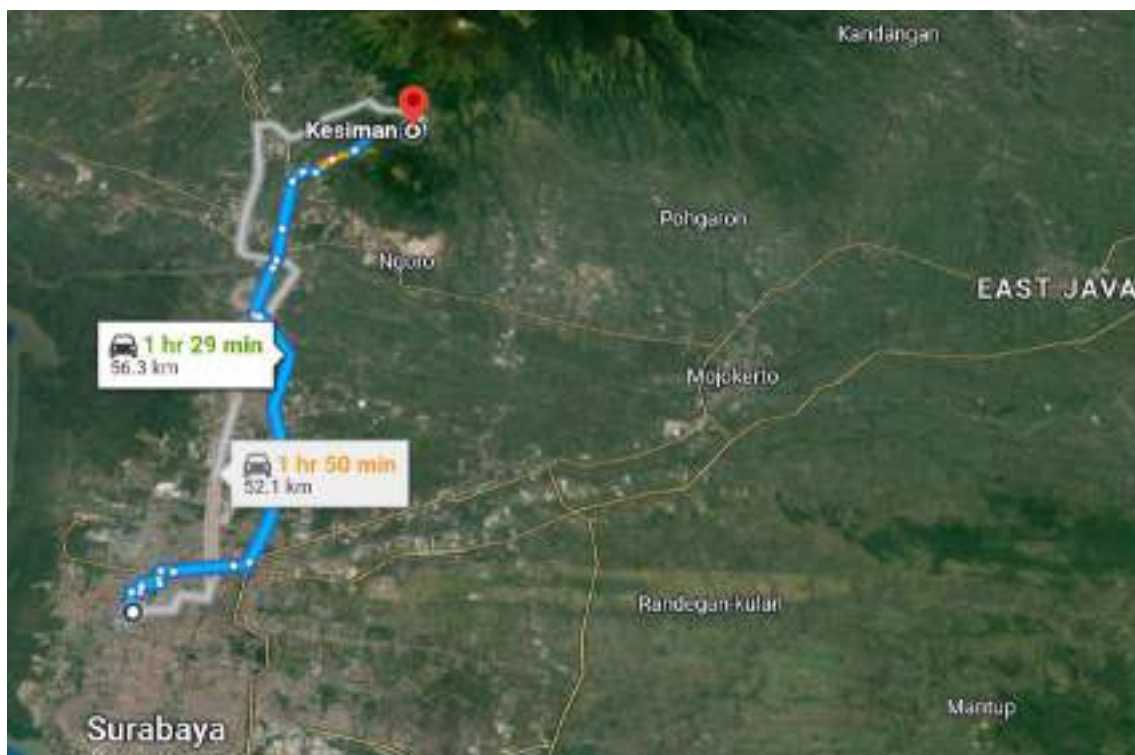


Figure 1. Location Map of Kesiman Village

Second, the provision of waste disposal facilities by empowering the village community. After the observation stage and interviews with Hamlet residents, it will be decided whether it is necessary to provide trash cans to encourage households to be willing to sort waste. This stage has two options for its implementation, namely, finding a supplier of trash cans or fully empowering the village community to make their trash cans.

Third, counseling and guidance on household waste sorting. This stage of counseling or education is carried out almost simultaneously with the process of providing trash can facilities so that waste sorting practices can be carried out when the facilities are available. Education is carried out on all selected Hamlet residents and will be collected in one place. The method of delivering material semiformal, followed by discussion and question and answer. The presenter is a lecturer who has much experience in waste management.

Fourth, the evaluation and planning of the following program. After all Hamlet residents have participated in education and understand how to sort waste, regular assistance is carried out. The evaluation is carried out as a survey at the end of the mentoring period to see whether the program is running well. The evaluation was carried out by re-observing the environmental conditions of the selected Hamlets, as well as interviews and discussions with several residents. Based on the survey results at the end of this program, a follow-up service program will be determined that can be implemented again in Kesiman Village (Figure 2).

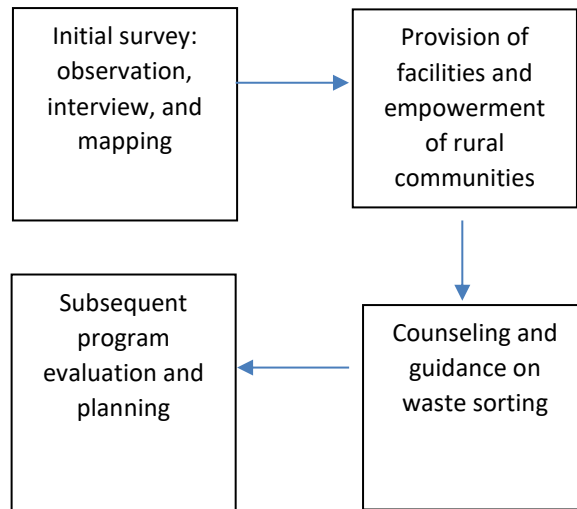


Figure 2. Stages of the community service program

## RESULTS AND DISCUSSION

Community service activities began to be carried out starting in August 2022 in Kesiman Village, Trawas District, Mojokerto Regency. In the early stage, the service team met the Head of Kesiman Village. The Village Head explained the environmental conditions of the Village. Telling the condition of village waste as well as taking around the village and to the landfill location (see Figure 1 and 2). After discussion, the hamlet selected as a *pilot project* is Kemlagi Hamlet. So far, kemlagi residents are not willing to pay the waste levy because they feel that their homes are close to the kemlagi landfill. Furthermore, the service team met the Head of Kemlagi Hamlet to compile an initial waste management program, namely sorting household waste (Figure 3). The initial survey was conducted on several residents of Kesiman Hamlet on Figure 5. The service team was divided into 2 groups, and scattered to visit residents from house to house.



Figure 3. Initial Survey

The observation results show that the environmental conditions of residents' homes are pretty clean, there is no accumulation of garbage, but garbage is still mixed. The interview was conducted with a *semistructure*. The service team made a short list of questions to discuss with residents. Based on the results of the interview, it is known that waste dues are worth 10,000 Rupiah every month, and garbage collection is carried out two times a week (Monday and Thursday). Of the 14 respondents who were successfully visited by the service team, four respondents (29%) claimed to have known about the separation of organic and non-organic waste, three respondents (21%) had only heard and had an understanding that only plastic bottles needed to be separated, and seven respondents (50%) stated that they did not know about waste sorting at all. Regarding the type of waste produced by residents of Kemlagi hamlet, six respondents (43%) claimed to produce more organic waste, and eight respondents (57%) had a lot of plastic waste or food packaging.

The interview results also showed the enthusiasm of Dusun residents to manage their waste. Then the plan to provide sorting bin facilities can be implemented. The community service team and village officials find information about the supplier of sorting bins and calculate the budget needed. Finally, it was decided that sorting bins were provided by empowering the community (Figure 4). Villagers who have expertise in welding or painting iron are responsible for the activities of making iron frames. Timba for bins is purchased by comparing suppliers with good quality and affordable prices. The process of making this sorting bin takes about a month. Sorting bins will be given to each house in Kemlagi Hamlet, totaling 130 pieces. Garbage bins are distinguished between organic and non-organic. Blue barrels are for organic waste, while white barrels are for non-organic waste. To avoid being misplaced in placing waste, 'organic waste' and 'non-organic' stickers are attached to each sorting bin.



Figure 4. The process of making sorting bins

While waiting for the process of making a sorting bin, socialization, counseling, and coaching were held for the first steps in managing waste (Figure 5). This third step and the regular meeting schedule were held in the afternoon. Approximately 65 residents attended. Education is provided so the community can distinguish and sort waste based on organic and non-organic categories. The speaker gave real examples of household waste and how to sort it. After delivering the material, waga discussed and questioned. This activity was carried out in approximately 2 hours. Counseling is carried out once, then continued with mentoring, where every month, the service team will visit Kesiman Hamlet.





Figure 5. Waste sorting education

The service team evaluated waste sorting practices one month after the counseling by conducting a field survey. Like during the first survey, the service team was divided into two groups. Each group will look for homes of residents who are willing to be interviewed and discussed. Based on the interview results, the people of Kemlagi hamlet felt helped by the availability of sorting bins. Every household has made waste according to organic and non-organic categories. Figure 8 shows that plastic waste has been separated from kitchen waste (food waste, vegetables, and so on). After the waste is sorted, running the next service program, namely waste management, will be easy. The condition of waste in the Kemlagi landfill has also decreased (Figure 6).



Figure 6. Segregated garbage

There are obstacles felt by some communities regarding waste sorting. First, garbage cans are less extensive, especially for business houses (homes with grocery store businesses). Plastic bottle waste is quite a lot, so more is needed, and we prefer to collect it in sacks. Plastic bottle waste is isolated because it is easier to sell. Second, some residents complained about garbage pickups that were late or not on schedule. Third, sometimes, the garbage picked up by the janitor is put together in the tailgate of the pickup car so that the sorted waste is often mixed back.

These obstacles arise because this service program is still limited to providing sorting bins and sorting education to households. Furthermore, it is necessary to continue the waste utilization or management program, both organic and non-organic. Education for village cleaners or garbage units needs to be done so that the waste that has been sorted is not used as one.

A more comprehensive approach is needed to overcome the obstacles that arise during the implementation of community service programs. The plans that can be realized in the future include, first, educational training and training for village cleaners. The hamlet community and village cleaners are given education in sorting and processing waste efficiently. Second, there is the implementation of an integrated waste management system. Each individual or unit has a

clear role in an integrated waste management system, which involves the entire waste processing chain from selection to final disposal. Third, education on waste management technology. There are many ways to manage waste, including composting or recycling processes for non-organic waste. Also, ensure the technology adopted can be accessed and appropriately operated by the community—fourth, partnership development. Actively partner with relevant parties, including local governments and the private sector, for additional support and resources—fifth, local economic empowerment. Residents can also develop the local economy through waste management. For example, by supporting the waste recycling business or the production of organic fertilizer from waste. By making this effort, community service programs can develop into more holistic and sustainable waste management initiatives by involving all community components to create a more significant positive impact on the village environment.

Aligning waste management programs with the Sustainable Development Goals (SDGs) will achieve a broader positive impact on sustainable development. The education provided to the community and training for village cleaners raise awareness of the importance of waste management and improve the skills and knowledge of related communities. This can increase the capacity of communities to address environmental challenges. In addition, active community involvement in waste management programs can strengthen social bonds and a sense of shared responsibility towards the environment, creating togetherness and solidarity among villagers. Waste utilization programs like recycling and organic fertilizer production can create new job opportunities for local communities. This not only provides an additional source of income but also improves the economic welfare of the village. Local businesses involved in waste processing can contribute to local economic growth, creating a buoyant circular economy around the village area. Effective waste management can reduce environmental pollution, including greenhouse gas emissions from decomposed waste. This aligns with efforts to address climate change (SDG 13) and protect biodiversity (SDG 15). Sustainable use of waste, such as recycling, can reduce pressure on natural resources and help create more sustainable consumption and production patterns (SDG 12).

By achieving these SDGs goals, Kesiman Village can be an example of how local actions can have a broad positive impact. In addition, involving various stakeholders, such as government, society, and the private sector, can strengthen synergies to achieve comprehensive and sustainable development goals. Thus, Kesiman Village can pioneer sustainable development at the local level and inspire other communities.

## CONCLUSION

UBAYA's community service team has completed activities in Kesiman Village for four months with an education program on sorting household waste and providing sorting bins. All activities run well and align with the Village's interests. Every house in Kemlagi Hamlet has a sorting bin that has been utilized. This program has succeeded in increasing the understanding of Kesiman Village residents, especially Kemlagi Hamlet, regarding organic and non-organic waste. Residents have also been able to sort household waste well, although some households experience a few obstacles. Furthermore, a mentoring program for organic and non-organic waste management will continue. It is also essential to establish a waste bank so that there is a place for the village community to distribute their waste. Another program that can be implemented provides training to homemakers in waste utilization.

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## REFERENCES

- Agarwal, R., Shukla, K., Kumar, S., Aggarwal, S. G., & Kawamura, K. (2020). Chemical composition of waste burning organic aerosols at landfill and urban sites in Delhi. *Atmospheric Pollution Research*, 11(3), 554–565. <https://doi.org/10.1016/j.apr.2019.12.004>
- Andono, F. A., & Girindratama, M. W. (2023). Pelatihan dan pendampingan digital marketing melalui platform sosial media dan marketplace bagi UMKM kerajinan aksesoris. *RESWARA: Jurnal Pengabdian Kepada Masyarakat*, 4(1), 178–186. <https://doi.org/10.46576/rjpk.v4i1.2359>
- Asgari, A. R., Ghorbanian, T., Dadashzadeh, D., Khalili, F., Yari, A. R., Bagheri, A., Yousefi, N., Ghadiri, S. K., & Talebi, S. S. (2019). Solid waste characterization and management practices in rural communities, Tehran and Alborz (Iran). *Journal of Solid Waste Technology and Management*, 45(1), 111–118. <https://doi.org/10.5276/JSWTM.2019.111>
- Báreková, A., Tátošová, L., Kišš, V., & Kováčová, M. (2020). Composition of the separated green waste in rural and urban area. *Journal of Ecological Engineering*, 21(5), 234–239. <https://doi.org/10.12911/22998993/123120>
- Eriandani, R., Andono, F. A., Koan, D. F., Girindratama, M. W., & Rinawiyanti, E. D. (2023). Bimbingan teknis dan pendampingan penyusunan laporan keuangan bagi unit usaha BUMDes mitra warga Desa Kesiman. *International Journal of Community Service Learning*, 7(1), 112–120. <https://doi.org/10.23887/ijcsl.v7i1.54662>



- Fajfrlíková, P., Brunerová, A., & Roubík, H. (2020). Analyses of waste treatment in rural areas of east java with the possibility of low-pressure briquetting press application. *Sustainability (Switzerland)*, *12*(19).  
<https://doi.org/10.3390/su12198153>
- Handoyo, E., Setyowati, D. L., & Nurkomalasari, D. (2020). Social capital contribution and community-based waste management in the city of Cirebon. *International Journal of Innovation, Creativity and Change*, *11*(2), 93–113.
- Harasarn, K., Phatrabuddha, N., Kaewkaen, P., Jaidee, W., & Thetkathuek, A. (2022). Comparison of monoamine oxidase and selected heavy metals levels in the blood and the workplace among e-waste sorting workers in Ubon Ratchathani Province, Thailand. *Roczniki Panstwowego Zakladu Higieny / Annals of the National Institute of Hygiene*, *73*(4), 463–474. <https://doi.org/10.32394/rpzh.2022.0230>
- Iryanto, A. A., Firmansyah, Y. W., Widyantoro, W., & Zolanda, A. (2022). Spatial patterns of environmental sanitation factors as determinants of toddlers' diarrhea in Pauh District, Padang City in 2021. *Jurnal Kesehatan Lingkungan*, *14*(2), 71–81. <https://doi.org/10.20473/jkl.v14i2.2022.71-81>
- Kanhai, G., Agyei-Mensah, S., & Mudu, P. (2021). Population awareness and attitudes toward waste-related health risks in Accra, Ghana. *International Journal of Environmental Health Research*, *31*(6), 670–686.  
<https://doi.org/10.1080/09603123.2019.1680818>
- Lian, H., Wang, D., & Li, H. (2020). Waste sorting and its effects on carbon emission reduction: Evidence from China. *Chinese Journal of Population Resources and Environment*, *18*(1), 26–34.  
<https://doi.org/10.1016/j.cjpre.2021.04.027>
- Liu, H., Liu, T., Wei, G., Zhao, H., Li, T., Weng, F., Guo, X., Wang, Y., & Lin, Y. (2022). Environmental and economic assessment of rural domestic waste gasification models in China. *Waste Management*, *154*(May), 160–174.  
<https://doi.org/10.1016/j.wasman.2022.10.001>
- Obersteiner, G., Gollnow, S., & Eriksson, M. (2021). Carbon footprint reduction potential of waste management strategies in tourism. *Environmental Development*, *39*, 1–16. <https://doi.org/10.1016/j.envdev.2021.100617>
- Odonkor, S. T., & Sallar, A. M. (2021). Correlates of household waste management in Ghana: implications for public health. *Heliyon*, *7*(11), 1–7. <https://doi.org/10.1016/j.heliyon.2021.e08227>
- Procházková, K., Ivanova, T., & Muntean, A. (2019). An analysis of waste management in the Republic of Moldova: A comparison of rural and urban areas. *Polish Journal of Environmental Studies*, *28*(3), 1869–1875.  
<https://doi.org/10.15244/pjoes/89978>
- Quiroz-Niño, C., & Murga-Menoyo, M. Á. (2017). Social and solidarity economy, sustainable development goals, and community development: The mission of adult education & training. *Sustainability (Switzerland)*, *9*(12).  
<https://doi.org/10.3390/su9122164>
- Rajpal, A., Kazmi, A. A., & Tyagi, V. K. (2020). Solid waste management in rural areas nearby river ganga at haridwar in Uttarakhand, India. *Journal of Applied and Natural Science*, *12*(4), 592–598.  
<https://doi.org/10.31018/jans.v12i4.2394>
- Ramadan, B. S., Rachman, I., & Matsumoto, T. (2022). Activity and emission inventory of open waste burning at the household level in developing countries: a case study of Semarang City. *Journal of Material Cycles and Waste Management*, *24*, 1194–1204. <https://doi.org/10.1007/s10163-022-01371-3>
- Sahar, & Ahmad, I. (2019). Waste management analysis from economic-environment sustainability perspective. *International Journal of Scientific and Technology Research*, *8*(12), 1540–1543.
- Saikawa, E., Wu, Q., Zhong, M., Avramov, A., Ram, K., Stone, E. A., Stockwell, C. E., Jayarathne, T., Panday, A. K., & Yokelson, R. J. (2020). Garbage burning in South Asia: How important is it to regional air quality? *Environmental Science and Technology*, *54*(16), 9928–9938. <https://doi.org/10.1021/acs.est.0c02830>
- Sastrawan, Tasim, M., & Sulaiman, L. (2022). Pembinaan kelompok masyarakat peduli sampah untuk pengelolaan sampah plastik rumah tangga di kelurahan panjisari kabupaten lombok tengah. *Jurnal Pengabdian Kepada Masyarakat*, *28*(1), 16–23. <https://doi.org/10.24114/jpkm.v28i1.24164>
- Shyamal, D. S., Kazmi, A. A., Malik, S., Chaudhary, S., Patnaik, S., & Chauhan, S. (2023). Evaluation of the implementation of a community-led solid waste management system: A case study. *Journal of Material Cycles and Waste Management*, *25*(6), 3857–3871. <https://doi.org/10.1007/s10163-023-01765-x>
- Sosna, D., Brunlíková, L., & Galeta, P. (2019). Rescuing things: Food waste in the rural environment in the Czech Republic. *Journal of Cleaner Production*, *214*, 319–330. <https://doi.org/10.1016/j.jclepro.2018.12.214>
- Taghipour, H., Amjad, Z., Aslani, H., Armanfar, F., & Dehghanzadeh, R. (2016). Characterizing and quantifying solid waste of rural communities. *Journal of Material Cycles and Waste Management*, *18*(4), 790–797.  
<https://doi.org/10.1007/s10163-015-0365-z>
- Teng, Y., Lin, P. W., Chen, X. L., & Wang, J. L. (2022). An analysis of the behavioral decisions of governments, village collectives, and farmers under rural waste sorting. *Environmental Impact Assessment Review*, *95*, 106780.  
<https://doi.org/10.1016/j.eiar.2022.106780>
- United Nation. (n.d). The 17 goals. Retrieved October 30, 2023, from <https://sdgs.un.org/goals>. at 13.29
- Wandee, P., Bussabong, Z., & Duangkum, S. (2022). Application for a Waste Management via the QR-Code System. *International Journal of Advanced Computer Science and Applications*, *13*(5), 659–664.

<https://doi.org/10.14569/IJACSA.2022.0130577>

- Wang, F., Cheng, Z., Reisner, A., & Liu, Y. (2018). Compliance with household solid waste management in rural villages in developing countries. *Journal of Cleaner Production*, 202, 293–298. <https://doi.org/10.1016/j.jclepro.2018.08.135>
- Xiao, L., Zhang, G., Zhu, Y., & Lin, T. (2017). Promoting public participation in household waste management: A survey based method and case study in Xiamen city, China. *Journal of Cleaner Production*, 144, 313–322. <https://doi.org/10.1016/j.jclepro.2017.01.022>
- Xu, L., Ling, M., Lu, Y., & Shen, M. (2017). Understanding household waste separation behaviour: Testing the roles of moral, past experience, and perceived policy effectiveness within the theory of planned behaviour. *Sustainability (Switzerland)*, 9(4), 625–652. <https://doi.org/10.3390/su9040625>
- Zambrano-Monserrate, M. A., Ruano, M. A., & Yoong-Parraga, C. (2020). Households from developing countries do not sort their solid waste: truth or myth? *Journal of Environmental Planning and Management*, 63(14), 2577–2592. <https://doi.org/10.1080/09640568.2020.1741341>



# Robotics training to improve STEM skills of Islamic boarding school students in Batam

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ARTICLE INFO	ABSTRACT
<p><b>Article history</b>            Received: 2023-06-27            Revised: 2023-10-05            Accepted: 2023-10-20            Published: 2024-02-07</p> <p><b>Keywords</b>            Educational robotics            Islamic boarding school            Robotics training            STEM education            STEM training</p>	<p><i>One potential approach to addressing the challenges posed by the advent of Industry 4.0 and Society 5.0 is to offer robotics training. This endeavor aims to enhance students' foundational understanding of STEM (Science, Technology, Engineering, and Mathematics) disciplines. The study involved collaborating with the Pondok Pesantren Granada, an Islamic Boarding School located in Batam, to provide robotics training as community service activities. The study included 29 trainees: 15 from class XI and 7 from classes X and XII. The teaching was conducted using a combination of didactic instruction, interactive discourse, and hands-on exercises. Trainees are administered a written examination to assess their proficiency level before and after the training program. The training outcomes exhibited a significant improvement in the mean STEM proficiency of trainees, with an increase of 38.15%. Furthermore, a series of activities have been effectively implemented, resulting in trainee satisfaction ratings exceeding 50% concerning course materials, trainer, and teaching equipment. A mere 17% of the individuals undergoing training expressed dissatisfaction with the allocated time, particularly the hands-on component's duration.</i></p>
<p><b>Kata Kunci</b>            Edukasi robotika            Pelatihan robotika            Pelatihan STEM            Pendidikan STEM            Pondok pesantren</p>	<p><b>Pelatihan robotika untuk meningkatkan keterampilan STEM santri pondok pesantren di Batam.</b> Salah satu pendekatan potensial untuk menghadapi tantangan yang ditimbulkan oleh munculnya Industri 4.0 dan Masyarakat 5.0 adalah dengan memberikan pelatihan robotika. Upaya ini bertujuan untuk meningkatkan pemahaman dasar siswa tentang disiplin ilmu STEM (Sains, Teknologi, Teknik, dan Matematika). Penelitian ini melibatkan kerja sama dengan Pondok Pesantren Granada, sebuah pondok pesantren yang berlokasi di Batam, untuk memberikan pelatihan robotika sebagai kegiatan pengabdian kepada masyarakat. Penelitian ini melibatkan 29 peserta pelatihan: 15 peserta dari kelas XI dan 7 peserta dari kelas X dan XII. Pengajaran dilakukan dengan menggunakan kombinasi instruksi didaktik, diskusi interaktif, dan praktik langsung. Para peserta diberikan ujian tertulis untuk menilai tingkat kemampuan mereka sebelum dan setelah program pelatihan. Hasil pelatihan menunjukkan adanya peningkatan yang signifikan dalam rata-rata kemampuan STEM peserta pelatihan, dengan peningkatan sebesar 38,15%. Selain itu, serangkaian kegiatan telah dilaksanakan secara efektif, yang menghasilkan tingkat kepuasan peserta pelatihan melebihi 50% yang berkaitan dengan materi pelatihan, pengajar, dan peralatan pembelajaran. Hanya 17% dari peserta pelatihan yang menyatakan ketidakpuasannya terhadap waktu yang dialokasikan, terutama durasi pelaksanaan praktikum.</p> <p style="text-align: right;">Copyright © 2024, Jamzuri, et al            This is an open access article under the CC-BY-SA license</p> <div style="text-align: right;">  </div>

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## INTRODUCTION

STEM is an educational framework integrating several subjects, namely science, technology, engineering, and mathematics, into a cohesive entity, and many developing countries have extensively adopted this STEM-based education (Sartika, 2019). In recent years, there has been a notable rise in research endeavors of integrating STEM-based education within the educational landscape of Indonesia, particularly from 2015 onwards (Farwati et al., 2021). A notable surge was observed throughout 2019-2020, resulting in a cumulative rise of around 74.1% compared to preceding years. This phenomenon indicates that there has been a significant uptake and implementation of STEM-based education in Indonesia. Nevertheless, based on the data acquired, the implementation of STEM-based education remains predominantly focused in Province East Java and West Java. A significant proportion, precisely 44%, of provinces, including the Kepulauan Riau province, have yet to adopt STEM-focused educational approaches.

The teacher's vision and comprehension bolster the facilitation of STEM-based education. However, a study of 117 scientific instructors found a lack of adequate understanding of STEM-based education among teachers in Indonesia (Nugroho et al., 2019). Furthermore, the insufficiency of suitable facilities and infrastructure impeded the successful execution of STEM education. In the present context, educators assert that STEM-based education can address the essential proficiencies required in the contemporary day, such as the ability to engage in creative and critical thinking, problem-solving, effective communication, and collaborative aptitudes. The assertion is supported by Hafni et al. (2020) and Permanasari et al. (2021) findings. Hafni et al. (2020) showed that STEM-based education could enhance students' problem-solving and critical-thinking abilities. Permanasari et al. (2021) assert that implementing STEM-based education can effectively stimulate students' ideation, mainly when they engage in project-based learning. The utilization of interactive learning technologies can facilitate the introduction of STEM subjects. Robots are a viable educational tool for STEM-focused instruction (Ponce et al., 2022).

Extensive study has been conducted on utilizing robots as educational tools for STEM-based learning, yielding compelling findings. As an illustration, the STEM-oriented educational robot AGROBOT-II, presented by Prayogo et al. (2020), and SpaceR, developed by Nata et al. (2021). Furthermore, Politeknik Negeri Batam (Polibatam) has also designed a STEM-based educational robot kit for high-school students in the Batam region, recognizing the benefits of robots as a medium for learning in STEM-based education. The robot kit that has been designed is additionally furnished with instructional resources that assist educators in facilitating the learning process. In addition to instructional resources, the robot will be engaged in a competition after the session to enhance the students' incentive to study. Chung et al. (2014) found that competition has the potential to stimulate and enhance students' motivation to learn. The educational robot that has been devised does not yield immediate advantages to the population, particularly the local people residing in Batam. The utilization of robots within the Polibatam Robotics Engineering Technology (RET) Study Program is now confined to providing support in students' learning process in the semester's preliminary stages. Community service initiatives were implemented to enhance the study's overall impact and value. This initiative pertains to the adolescent population attending secondary education institutions in the Batam region.

Multiple entities have implemented community service initiatives, enhancing students' competencies within educational institutions. For instance, Irawan et al. (2023) offers training programs to enhance proficiency in BOS (Bantuan Operasional Sekolah) fund management and reporting abilities. On the one hand, the training about soft skills was conducted by Juwito et al. (2022) and Kusumaningrum and Sulistyaningsih (2021). Juwito et al. (2022) offer educational programs to enhance students' personal branding and public speaking abilities. In her work, Kusumaningrum and Sulistyaningsih (2021) offer insights into the concepts of Pancasila and nationalism within the context of the digital era. Furthermore, Surahmat et al. (2023) conducted service activities within the realm of robotics, employing robots derived from research to serve as tourism assistants in various tourist destinations.

The primary objective of this community service initiative is to enhance the STEM proficiencies of students enrolled in a selected educational institution located in Batam. The endeavor consisted of providing robotics education to enhance STEM competencies among high school students, specifically focusing on traditional Pondok Pesantren (Islamic boarding schools). The instruction took place at the Pondok Pesantren Granada, among the Islamic boarding schools in Batam. The selection process was initiated in response to the request made by educators at the institution, who expressed a desire to incorporate STEM education into their curriculum to benefit their students. In addition, the selection of the community service site was based on the school's ongoing deficiency in supporting educational infrastructure. Provisions are made in the form of robot kits, educational materials, and evaluative test items to facilitate the training endeavors and assess the progress in students' comprehension pre-training and post-training. In addition to engaging in various activities, we administered questionnaires about disseminating instructional content to assess trainee's satisfaction with the training sessions.

This present study will delineate the various aspects of community service, organizing the explanations into distinct sections. The materials and methodologies employed in the service program will be examined later. Subsequently, the discourse examines the outcomes of the service actions, which will be closed in the conclusion section.

## METHOD

The initiation of community service activities includes the first preparation of educational resources, encompassing robot kits, instructional materials, assessment items, and surveys. In addition, the training program incorporates a robot kit as an educational tool for trainees to engage in hands-on exercises. After completing the learning activities, an assessment was conducted to evaluate the student's abilities. This assessment involved administering pre-prepared test questions and assessing the student's satisfaction levels upon completing the activities.

### The Angry Froggie Robot Kit

A wide array of media platforms can be employed to impart knowledge about STEM subjects to kids. For instance, the educational platform Noftiana et al. (2019) employs Scratch media to introduce and elucidate several physics ideas. Moreover, didactic tools as a practical medium are also highly prevalent. Muslim et al. (2018) use the Electric Motor Control (EMC) didactic package as a pedagogical tool to impart knowledge about electrical power systems. The motor didactic equipment has the potential to be enhanced with an embedded controller device, which can facilitate the learning process for additional students who are interested in acquiring knowledge about embedded system-based control systems, as suggested by Matsuzaki et al. (2019).

The provided training incorporated a hands-on component involving a robotic kit named "Angry Froggie", designed by robotics researchers affiliated with Polibatam. The visual representation and structural characteristics of the Angry Froggie device are depicted in Figure 1. Figure 1. (a) depicts the CAD design of the Angry Froggie, whereas Figure 1. (b) displays the constructed robot prototype. The comprehensive specs of the Angry Froggie utilized in training exercises are presented in Table 1. The Angry Froggie resembles several well-known robot kits, specifically BEAM and LEGO. The primary objective behind the design of these robots was to serve as an educational tool. However, the BEAM system, established by Boya-Lara et al. (2022), is primarily designed to cater to the needs of engineering students. In contrast, the LEGO set presented by Addido et al. (2023) emphasizes enhancing students' comprehension of Newtonian physics. In contrast to the pair mentioned above of robots, the Angry Froggie we developed was purposefully meant to serve as an educational tool tailored for high school pupils. The featured information for educational purposes primarily focuses on subjects linked to STEM.

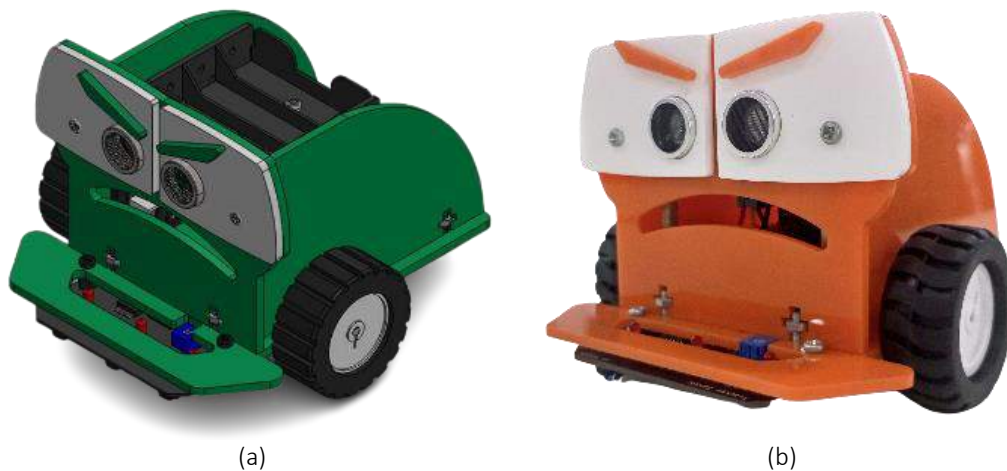


Figure 1. Visualization of (a) CAD design of Angry Froggie, and (b) prototype of Angry Froggie.

**Table 1.** Specifications of "Angry Froggie".

Specifications	Value
<i>Dimension</i>	13cm×12cm
<i>Power Source</i>	4.5 VDC Battery
<i>Robot controller</i>	Microcontroller ESP8266
<i>Robot actuator</i>	2×DC Motor with wheel
<i>Robot sensor</i>	HC-SR04 ultrasound sensor Three-channel infrared sensor Remote control receiver
<i>Capabilities</i>	Avoiding obstacles Following line Controlling by remote Generating music



During the training sessions, trainees must assemble Angry Froggie parts, establish connections between electronic components, and code the Angry Froggie controller. The Angry Froggie possesses several programmable capabilities, encompassing line following, obstacle avoidance, remote control adherence, and emission of sounds with distinct tonal qualities. Several of these features are absent in the robot kits mentioned above. In addition, the enraged amphibian Angry Froggie is outfitted with an ESP32 microcontroller with Wi-Fi and Bluetooth capabilities. Utilizing these two communication features enables the Angry Froggie to be programmed remotely, eliminating the need for physical cable connections.

### Teaching Method and Materials

The Angry Froggie kit has educational resources specifically tailored for high school students and those new to robotics. Furthermore, this particular content possesses the potential to serve as a valuable instructional resource for educators seeking guidance on the intricacies of the learning process. The provided content encompasses elucidations regarding the constituent elements of robots, the many stages involved in robot assembly, the stages involved in installing electronic components, and the fundamental principles of robot programming.

The initial content provided to the trainee pertains to Angry Froggie's fundamental components and operational capabilities. The pedagogical approach employed for the dissemination of this content involves the utilization of lectures and discussions. Initially, the trainer elucidated the subject matter by employing the presentation slide, as depicted in Figure 2, where Figure 2 (a) and Figure 2 (b) depict the components comprising the Angry Froggie kit, including the body, sensors, and electronics circuits, both situated at the front and the back of the robot. The Angry Froggie body was constructed using acrylic material, with a specific design facilitating convenient assembly and disassembly. It was propelled by a pair of wheels attached to a direct current (DC) actuator. The sensors integrated into the Angry Froggie include a distance sensor for distance measurement and a 3-channel infrared sensor for line detection. Alongside incorporating sensors, the Angry Froggie was equipped with an electronics controller known as the NodeMCU ESP8266, which served as its principal controller. The controller mentioned above is also linked to the DC motor controller. The educational approach involves acquainting trainees with the names and functions of robot elements, facilitating their comprehension of fundamental aspects of robot components. The lecture segment focused on STEM's science and technology element, elucidating the operational principles of DC motors, motor drivers, sensors, and microcontrollers to the trainee.



Figure 2. "Angry Froggie" (a) isometric view, and (b) view from the back.

After explaining the various components of the Angry Froggie and their respective functionalities, the training session will proceed with a practice component involving hands-on assembly. During the workshop, the trainer provided a concise overview of the many processes of assembling Angry Froggie, accompanied by presentation slides visually represented in Figure 3 (a). Initially, trainees receive instruction on the engineering components of robotics, encompassing the assembly of fasteners and the electronics integration of the robot. The presented slide includes a numerical code assigned to each stage of the robot assembly, positioned at the upper right corner of the picture, to reduce problems in installation. The assembly procedure commenced with affixing the Angry Froggie wheels onto the chassis, culminating in the attachment of the ultrasonic sensor holder, which serves as the visual apparatus of the robot. Subsequently, the implementation of the electronic system may commence. In electronics components installation, circuit designs are presented visually, as depicted in Figure 3 (b), as instructional aids for trainees. Trainees are mandated to engage in collaborative, hands-on exercises, including the assembly of robots. Consequently, the session provides an opportunity to develop and enhance the student's communication and collaboration skills.



Figure 3. Angry Froggie assembly process on (a) mechanics components, and (b) electronics components.

The most recent instructional session delivered by the trainer focused on fundamental robot programming. The teaching materials incorporated a crucial program in this instructional session. The objective was to develop a fundamental comprehension of programming and algorithms, encompassing STEM's technological and mathematical aspects. During this programming instructional session, the instructor will utilize Arduino as an Integrated Development Environment (IDE) for program creation. Arduino is commonly employed as an instructional tool in the STEM domain because of its widespread usage as an Integrated Development Environment (IDE), as evidenced by the research undertaken by Pech and Novak (2020) and Prihatiningrum et al. (2022).

The instructional resources utilized for programming are depicted in Figure 4. In Figure 4 (a), a pedagogical activity is depicted wherein the robot generates auditory stimuli. This instructional material introduced trainees to fundamental programming, including debugging and transferring source code onto the Angry Froggie. The programming of the basic Angry Froggie movement was implemented following the depicted procedure in Figure 4 (b). During this instructional session, trainees were introduced to the fundamental principle of robot locomotion, which involves the rotation of two DC motors. Subsequently, the trainees get acquainted with sensor coding and fundamental algorithms through the provided instructional material. The sensors and primary algorithmic material are depicted in Figure 4 (c). In this instructional material, trainees were required to use ultrasonic sensor readings to program Angry Froggie to navigate obstacles effectively. In addition, the previous course encompassed the coding for the line follower, as depicted in Figure 4 (d) of the presentation slides. In the last session, trainees must develop a program for Angry Froggie to track a line three-channel infrared.



Figure 4. Coding lesson for (a) generating tone, (b) rotating the motors, (c) avoiding objects, and (d) following the track.

## Evaluation Methods

Pre-assessment and post-assessment were administered to the trainees of the training program in order to assess the efficacy of the training program. The pre-assessment and post-assessment comprise a set of 10 questions related to the STEM field, with both assessments featuring identical question content. Trainees must ensure the completion of the examination within a time frame of 20 minutes. The pre-assessment administration occurred before the training commenced, while the post-assessment was administered after the completion of the program. The pre-assessment and post-assessment were employed to assess the trainee's acquired knowledge after the training. In conjunction with administering pre-assessment and post-assessment, trainees in the training program were also provided with a feedback form after finishing the training program. The present feedback form encompasses the feedback provided by trainees regarding many aspects of the training program, including their answers to the presenters, material, training duration, equipment, and any further ideas on the training activities.

## Training Participants

Specific STEM education programs prioritize the instruction and development of high school pupils. Specialized training programs exclusively cater to female pupils (Lou et al., 2014; Olmedo-Torre et al., 2018). In this program, we targeted participants from Islamic Boarding School students. A total of 29 students were present from the Pondok Pesantren Granada as trainees. **Error! Reference source not found.** illustrates the allocation of participation through a pie chart. It can be observed that most individuals who took part in the training exercise were enrolled in the XI grade. Approximately 15 individuals were reached, seven belonging to grades X and XII. During the classroom period, the trainees were assigned to ten separate groups by randomly distributing the participants within each group. An assistant trainer, a freshman in the RET Study Program at Polibatam, accompanied every group.

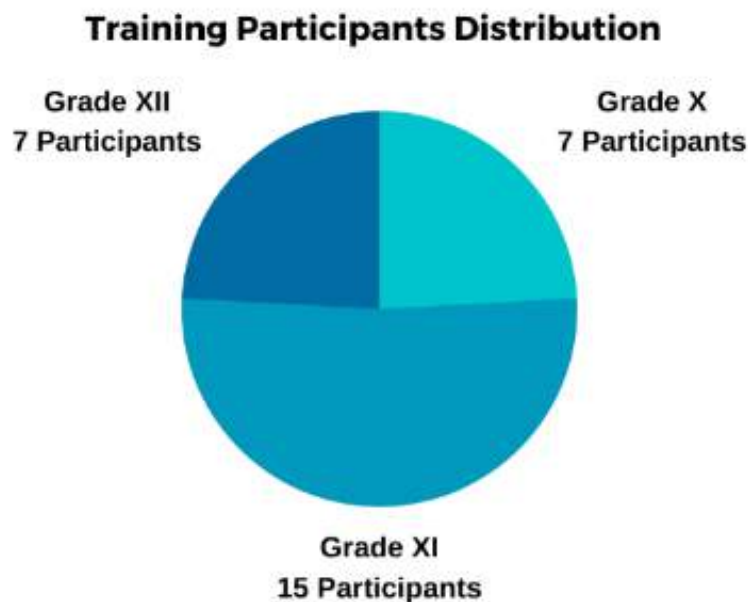


Figure 5. Trainees Distribution.

## RESULTS AND DISCUSSION

This part describes the outcomes and comments derived from the robotics training session. Initially, the outcomes of executing the conducted operations are delineated. Next, we shall elucidate the outcomes associated with the augmentation of knowledge acquisition among the individuals undergoing training. The concluding section provides an overview of the satisfaction of the conducted activities. The subsequent sub-section comprehensively explains the results obtained and their subsequent discussion.

### Training Activities

Batam City has implemented many programs aimed at enhancing STEM capabilities. The Project-Based Learning (PjBL) model was introduced for students in junior high school (SMP) (Storina, 2022). In addition, an assessment was conducted on the efficacy of educational resources on hydrocarbon content among high school students in Batam (Laila et al., 2022). Lastly, A training session on Arduino programming was administered to madrasah students in Batam City (Candra & Pangaribuan, 2023). Our activity is proposed for an Islamic Boarding School named Pondok Pesantren Granada. The Pondok Pesantren Granada, located in Kampung Jabi, Batam City, hosted robotics training classes on Saturday,



November 19, 2022. The gathering was attended by 29 students, three lecturers, and one lecturer from Pondok Pesantren Granada. The school's mosque room served as the venue for many activities. The activities commence at 9:00 a.m. and conclude at 4:00 p.m., with a designated interval from 12:00 to 13:00. The activity in question is visually represented in Figure 6 and Figure 7. The commencement of the activity was initiated by the head of the Pondok Pesantren Granada and trainer representatives from the Polibatam, as indicated in Figure 6 (a). Following the commencement of the inaugural ceremony, subsequent training activities were initiated. Figure 6 (b) illustrates an activity focused on delivering instructional information. Figure 7 (a) showcases a hands-on session centered on installing the Angry Froggie educational robot. Upon concluding all the training activities, the community service committee, trainer, and trainees assembled for a collective photograph, visually represented in Figure 7 (b).



Figure 6. Training activities, (a) opening event, and (b) delivering the training.



Figure 7. Training activities, (a) hands-on practice, and (b) closing event.

### Enhancing the Knowledge of Trainees

The findings from the pre-assessment and post-assessment inquiries demonstrated a noteworthy augmentation in the trainees' fundamental comprehension of the subject matter. According to the statistical data, trainees' mean score before their involvement in the training program was 59.66 points. In the interim, the mean score of trainees increased to 82.41 points after participating in the training program. The pupils had a significant exponential growth of around 22.76 points after participating in the training program. Based on the obtained results, it can be inferred that the exercise, as mentioned earlier, led to a significant enhancement of the trainees' capacity, with an observed rise of 38.15%.

The graphical representation of the enhancement in assessment score based on class level is depicted in Figure 8. The most significant improvement in comprehension was observed in the eleventh grade, exhibiting a cumulative gain of approximately 59.76%. Prior to the commencement of the training, the mean score attained by the trainee in class XI was recorded as 54.67. However, after they participated in the training, a notable increase in the average score was seen, reaching around 87.33. Although grades X and XII demonstrate a comparable enhancement in exam scores, the

percentage increase in grade X was approximately 18.60%, while class XII exhibited a slightly higher increase of approximately 18.75%.

Average Pre-Test and Post-Test Score Each Grade

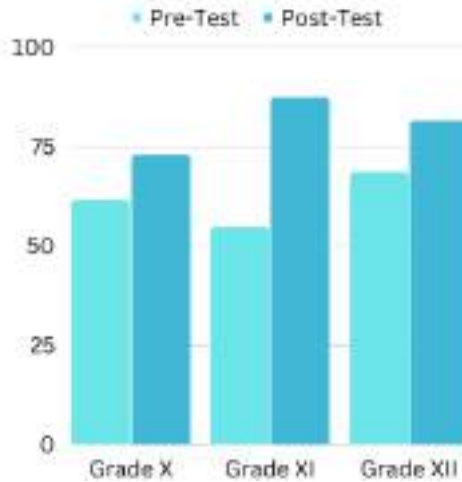


Figure 8. The mean score of pre-assessment and post-assessment of each grade.

### Levels of Satisfaction

The training satisfaction of trainees is depicted in Figure 9 through a pie chart. The above findings were derived from a survey administered to a cohort of 29 individuals undergoing training. The questionnaire responses were categorized into four sections: trainer capabilities, equipment, materials quality, and course duration. The questionnaire findings from the trainees are depicted in Figure 9. Based on the acquired data, it can be inferred that most trainees expressed satisfaction with the conducted activities.

Concerning the caliber of the content offered, around 59% of trainees indicated that the provided material was of exceptional quality. Furthermore, none of the trainees indicated that the material was deficient. In contrast, according to the speaker's perspective, a majority of 59% of the trainees expressed that the presenter effectively delivered the content. The remaining 41% of trainees indicated that the trainer effectively delivered the material. Approximately 65% of trainees indicated that the equipment provided was sufficient to implement the training program. However, concerning the amount of training, approximately 17% of the trainees expressed that the allocated time for training was inadequate. This finding was corroborated by four trainees who expressed dissatisfaction with the insufficient duration of the training program. In addition, it was noted by four trainees that the hands-on duration in this activity was insufficient. The results obtained from the questionnaire function as a standard against which the efficiency of the provided training can be evaluated, as well as a reference point for improving future community service initiatives.



Figure 9. Training Satisfaction Level.

## CONCLUSION

This study examines the implementation of a robotics training program at the Pondok Pesantren Granada to enhance students' comprehension of STEM subjects, specifically focusing on community service activities. Consequently, there was a notable enhancement of approximately 38.15% in the average trainees acquired knowledge as a direct outcome of community service activities. The data analysis revealed that the training activity significantly enhanced the trainee's science, technology, engineering, and mathematics (STEM) knowledge. Furthermore, the trainees expressed overall satisfaction with the conducted instruction, encompassing STEM and other areas of study. The data analysis determined that over 50% of trainees were satisfied with the training materials, presenters, and equipment quality. Nevertheless, a notable proportion of trainees, precisely 17% of the respondents, expressed dissatisfaction with the duration of the training they received, deeming it inadequate. In addition, some trainees expressed a need for further optimization of the time duration, particularly regarding the hands-on component. The service team will assess this questionnaire's answers and inform future enhancements in community service endeavors.

## ACKNOWLEDGEMENT

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## REFERENCES

- Addido, J., Borowczak, A. C., & Walwema, G. B. (2023). Teaching Newtonian physics with LEGO EV3 robots: An integrated STEM approach. *Eurasia Journal of Mathematics, Science and Technology Education*, 19(6), em2280. <https://doi.org/10.29333/ejmste/13232>
- Boya-Lara, C., Saavedra, D., Fehrenbach, A., & Marquez-Araque, A. (2022). Development of a course based on BEAM robots to enhance STEM learning in electrical, electronic, and mechanical domains. *International Journal of Educational Technology in Higher Education*, 19(1), 7. <https://doi.org/10.1186/s41239-021-00311-9>
- Candra, J. E., & Pangaribuan, H. (2023). Pelatihan Arduino untuk pelajar Madrasah Aliyah Negeri Insan Cendekia Batam. *JUPADAI : Jurnal Pengabdian Kepada Masyarakat*, 2(1), 24–31. <http://jurnal-adaikepri.or.id/index.php/JUPADAI/article/view/81>
- Chung, C. J. C., Cartwright, C., & Cole, M. (2014). Assessing the Impact of an Autonomous Robotics Competition for STEM Education. *Journal of STEM Education: Innovations and Research*, 15(2), 24–34.
- Farwati, R., Metafisika, K., Sari, I., Sitingjak, D. S., Solikha, D. F., & Solfarina, S. (2021). STEM Education Implementation in Indonesia: A Scoping Review. *International Journal of STEM Education for Sustainability*, 1(1), 11–32. <https://doi.org/10.53889/ijses.v1i1.2>
- Hafni, R. N., Herman, T., Nurlaelah, E., & Mustikasari, L. (2020). The importance of science, technology, engineering, and mathematics (STEM) education to enhance students' critical thinking skill in facing the industry 4.0. *Journal of Physics: Conference Series*, 1521(4), 042040. <https://doi.org/10.1088/1742-6596/1521/4/042040>
- Irawan, I., Muda, I., & Irawan, A. (2023). Training to improve skill in managing and reporting regular BOS Fund in SMA/SMK. *Journal of Community Service and Empowerment*, 4(1), 122–129. <https://doi.org/10.22219/jcse.v4i1.23847>
- Juwito, J., Achmad, Z. A., Kaestiningtyas, I., Dewani, P. K., Wahyuningtyas, D., Kusuma, R. M., Mas'udah, K. W., Sari, T. P., & Febrianita, R. (2022). Public speaking and personal branding skills for student organization managers at Dharma Wanita High School Surabaya. *Journal of Community Service and Empowerment*, 3(1), 9–17. <https://doi.org/10.22219/jcse.v3i1.18596>
- Kusumaningrum, D. N., & Sulistyaningsih, T. (2021). The internalization of nationalism and Pancasila for teenager as the value to living in the era of digital transformation. *Journal of Community Service and Empowerment*, 3(2), 77–87. <https://doi.org/10.22219/jcse.v3i2.20595>
- Laila, E., Sudarmin, S., & Prasetya, A. T. (2022). Integrated vlog media development of ethno-STEM to equip conservation character and chemistry literacy. *International Conference on Science, Education, and Technology*, 8, 1121–1128. <https://proceeding.unnes.ac.id/index.php/ISSET/article/view/1903>
- Lou, S.-J., Tsai, H.-Y., Tseng, K.-H., & Shih, R.-C. (2014). Effects of implementing STEM-I project-based learning activities for female high school students. *International Journal of Distance Education Technologies*, 12(1), 52–73. <https://doi.org/10.4018/ijdet.2014010104>
- Matsuzaki, T., Elfadil, O., Horiuchi, K., Shiratsuchi, H., & Mashiko, K. (2019). Embedded controller based learning system for DC motor control. *International Journal of Innovative Computing, Information and Control*, 15(3), 997–1007. <https://doi.org/10.24507/IJIC.15.03.997>
- Muslim, S., Wrahatnolo, T., Handayani, S., Rahmadyanti, E., Kusumawati, N., & Joko, J. (2018). Development of electrical motor control learning media as learning support for electrical power installation courses in the department of



- electrical engineering. *Journal of Educational Science and Technology (EST)*, 1(1), 170.  
<https://doi.org/10.26858/est.v1i1.7278>
- Nata, I. P. R., Yasana, I. W., Setiawan, K. A., Sutamara, S. G. D. Y., Widiada, G. S., & Mardana, I. B. P. (2021). Smart Project Educational Robot (SpaceR) sebagai robot edukasi. *Jurnal Aplikasi Dan Inovasi Iptek (JASINTEK)*, 3(1), 56–64.  
<https://doi.org/10.52232/jasintek.v3i1.63>
- Noftiana, Nasir, M., & Islami, N. (2019). Developmental scratch-based online learning media in dynamic electric dynamic topic to increase students concept understanding in students junior high school. *Journal of Physics: Conference Series*, 1351(1), 012014. <https://doi.org/10.1088/1742-6596/1351/1/012014>
- Nugroho, O. F., Permanasari, A., & Firman, H. (2019). The movement of STEM Education in Indonesia: Science teachers' perspectives. *Jurnal Pendidikan IPA Indonesia*, 8(3), 417–425. <https://doi.org/10.15294/jpii.v8i3.19252>
- Olmedo-Torre, N., Carrera, M. P., Lopez-Beltran, M., Gomez, M. S., & Lopez, D. (2018). Mentoring female high school students for a STEM career. *2018 IEEE Frontiers in Education Conference (FIE), 2018-October*, 1–5.  
<https://doi.org/10.1109/FIE.2018.8658683>
- Pech, J., & Novak, M. (2020). Use Arduino and Micro:bit as teaching platform for the education programming and electronics on the STEM basis. *2020 V International Conference on Information Technologies in Engineering Education ( Inforino )*, 1–4. <https://doi.org/10.1109/Inforino48376.2020.9111798>
- Permanasari, A., Rubini, B., & Nugroho, O. F. (2021). STEM education in Indonesia: Science teachers' and students' perspectives. *Journal of Innovation in Educational and Cultural Research*, 2(1), 7–16.  
<https://doi.org/10.46843/jiecr.v2i1.24>
- Ponce, P., López-Orozco, C. F., Reyes, G. E. B., Lopez-Caudana, E., Parra, N. M., & Molina, A. (2022). Use of robotic platforms as a tool to support STEM and Physical Education in developed countries: A DESCRIPTIVE ANALYSIS. *Sensors (Basel, Switzerland)*, 22(3), 1037. <https://doi.org/10.3390/s22031037>
- Prayogo, S. S., Permadi, Y., & Kusuma, T. M. (2020). Rancang bangun Agrobot-II: Robot edukasi penanam benih tanaman padi dengan kendali jarak jauh. *Jurnal Ilmiah Teknologi Dan Rekayasa*, 25(2), 89–101.  
<https://doi.org/10.35760/tr.2020.v25i2.2676>
- Prihatiningrum, N., Barri, M. H., Pramudita, B. A., Fuadi, A. Z., Istiqomah, I., & Budiman, F. (2022). Workshop Arduino untuk menunjang pembelajaran STEM untuk guru IPA SMP. *JMM (Jurnal Masyarakat Mandiri)*, 6(5).  
<https://doi.org/10.31764/jmm.v6i5.9783>
- Sartika, D. (2019). Pentingnya pendidikan berbasis STEM dalam Kurikulum 2013. *JISIP (Jurnal Ilmu Sosial Dan Pendidikan)*, 3(3), 89–93. <https://doi.org/10.58258/jisip.v3i3.797>
- Storina, R. (2022). Implementasi model PjBL - STEM terhadap kreativitas siswa pada mata pelajaran IPA di SMP Negeri 5 Batam. *BIODIDAK: Journal of Biology Education and Learning*, 2(2), 87–93.  
<https://www.journal.unrika.ac.id/index.php/BioDidak/article/view/4860>
- Surahmat, I., Rustan, I. K., & Kusuma, S. G. (2023). Tourism assistance through an example of content innovation programs at Kedung Gajah Sentolo: A robot demonstration. *Journal of Community Service and Empowerment*, 4(2), 229–235. <https://doi.org/10.22219/jcse.v4i2.24995>



# Empowering high school students with online game literacy


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ARTICLE INFO	ABSTRACT
<p><b>Article history</b>            Received: 2023-09-13            Revised: 2024-02-06            Accepted: 2024-02-06            Published: 2024-02-21</p> <p><b>Keywords</b>            Batan            Gadget            Literacy            Online game</p>	<p><i>The COVID-19 pandemic has led to a surge in electronic devices and smartphones in education, causing students to spend more time on screens. The mobile game market in Indonesia has grown significantly, with 3.45 billion downloads in 2022. Online games can be addictive and psychologically impactful, making it crucial to instill literacy and parental supervision to prevent addiction. In Bengkalis, Indonesia, a community service activity was conducted to foster online game literacy among students, teachers, and parents. The activities involved interactive methods and forum group discussions, using LCD media and PowerPoint. The study found that children often play games for entertainment without realizing the negative effects of excessive use, leading to smartphone addiction. Factors influencing this increase include pandemic conditions, lack of self-control, and a lack of understanding of the negative impact of excessive gadget use. The school's strict rules on bringing gadgets to school have been successful in promoting online game literacy. The program aimed to increase student knowledge and critical thinking in interacting with smartphones, fostering understanding between students and parents.</i></p>
<p><b>Kata kunci</b>            Batan            Game online            Gawai            Literasi</p>	<p><b>Pemberdayaan siswa SMA melalui literasi game online.</b> Pandemi COVID-19 telah menyebabkan lonjakan penggunaan perangkat elektronik dan ponsel pintar di dunia pendidikan, sehingga menyebabkan siswa menghabiskan lebih banyak waktu di depan layar. Pasar game seluler di Indonesia telah tumbuh secara signifikan, dengan 3,45 miliar unduhan pada tahun 2022. Game online dapat membuat ketagihan dan berdampak secara psikologis, sehingga penting untuk menanamkan literasi dan pengawasan orang tua untuk mencegah kecanduan. Di Bengkalis, Indonesia, kegiatan pengabdian masyarakat dilakukan untuk menumbuhkan literasi game online di kalangan siswa, guru, dan orang tua. Kegiatan yang dilakukan menggunakan metode interaktif dan forum diskusi kelompok, dengan menggunakan media LCD dan Power Point. Studi tersebut menemukan bahwa anak-anak sering bermain game untuk hiburan tanpa menyadari dampak negatif dari penggunaan berlebihan sehingga berujung pada kecanduan ponsel pintar. Faktor yang mempengaruhi peningkatan tersebut antara lain kondisi pandemi, kurangnya pengendalian diri, dan kurangnya pemahaman mengenai dampak negatif penggunaan gadget berlebihan. Aturan ketat sekolah dalam membawa gadget ke sekolah berhasil mendorong literasi game online. Program tersebut bertujuan untuk meningkatkan pengetahuan dan berpikir kritis siswa dalam berinteraksi dengan smartphone, menumbuhkan pemahaman antara siswa dan orang tua.</p> <p style="text-align: right;">Copyright © 2024, Suyanto et al.            This is an open access article under the CC-BY-SA license</p> <div style="text-align: right;">  </div>

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## INTRODUCTION

The pandemic left people dependent on software such as computers and gadgets, especially children who were of school age at the time. Based on regulation of the Minister of Education and Culture No. 4 of 2020, online learning is a solution for management during the coronavirus disease (COVID-19) emergency. As a result, the use of devices is very important in online learning because students tend to interact with screen devices in doing assignments and discussions (Syarifudin, 2020; Dampati et al., 2020) This phenomenon bequeaths the intimacy of student behavior with computers or

gadgets and passive exposure to screens for a long time, either through smartphones, tablets, televisions, video games, or computers (Kaye et al., 2020) The fact is that the average child uses gadgets or relies on gadgets excessively in various daily activities.

The difficulty of parents and educators to take precautions for children, ranging from limiting use to not bringing gadgets into the scope of the education area, is one challenge. Based on the Internet Service Providers Association (APJII) report Internet Penetration and Behavior Survey 2023, most online game users use long durations when playing (Muhammad, 2023)

Other data also emphasizes the rise of the mobile game market in Indonesia. Throughout 2022, *Indonesian gamers* downloaded a total of 3.45 billion mobile games. The report from data.ai released the *State of Mobile 2023 Gaming Report*. Based on the data they collected, Indonesia recorded 3.45 billion mobile game downloads in 2022, up around 320 million from the previous year. Specifically for the Android game market, Indonesia ranks third, behind Brazil and India (Kaonang, 2023). From the understanding of online games above, it increasingly emphasizes that playing online games only needs two things, namely computer devices which in this case can be replaced with smartphones and internet quotas. Playing online games can be a refreshing activity for teenagers on the sidelines of teaching and learning activities at school, where teenagers or students today prefer to play online games rather than exercising or interacting like children in the past (Efendi et al., 2021). They choose between tight times and can do refreshing activities quickly, easily, and cheaply. The situation also does not depend on the participation of friends in large numbers.

Online games can be addictive for their users and have a psychological impact, especially on children. To avoid negative influences, it is necessary to instill literacy and parental supervision by paying attention to children to keep using online games. In a positive context, this activity is just a time filling and not a priority in life. Playing online games can be a refreshing activity for teenagers on the sidelines of teaching and learning activities at school. The increase in the number of online game users cannot be separated from the increasing development of technology. The existence of social media which is a facilitator in helping the dissemination of online games also participates.

The influence of Internet development is growing rapidly in the city of Bengkalis, especially the use of electronic devices, *gadgets*, or *smartphones*. *gadgets* in this modern era, every circle of society, both young and old, has gadgets. The need for *gadgets can be realized that gadgets have benefits for self-productivity to make it easier to do anything in this modern era*. However, *gadgets* also leave a negative impact, one of which is addiction to playing *online games* among children, so the project team must instill literacy. In a simple sense, literacy is the ability to read and write. But with the times, literacy seems to be more than just reading and writing. Literacy is also defined as the ability to speak, count, solve problems found in everyday life, understand, and use the potential of self-ability.

The service team with the Bengkalis District Education Office and Bantan Senior High School 2 conducted counseling to assist parents and teachers in dealing with students, so the team planned digital literacy counseling activities on the impact of *online games* among adolescents in the Bengkalis district. The selection of high school students is because they are classified as early adolescents (11-14 years) and middle adolescents (15-17 years). Adolescence is the transitional period between childhood and adulthood, consisting of three phases: early adolescence, middle adolescence, and late adolescence (18-20 years). This period has reached sexual and physical maturity, the development of reasoning, and making decisions regarding education and occupation (Wilson, 2023; Ernawati, 2021)

Bengkalis is one of the regencies in Riau province and directly borders neighboring Malaysia and Singapore. With a population in 2020 of 593,397 people. Districts have access to advanced and adequate facilities and infrastructure. Educational facilities ranging from low to high levels are spread in various sub-districts in Bengkalis Regency, one of which is in the Bantan sub-district which is the location of this service already has 13 kindergartens, 32 elementary schools, 8 junior high schools, and 3 high schools (ppk-kp3k.kkp.go.id/). Therefore, in this case, the service team chose one level of education, namely Senior High School, at SMA Negeri2 Bantan, Bengkalis Regency. SMA N 2 Bantan Bengkalis is one of the 3 high schools in Bantan sub-district. The SMA Negeri2 Bantan has an A accreditation and uses the 2013 curriculum to guide the learning process. The school provides various forms of infrastructure for its students, such as classrooms, laboratory rooms, and library rooms. In addition, it supports the learning process by providing easy access for students, namely the internet network and Telkomsel Flash, which can be used by every student in their school (Sekolah, 2013). This article describes how connecting the empowerment of high school students through online gaming literacy with the Sustainable Development Goals (SDGs) number 4 (United Nation, n.d.) is an interesting and important step in modern education.

## METHOD

In this community service activity, SMA N 2 Bantan Bengkalis as a partner presented 36 students and 10 teachers and parents. This counseling seeks to foster online game literacy among participants. Interactive methods implemented through forum group discussions (FGD) related to the application of rules, awareness, and impact of playing online games. Counseling activities are carried out in three stages, including; First, the lecture method was conducted about the introduction of the digital area and the benefits of digital literacy. In this case, the participants were introduced to the world of online games and e-sports. Participants have explained the negative impact of playing online games. In the

second stage, the dialogue method was used to explore further the curiosity of service participants in terms of digital literacy and online games. This session was used to listen and share experiences from the presentation of service participants. The team also shared insights and solutions that will be faced in the future as a result of using online activities. By integrating sports literacy into high school curricula and aligning it with SDG principles, schools can create a supportive, inclusive, and innovative learning environment.

## RESULTS AND DISCUSSION

Students were very enthusiastic during the socialization activities. In counseling activities, material was distributed through lecture methods that use LCD media and PowerPoint. This method can be used for large groups, and the thing to note is that the delivery is interesting and not boring. Mastery of attitude, loud and clear voice, gaze directed to participants, standing position, and use of audio-visual media are all elements that must be known by the executor or presenter.

Students may only bring gadgets with the teacher's permission and are indeed used in the Lesson." *Control from the school in the form of rules not to bring gadgets to school. Because children don't care. We can call this anti-social attitude autistic,*" conveyed by the deputy head of curriculum, Sarini S.Pd. Similar opinions were also found in several studies, where playing online games can isolate themselves which causes a lack of direct social interaction and has an impact on eye health, (Novrialdy, 2019)lack of ability to control time and life (Fauzi, 2023).

For parents, the use of gadgets is very troubling. This has created a gap between them because the important role and fear of losing gadgets have shifted their position as parents and families. A crisis of courtesy or caring they feel they need to apply harsh measures by scolding or using threats against children. For parents, such control means they must be strict with the child, although they also admit that it is not entirely effective. Their anger and disappointment arise when they find out that children only use cell phones to play games.

Based on observations, the rules applied by SMA N 2 Batan can be said to be successful not only because students obey but the unstable signal in the area provides support for students not to bring gadgets to school. It is known that online games are very dependent on a stable network. This condition does not exclude students who are also gamers and even winners in sub-district-level competitions.

*I play FF (Free Fire), if I play 2-4 hours a day, sometimes more. The advantage can be many friends from everywhere, abroad too. So you can learn to learn English too. Create an exercise. He has also participated in the 2nd place at the sub-district level. Even then I was happy. (HK, 16 years old)*

Online games tend to use English, and interaction in the form of text and voice is needed considering that players can be met from various countries. So playing online games will train English skills and increase vocabulary. This coordination is very important to build team cohesiveness.

*I usually play ML (Mobile Legend) and FF. as we know.. Also actually like to play without remembering the time. But what else, Look for entertainment, level up but lose the quota quickly runs out. hahaha. Get angry (parents) too. (NR, 17 years old)*

ML and FF games are types of *wargaming*, namely innovative and newly designed interactive war games that bring together cyber practitioners, policy writers, and decision-makers to gain experience and understanding through interactive *gameplay* in a virtual environment (Long, 2020; Nugroho, 2021; Larreina-Morales, 2023). In playing, the player must practice to be able to concentrate fully by coordinating his hands, eyes, and mind. The ability to read the opponent's movements is accompanied by strategy. People who often play online games and tend to be addicted will be considered individualist and egocentric. However, the game's structural features have a significant role in the potential development of compulsive gambling (Auer & Griffiths, 2023). From a sociological perspective, these conditions can endanger the social life of individuals where they may become closed and distant from the surrounding environment even negligent by forgetting the activities they should do(Safitri, 2020). One parent said in FGD:

*So sad. Sometimes I just keep him quiet. Eat the stuff (gadgets) it's brought. Sometimes I don't know... It's sad to see that we've been ignored. (IM, 39 years old)*

The statement had the students blushing and consciously admitting what the parents and teachers said. Parents also end up often giving sanctions and threats so that children stop playing. Effective sanctions according to these parents are in the form of not being given pocket money so that they do not have a quota for using play. According to Syarief (2022), it is a form of guidance and supervision of parents.

Humans were created as perfect beings, that perfection by the presence of reason. Reason allows man to consider and distinguish between good and bad. The existence of technology should only be supported in facilitating human work,

not the other way around, making humans slaves of technology. Based on the findings above, playing online games does not always have a negative impact but can also present a positive side. Like Grose (2022), online games have negative and positive effects on social interactions. The negative impact is that they will be isolated from the real world due to spending too much time playing online games. Negative effects of playing online games. Currently, games are also e-sports, even competitions are also carried out starting from the level. The author found this because one of the students shared a story from his experience winning the tournament. This story was heard by all participants including teachers and guardians so that they also understood the positive impact of playing games. The positive effect is that they can distantly interact with others because they cannot meet in person. Therefore, students need to avoid online gaming addiction by limiting and keeping an eye on good patterns and making online gaming a recreational activity.

The results of the FGD also show the identification of gaps in students' knowledge and can implement targeted interventions, such as the planting carried out in this program, both extension workers, educators, parents, and students effectively gain understanding. The program's focus is aimed at increasing student knowledge and being able to think critically when interacting with smartphones.

Instilling understanding between students, and parents has shown results where openness results in one. The effort can also erode mutual suspicion or bad thinking about the interactions that students do. Both parties must also be able to instill control for themselves and others. Creatively, they can create self-identity digestion from the characters used according to the desired character (Askamal, 2021). Because playing can enhance cognitive stimulation, virtual socialization opportunities, and mental health by reducing anxiety and stress (Barr,2022; Brugger,2021; Vargas-Iglesias, 2020). These results are expected to confirm interventions in closing the suspicion gap and nurturing scientific intelligence among participating students. In addition, providing input and assistance so that *online games* and activities are carried out can lead to a positive direction, namely, creating e-sport athletes.



Figure 1. Documentation after FGD

Games are entertainment, and children or teenagers in general play games to entertain themselves without realizing the negative effects if not used proportionately. Self-control can increase self-control in controlling the use of smartphones because the impact that low self-control can have on using smartphones will result in smartphone addiction (Larasati, 2021b). In school adolescents, low self-control will result in smartphone addiction.

*Smartphone* addiction is a behavior of attraction or addiction to smartphones that may become a social problem such as withdrawal and difficulty in the performance of daily activities or as a disorder of implies control of oneself (Ytre-Arne, 2019; Kwon et al., 2013). For this reason, parents and teachers need to pay attention to adolescents and maintain communication with others, especially parents, Adolescent behavior control also needs to be carried out by teachers while at school (Biscop, 2019: Larasati, 2021)

Self-control difficulties in adolescents were also conveyed by Kusumayanthi (2021) and Fadhilah (2022) that adolescents find it difficult to control the use of gadgets, adolescents experience symptoms of gadget addiction and cause individual attitudes or indifference to the surrounding environment. The picture of the digital behavior of young people shows a lack of control of digital behavior such as spending a lot of time playing with gadgets, lack of activities, and wasteful in buying internet quota to support applications in gadgets. Factors that influence the increase in gadget use are pandemic conditions that affect how to socialize, lack of self-control and learning styles during the pandemic and lack of understanding of the negative impact of excessive gadget use.



This information was obtained from interviews with several teenagers at SMAN 2 Batan such as the intensity of time in the use of gadgets increased the time, the purchase of internet quota that increased so that parents also complained and many teenagers who gathered in places that provide wifi to play games. In addition, adolescents are quite aware of the adverse effects of excessive use of gadgets such as lack of direct socialization, speaking with bad sentences, lack of manners in behavior, not focusing on learning, eye pain, headaches, and lack of enthusiasm in doing activities.

By strengthening collaboration between universities, and schools, and providing relevant counseling and sufficient resources, can improve students' abilities. As teenagers in general, students can prepare themselves to overcome challenges in the academic and professional world in the future. Experience and competence in conducting research play an important role for high school students where students can develop the critical skills necessary to evaluate and analyze actions in depth. In addition, experience helps students develop effective communication skills as it allows students to share their knowledge and ideas with others effectively. On the other hand, students are also expected to be able to be smarter in managing time, being responsible, maintaining cultural civility, and respecting others, especially parents. However, it does not close the possibility that this high school will also start to use game-based learning innovations as strategies and tools to develop sustainable education in the classroom (Pineda-Martínez, 2023). They increasingly influenced by the digital age, looking for a more exciting and interactive learning experience (Anastasiadis et al., 2018).

The integration of e-sports literacy with the Sustainable Development Goals (SDGs) is a crucial aspect of modern education. It can enhance students' quality of education by promoting critical, analytical, and creative learning. It also encourages inclusive and holistic education for all students, fostering their interest in technology and sports. It also promotes the development of the information and communication technology sector, fostering innovation and infrastructure development, reducing reliance on technology, and fostering collaboration between sports industry (Mattila & Pang, 2023) and other stakeholders.

## CONCLUSION

This community service activity successfully achieved its goals and provided skills training to optimize online game literacy awareness wisely. Awareness of the good benefits and wise understanding of playing online games to parents and teachers. In addition, the team also benefited from instilling self-control at home, and at school and participants' self-control about the good and bad of playing online games wisely.

## REFERENCES

- Anastasiadis, T., Lampropoulos, G., & Siakas, K. (2018). Digital game-based learning and serious games in education. *International Journal of Advances in Scientific Research and Engineering*, 4(12), 139–144. <https://doi.org/10.31695/ijasre.2018.33016>
- Askamal, H. (2021). Digestion of gender identity on crossgender players in mobile game toram online Indonesia. *Jurkom*, 4(1), 50–65. <https://jurnalrisetkomunikasi.org/index.php/jrk/article/view/172/78>  
<https://doi.org/10.38194/jurkom.v4i1.172>
- Auer, M., & Griffiths, M. D. (2023). The relationship between structural characteristics and gambling behaviour: An online gambling player tracking study. *Journal of Gambling Studies*, 39(1), 265–279. <https://doi.org/10.1007/s10899-022-10115-9>
- Barr, M., & Copeland-Stewart, A. (2022). Playing video games during the covid-19 pandemic and effects on players' well-being. *Games and Culture*, 17(1), 122–139. <https://doi.org/10.1177/15554120211017036>
- Biscop, Malliet, & Dhoest. (2019). Subversive ludic performance: an analysis of gender and sexuality performance in digital games. *DiGeSt. Journal of Diversity and Gender Studies*, 6(2), 23. <https://doi.org/10.11116/digest.6.2.2>
- Brugger, H., & Henry, A. D. (2021). Influence of policy discourse networks on local energy transitions. *Environmental Innovation and Societal Transitions*, 39(April), 141–154. <https://doi.org/10.1016/j.eist.2021.03.006>
- Dampati, P. S., Veronica, E., & Dwi Christmayanti, N. K. S. (2020). The impact of smartphone and laptop use on the musculoskeletal population of Indonesia on the Covid-19 pandemic. *Gema Kesehatan*, 12(2), 57–67. <https://doi.org/10.47539/gk.v12i2.135>
- Efendi, Z., Christy, T., & Madonna Yuma, F. (2021). Analysis of the impact of online games use on State Students 1 Buntu Pane. *Jurnal Pemberdayaan Sosial Dan Teknologi Masyarakat*, 1(2), 122–127. <https://doi.org/https://doi.org/10.54314/jpstm.v1i2.739>
- Ernawati, P., & Joko Raharjo, T. (2021). Effect of word card games and picture cards on the introduction of the concept of beginning reading and writing in early childhood article info. *Journal of Primary Education*, 10(1), 11–17. <https://journal.unnes.ac.id/sju/index.php/jpe/article/view/33823>
- Fadhilah, L., & Pranungsari, D. (2022). The digital behavior of young drivers after a pandemic in Pogung village, Klaten district. *Ahmad Dahlan University National Psychology Seminar*, 1(1).

- Fauzi, A., Waluyo, L., Fatmawati, D., Zubaidah, S., Weka, S., & Nur, N. (2023). Group mentoring of youth scientists to enhance the students' research literacy. *Journal of Community Service and Empowerment*, 4(2), 351–359.
- Hockenberry, M. J., Wilson, D., & Rodgers, C. C. (2023). *Maternal Child Nursing Care* 7th Edition Now \$ New to This Edition (7th ed.). *EVOLVE*.
- Kaonang, G. (2023). *Indonesia becomes the third largest mobile game market in the world version data.ai*. Hybrid.Co.Id. <https://hybrid.co.id/post/indonesia-pasar-game-mobile-terbesar-ketiga-di-dunia>
- Kaye, L. K., Orben, A., Ellis, D. A., Hunter, S. C., & Houghton, S. (2020). The conceptual and methodological mayhem of "screen time." *International Journal of Environmental Research and Public Health*, 17(10). <https://doi.org/10.3390/ijerph17103661>
- Kusumayanthi, S., & Rusmiyati, M. (2021). Students' engagement in learning English vocabulary via games in Kahoot! *English Journal Literacy UTama*, 6(1), 444–452. <https://doi.org/https://doi.org/10.38194/jurkom.v4i1.172>
- Kwon, M., Lee, J. Y., Won, W. Y., Park, J. W., Min, J. A., Hahn, C., Gu, X., Choi, J. H., & Kim, D. J. (2013). Development and validation of a smartphone addiction scale (SAS). *PLoS ONE*, 8(2). <https://doi.org/10.1371/journal.pone.0056936>
- Larasati, L., & Lestari, P. (2021). Self-Control relationship with smartphone usage in teenagers during the covid-19 pandemic in middle decades village. *Indonesian Journal of Nursing Research (IJNR)*, 4(1), 1–11. <https://doi.org/10.35473/ijnr.v4i1.1004>
- Larreina-Morales, M. E., & Gunella, C. (2023). Video games for environmental awareness: The accessibility gap. *Universal Access in the Information Society*. <https://doi.org/10.1007/s10209-023-01026-6>
- Long, D. T. (2020). Was Created. *The Cyber Defense Review*, 5(1), 185–200.
- Mattila, V., & Pang, Ri. (2023). How gaming can be more sustainable? *Unity Lab*, 1–15. <https://doi.org/10.37602/UN1TY.2023.53100>
- Muhammad, N. (2023). *The majority of online gaming consumers play more than 4 hours a day*. Databoks.
- Novrialdy, E. (2019). Online gaming addiction in adolescents: Impact and prevention. *Buletin Psikologi*, 27(2), 148. <https://doi.org/10.22146/buletinpsikologi.47402>
- Nugroho, A. T. (2021). Gamification, marketing in the digital age: Study on fantasy premier league user games in Indonesia. *JURKOM*, 4(2), 261–274. <https://doi.org/https://doi.org/10.38194/jurkom.v4i2.376>
- Pineda-Martínez, M., Llanos-Ruiz, D., Puente-Torre, P., & García-Delgado, M. Á. (2023). Impact of video games, gamification, and game-based learning on sustainability education in higher education. In *Sustainability (Switzerland)* (Vol. 15, Issue 17). Multidisciplinary Digital Publishing Institute (MDPI). <https://doi.org/10.3390/su151713032>
- Safitri, S. S. (2020). Online games and the impact of social interaction in the student population at Muhammadiyah University of Surakarta. *Edumaspul: Education Journal*, 4(2), 364–376. <https://doi.org/10.33487/edumaspul.v4i2.533>
- Sekolah, C. (2013). (10400846) sman 2 bantan. 10400846, 10400846.
- Syarief, R. N., Yani, H. T., & Fadila Erida. (2022). Influence of games online on changes in adolescent behavior. *Medical and Health Science Journal*, 1(2), 17–31. <https://doi.org/https://doi.org/10.55606/klinik.v1i2.531>
- Syarifudin, A. S. (2020). Implementation of online learning to improve the quality of education as an impact of social distancing. *Jurnal Pendidikan Bahasa Dan Sastra Indonesia Metalingua*, 5(1), 31–34. <https://doi.org/10.21107/metalingua.v5i1.7072>
- United Nation. (n.d). The 17 goals. Retrieved January 30, 2023, from <https://sdgs.un.org/goals.at.10.27>
- Vargas-Iglesias, J. J. (2020). Making sense of genre: The logic of video game genre organization. *Games and Culture*, 15(2), 158–178. <https://doi.org/10.1177/1555412017751803>
- Ytre-Arne, B. (2019). Media use in changing everyday life: How biographical disruption could destabilize media repertoires and public connection. *European Journal of Communication*, 34(5), 488–502. <https://doi.org/10.1177/0267323119869112>



# Empowering public health awareness through dissemination of traditional medicine products

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ARTICLE INFO	ABSTRACT
<p><b>Article history</b>            Received: 2024-01-22            Revised: 2024-02-06            Accepted: 2024-02-09            Published: 2024-02-24</p> <p><b>Keywords</b>            Education            Dissemination            Product            Traditional medicine</p>	<p><i>Traditional medicines have been an integral part of the cultural heritage and health systems of various societies around the world. To promote the use of traditional medicine and understand it more deeply, the dissemination of traditional medicine products is a crucial step. The purpose of this service is to explore the importance of the dissemination of traditional medicinal products and their benefits to the community. The main target of this activity were people who have a history of chronic disease. In addition, public awareness to obtain information related to traditional medicine products was still lacking. The method of implementing this service activity was carried out by providing direct education related to traditional medicine to the community. As a result of the service, 19 traditional medicine products were disseminated and increased public awareness about traditional medicine. This result implies that the use of traditional medicine should be widely encouraged to a larger community.</i></p>
<p><b>Kata kunci</b>            Edukasi            Diseminasi            Obat Tradisional            Produk</p>	<p><b>Memberdayakan kesadaran kesehatan masyarakat melalui sosialisasi produk obat tradisional.</b>            Obat-obatan tradisional telah menjadi bagian integral dari warisan budaya dan sistem kesehatan berbagai masyarakat di seluruh dunia. Untuk mempromosikan penggunaan obat tradisional dan memahaminya lebih dalam, sosialisasi produk obat tradisional merupakan langkah yang krusial. Tujuan pengabdian ini adalah untuk menggali pentingnya sosialisasi produk obat tradisional dan manfaatnya bagi masyarakat. Sasaran utama kegiatan ini adalah masyarakat yang mempunyai riwayat penyakit kronis. Selain itu, kesadaran masyarakat untuk memperoleh informasi terkait produk obat tradisional masih kurang. Cara pelaksanaan kegiatan pengabdian ini dilakukan dengan memberikan edukasi langsung terkait pengobatan tradisional kepada masyarakat. Hasil dari pengabdian tersebut, tersosialisasikan 19 produk obat tradisional dan meningkatkan kesadaran masyarakat terhadap obat tradisional. Hasil ini menyiratkan bahwa penggunaan obat tradisional harus digalakkan secara luas kepada masyarakat luas.</p>

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## INTRODUCTION

Indonesia, as a country with cultural and ethnic diversity, has a rich heritage of traditional medicine (Setiawan & Kurniawan, 2017). Each ethnicity and local community has unique health knowledge related to the use of medicinal plants and traditional herbs (Kemenkes RI, 2017). Despite having abundant traditional wealth, there is a downward trend in the use of traditional medicine in society. Factors such as modernization, urbanization, and globalization have caused people to turn to modern medicine (Nasution, 2017). Traditional medicinal products are often made from natural ingredients found in the surrounding environment. Sustainability and the lack of side effects are the main attractions of using traditional medicine among people who are increasingly concerned about natural health (Kumontoy, 2023).

Dissemination of traditional medicinal products creates opportunities to empower communities by providing knowledge and skills to care for their health (Thomas & Pakaya, 2021). This is consistent with the spirit of empowerment and understanding of individual health rights. Understanding and spreading the use of traditional medicine can also provide economic support to local communities involved in the production and distribution of raw materials and traditional medicine products (Retno, 2018). Dissemination of traditional medicine products supports the integration of holistic health solutions (Badan Penelitian dan Pengembangan Kesehatan, 2020). By understanding the benefits of traditional medicine, people can utilize both approaches, modern and traditional, for optimal health (Mulyani & Widyastuti, 2016).

Public awareness of the value of natural health and alternative medicine is increasing. Therefore, the dissemination of traditional medicinal products is a means to increase understanding and provide wider treatment options to the public (Parwata, 2016). Encouraging collaboration between modern health professionals and traditional medicine practitioners can increase the recognition of traditional knowledge and create an integrated approach to health care delivery (Kwame, 2021). Government involvement in designing policies that support and facilitate the use of traditional medicine is important. This includes clear regulations, economic support, and integration into national health programs. Through an in-depth understanding of this background, the dissemination of traditional medicinal products can become an important movement in preserving local wisdom, improving public health, and supporting local economies.

This service can make a significant contribution to the achievement of various Sustainable Development Goals (SDGs) targets. Firstly, the dissemination of traditional medicine products can increase public understanding of health alternatives derived from local traditions (Torri, 2010). This can support efforts to achieve the target of increasing universal access to quality health services. The use of traditional medicine as part of a health approach can support disease prevention programs and the provision of affordable health solutions (Fokunang et al., 2011). Secondly, encouraging the use of traditional medicinal products can support economic empowerment in local communities, especially if production and sales are done locally (Liu, 2021; Bodeker & Kronenberg, 2002). This can help reduce poverty levels at the local level. Thirdly, the dissemination of traditional medicinal products can be a platform for community counseling and education on the proper use and health benefits of traditional medicine (Parisa et al., 2021; Chung et al., 2021). This can increase the public's knowledge of the diversity of health solutions (Kala, 2017). Fourth, if the service involves training in the manufacture of traditional medicinal products, it can create local employment opportunities and support economic growth at the community level (Ekor, 2014). Fifth, this work can strengthen partnerships between the government, NGOs, and communities in promoting the use of traditional medicine (Sanadgol et al., 2022; Besançon et al., 2022). Such collaboration can result in a holistic approach to public health (Halimatussadiah et al., 2020).

It is important to note that while this dedication can make a positive contribution to some of the SDGs, it is also important to ensure that its implementation takes into account aspects of ethics, environmental sustainability, and overall social impact.

## METHOD

Traditional medicinal product dissemination methods should be carefully designed to ensure effectiveness in achieving the main objective, which is to promote the use of traditional medicines and increase public understanding of their benefits. Here are some methods that can be implemented:

### Community Education Approach

#### *Workshops and Seminars*

Conducting workshops and seminars at the village or community level to provide in-depth knowledge about traditional medicinal products, including how they are made and their benefits.

#### *Easy-to-understand educational materials*

Creating simple and easy-to-understand educational materials for the community, including brochures, posters, and traditional medicine usage guides.

#### *Collaboration with health experts*

Involving health experts in delivering information and providing a deeper understanding of the health benefits of traditional medicines.

### Social Media Utilization

#### *Social Media Campaign*

Launching campaigns on social media platforms to promote traditional medicine products. Presenting information, testimonials and usage guides through engaging content.

#### *Online Discussion*

Organizing online discussions or forums through social media to provide opportunities for the public to share experiences and knowledge about traditional medicine.

### **Community Empowerment**

#### *Raw material processing training*

Organizing training for local communities related to the processing of traditional medicine raw materials so that they can produce their own with good quality.

#### *Formation of traditional medicine user groups*

Encouraging the formation of community groups that have a special interest in the use of traditional medicine. This group can be a forum for sharing knowledge and experience.

### **Cooperation with Government and Health Institutions**

#### *Integration in national health programs*

Collaborating with the government to integrate traditional medicine products into the national health program and develop official guidelines for their use.

#### *Alternative health clinic*

Establishing alternative health clinics that provide traditional medicine services and provide information directly to patients.

### **Use of Technology and Applications**

#### *Mobile application*

Developing a mobile application that provides information on traditional medicine, how to use it, as well as places that provide it.

#### *Digital health monitoring*

Implementing digital solutions to monitor health using traditional medicine. For example, an app that allows health monitoring through user input.

### **Organizing Community Health Events**

#### *Traditional health fair*

Organizing traditional health fairs at the community or village level, involving traditional medicine practitioners, health experts, and other stakeholders.

#### *Disease prevention program*

Organizing disease prevention programs with a focus on the use of traditional medicine as a preventive approach.

### **Measurement and Evaluation**

#### *Surveys and questionnaires*

Conducting surveys and questionnaires to measure the level of knowledge and trust in traditional medicine before and after dissemination.

#### *Data analysis and usage*

Collecting and analyzing data on the use of traditional medicine in the community after the implementation of the dissemination method.

Through this combination of methods, the dissemination of traditional medicinal products can achieve the main goal of promoting their use and increasing public understanding of their benefits.

## **RESULTS AND DISCUSSION**





This service has been carried out and can be disseminated as many as 19 traditional medicine products assisted by a team of students from the Diploma III Pharmacy study program of Politeknik Medica Farma Husada Mataram. Data on products that have been disseminated are presented in Table 1.

### **Importance of Traditional Medicinal Product Dissemination**

Traditional medicinal product dissemination helps preserve cultural heritage and local traditions. It involves the process of spreading knowledge about the use of medicinal plants, traditional herbs, and hereditary healing methods (Triyandi et al., 2022). Dissemination of traditional medicinal products helps raise public awareness about the health value contained in natural ingredients (Suryana et al., 2022). By knowing the benefits of traditional medicines, people can make more conscious choices regarding their health (Sari, 2006). Promotion and dissemination of traditional medicinal products provide economic support to local communities involved in the production of raw materials and manufacturing of traditional medicines (Salim & Munadi, 2017). This promotes economic growth at the local level. Dissemination of traditional medicinal products creates sustainable and environmentally friendly treatment options (BPOM RI, 2021). The natural ingredients used in traditional medicines can often be obtained locally without over-draining natural resources.






Table 1. Dissemination of traditional medicine products

No	Product Name	Composition	Benefits
1	Herbal Drink Renggawan 	Renggak, Lemon, Ginger, Sugar	<ul style="list-style-type: none"> <li>a. Treats mouth ulcers and heartiness</li> <li>b. Treats cough with phlegm</li> <li>c. Smoothest the respiratory tract</li> <li>d. Relieves nausea</li> <li>e. Overcomes migraines and even stress</li> <li>f. Reduces back pain</li> <li>g. Warms the body</li> <li>h. Reduces eye irritation</li> </ul>
2	Kersen Leaf Herbal Tea 	Kersen Leaf	<ul style="list-style-type: none"> <li>a. Free radical antidote</li> <li>b. As an antioxidant</li> <li>c. To lower cholesterol</li> <li>d. As an anti-inflammatory</li> </ul>
3	Warm Balur 	Ginger, Java Chili, Cloves, Peppercorns, Nutmeg, <i>kencur</i> (aromatic ginger)	To relieve pain, and cramps and warm the body (Analgesic, Analgetic)
4	Burjo Ginger 	Mung beans, ginger, palm sugar, coconut milk	helps boost the immune system, protects against infections, and helps the body fight free radicals, to strengthen the immune system

No	Product Name	Composition	Benefits
5	Yellow beauty skin 	Rice, ginger, <i>kencur</i> (aromatic ginger), bangle, tamarind shoot leaves, water	<ul style="list-style-type: none"> <li>a. Helps brighten the skin</li> <li>b. Moisturizes the skin</li> <li>c. Protects skin from sun exposure</li> <li>d. Fades dark spots and acne scars</li> </ul>
6	Mangosteen peel extract herbal drink 	Mangosteen peel, ginger, palm sugar	lower cholesterol levels, inhibit the growth of cancer cells, control blood sugar, strengthen the immune system
7	Birua cookies 	Wheat Flour, Rosella Flower Powder, Moringa Leaf Powder, Margarine/Butter, Sugar, Egg, Salt, Baking Soda, Glaze	<ul style="list-style-type: none"> <li>a. Helps promote digestion</li> <li>b. Improves bone health</li> <li>c. Adds feeling more energized</li> <li>d. Maintains brain health function</li> </ul>
8	Infused Water 	Coconut water, Lemon, Watermelon, Cucumber, Mint leaves, Lime	<ul style="list-style-type: none"> <li>a. Helps remove toxins in the body</li> <li>b. Maintains body weight</li> <li>c. A healthy way to get vitamin intake</li> <li>d. Improves digestive health</li> <li>e. Prevent dehydration</li> <li>f. Prevents premature aging</li> <li>g. Moisturizes the skin layer</li> </ul>

No	Product Name	Composition	Benefits
9	WSL Herbs (Wellness Shots Lemon) 	Apple, Turmeric, Lemon, Ginger, Lemongrass, Coconut water, Honey	<ul style="list-style-type: none"> <li>a. Relieves acne inflammation</li> <li>b. Boosts body resistance</li> <li>c. Brightens the skin</li> <li>d. Treats skin to make it healthier</li> </ul>
10	Aromatic spread oil (Coconut Oil) 	Coconut, Cinnamon, Cloves, Clean water, Jasmine seedlings	<ul style="list-style-type: none"> <li>a. To moisturize and treat dry skin</li> <li>b. To reduce scars</li> <li>c. To treat itchy skin</li> <li>d. To reduce inflammation</li> <li>e. To increase collagen</li> <li>f. Resolves aches and pains</li> <li>g. Provides calmness (if inhaled)</li> </ul>
11	RR Beauty (Traditional Pass) 	Tamarind, Brown rice, Alum stone, Turmeric	<ul style="list-style-type: none"> <li>a. Enhances the regeneration of skin cells.</li> <li>b. Removes dead skin cells.</li> <li>c. Contains AHA (Alpha Hydroxy Acids).</li> <li>d. Prevents inflammation in acne and wounds.</li> <li>e. Restores damage to sunburned skin.</li> <li>f. Brightens skin color.</li> </ul>
12	Cristal Drink Kunir Milk 	Ginger, Turmeric, UHT Full Cream Milk, Sugar, Cinnamon	To boost the immune system

No	Product Name	Composition	Benefits
13	Thumb Herb 	Black sticky rice, Areca nut flower, Kenanga flower, Belimbing wuluh flower, Bay leaf	<ul style="list-style-type: none"> <li>a. To increase stamina</li> <li>b. To reduce nausea</li> <li>c. To overcoming irregular menstruation</li> <li>d. To improve blood circulation</li> <li>e. To relieve diarrhea</li> </ul>
14	Chinese Betel Leaf Herbal Tea 	Chinese betel leaf	<ul style="list-style-type: none"> <li>a. Free radical antidote</li> <li>b. As an antioxidant</li> <li>c. To lower cholesterol</li> <li>d. As an anti-inflammatory</li> </ul>
15	Hair Tonic Flower 	Water, Telang flower, Essential oil, Hair vitamin	Moisturizes hair and reduces hair loss
16	Kersen pudding 	Kersen fruit, jelly, sugar/honey	<ul style="list-style-type: none"> <li>a. Relieves headaches</li> <li>b. Improves eye health</li> <li>c. Helps with weight loss</li> <li>d. Lowers high blood pressure</li> <li>e. Lowers fever and prevent inflammation</li> </ul>

No	Product Name	Composition	Benefits
17	Kunyit Asem Herb 	Turmeric, Palm sugar, Granulated sugar, Tamarind, Salt	<ul style="list-style-type: none"> <li>a. Helps strengthen immunity and fight premature aging</li> <li>b. Lowers cholesterol</li> <li>c. Relieves menstrual pain</li> <li>d. Brightens skin naturally</li> <li>e. Lowers the risk of cancer</li> <li>f. Improves mood</li> </ul>
18	Herbal Gummy Candy 	Mint leaves, Water, Citric acid, Gelatin, Aren sugar, Dragon fruit peel	As an antioxidant and cough medicine
19	Telang Flower Tea 	Spring flower	<ul style="list-style-type: none"> <li>a. Improves Brain Health</li> <li>b. Irregular menstruation solution in women</li> <li>c. Improve nervous system health</li> <li>d. Relieves asthma symptoms</li> </ul>

### Benefits of Traditional Medicine Product Dissemination

#### *Holistic Disease Management*

Traditional medicinal products are often developed to treat diseases holistically. They not only relieve symptoms but also address the root cause of the disease.

#### *Minimal Side Effects*

Compared to modern medicine, traditional medicinal products tend to have fewer side effects. They are generally kinder to the body and provide natural solutions.

#### *Community Empowerment*

Dissemination of traditional medicinal products can empower communities by providing them with the knowledge and skills to take care of their health. This creates a sense of responsibility for personal and community health.



### *Recognition of Local Wisdom*

Using traditional medicinal products is a form of recognition of local wisdom and hereditary knowledge. This gives value and meaning to traditional health practices.

### **Effective Strategies for Traditional Medicine Product Dissemination**

The banner of traditional medicine product dissemination is in Figure 1.

#### *Public Education*

Organize workshops and seminars to provide education on the use of traditional medicine. Create educational materials that are easy to understand and accessible to the general public.

#### *Collaboration with Health Experts*

Engage healthcare professionals in disseminating information on the benefits and uses of traditional medicine. Build partnerships between modern and traditional health practitioners to support the integration of health solutions.

#### *Social Media Utilization*

Use social media platforms to disseminate information about traditional medicine products. Creating engaging and relevant content to increase public understanding.

#### *Partnership Development with Government*

Collaborate with the government and health institutions in designing policies that support the dissemination of traditional medicinal products. Encourage the integration of traditional medicine into national health programs.



Figure 1. The banner of traditional medicine product dissemination

### **Increased Community Knowledge**

The Community Education approach through workshops and seminars was successful in increasing community knowledge related to traditional medicine products (Wrenn & Wrenn, 2009). Participants gained a deeper understanding of how traditional medicines are made, their benefits, and their use in their daily lives. Easy-to-understand Educational Materials, Educational materials distributed through brochures, posters, and usage guides for traditional medicines help simplify information and make it easier for people to understand their benefits. The community education approach has proven to be an effective measure in improving people's understanding of traditional medicines. Workshops and seminars not only provide information but also empower communities to actively engage in the use of traditional medicine products (Setiadi et al., 2022).

### **Raising Awareness Through Social Media**

Social Media Campaigns, Social media campaigns have proven to be an effective tool for raising public awareness (Borawska, 2017). Information related to traditional medicine promoted through these platforms reached a wide range of people and received positive responses (Otero & Gutiérrez, 2015). Online Discussions, Online discussions provide an opportunity for people to share their experiences and provide positive testimonials regarding the use of traditional medicines. This increases community engagement and trust. Social media plays an important role in raising public



awareness. Campaigns launched through these platforms reach a wider audience, and direct interaction through online discussions helps build an engaged community (Osman, 2021).

### Community Empowerment and Group Formation

Raw Material Management Training, Training on traditional medicine raw material processing empowers local communities. The community becomes more independent in producing traditional medicine with good quality. Formation of Traditional Medicine User Groups, the formation of traditional medicine user groups provides space for communities to exchange information and experiences (Leonti & Casu, 2013). This creates a strong network at the community level. Training on raw material processing and the formation of traditional medicine user groups have a positive impact on community empowerment. They are not only consumers but also producers who play an active role in maintaining the sustainability of traditional medicine practices

Despite the increase in knowledge and awareness, there are still some challenges such as resistance to change from some community groups. Therefore, continuous education and campaigns are needed. Results indicate the need for closer collaboration with the government and health experts. The integration of traditional medicine products in national health programs needs further support to create an enabling environment. Evaluation and monitoring processes are ongoing to measure impact and identify areas of improvement. The results of surveys and questionnaires provide the basis for directing the next steps.

### CONCLUSION

Through these results and discussions, it can be concluded that the dissemination of traditional medicinal products using educational approaches, social media, community empowerment, and collaboration with the government can be a strategic step in promoting the use of traditional medicine and increasing public understanding of its benefits. The challenges faced need to be overcome by continuing to implement measurable and sustainable strategies.

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### REFERENCES

- Badan Penelitian dan Pengembangan Kesehatan (LBP). (2020). *Bunga rampai kinerja pembangunan kesehatan di Indonesia: Tantangan, masalah, dan solusi* (Vol. 1).
- Besaçon, S., Sidibé, A., Sow, D. S., Sy, O., Ambard, J., Yudkin, J. S., & Beran, D. (2022). The role of non-governmental organizations in strengthening healthcare systems in low- and middle-income countries: Lessons from Santé Diabète in Mali. *Global Health Action*, 15(1). <https://doi.org/10.1080/16549716.2022.2061239>
- Bodeker, G., & Kronenberg, F. (2002). A Public health agenda for traditional, complementary, and alternative medicine. *American Journal of Public Health*, 92(10), 1582–1591. <https://doi.org/10.2105/AJPH.92.10.1582>
- Borawska, A. (2017). The role of public awareness campaigns in sustainable development. *Economic and Environmental Studies*, 17(44), 865–877. <https://doi.org/10.25167/ees.2017.44.14>
- BPOM RI. (2021). Cerdas memilih dan menggunakan obat tradisional yang aman. In *Badan POM*.
- Chung, V. C. H., Wong, C. H. L., Zhong, C. C. W., Tjioe, Y. Y., Leung, T. H., & Griffiths, S. M. (2021). Traditional and complementary medicine for promoting healthy ageing in WHO Western Pacific Region: Policy implications from utilization patterns and current evidence. *Integrative Medicine Research*, 10(1), 100469. <https://doi.org/10.1016/j.imr.2020.100469>
- Ekor, M. (2014). The growing use of herbal medicines: Issues relating to adverse reactions and challenges in monitoring safety. *Frontiers in Pharmacology*, 4(January), 1–10. <https://doi.org/10.3389/fphar.2013.00177>
- Fokunang, C., Ndikum, V., Tabi, O., Jiofack, R., Ngameni, B., Guedje, N., Tembe-Fokunang, E., Tomkins, P., Barkwan, S., Kechia, F., Asongalem, E., Ngoupayou, J., Torimiro, N., Gonsu, K., Sielinou, V., Ngadjui, B., Angwafor, I., Nkongmeneck, A., Abena, O., ... Lohoue, J. (2011). Traditional medicine: Past, present and future research and development prospects and integration in the National health system of Cameroon. *African Journal of Traditional, Complementary and Alternative Medicines*, 8(3), 284–295. <https://doi.org/10.4314/ajtcam.v8i3.65276>
- Halimatussadiyah, A., Widyasanti, A. A., Damayanti, A., Verico, K., Qibthiyah, R. M., Kurniawan, R., Rezki, J. F., Rahardi, F., Sholihah, N. K., Budiantoro, S., Halimatussadiyah, A., Cesarina, A., Siregar, A. A., Hanum, C., Wisana, D., Rahardi, F., Bintara, H., Rezki, J. F., Husna, M., ... Sofiyandi, Y. (2020). Thinking ahead : Indonesia's agenda on sustainable recovery from COVID -19 pandemic. In *Institute for Economic and Social Research, LPEM FEB UI*.
- Kala, C. P. (2017). Traditional health care systems and herbal medicines in India. *European Journal of Environment and*

- Public Health*, 1(1), 1–6. <https://doi.org/10.20897/ejeph/69164>
- Kemenkes RI. (2017). Eksplorasi pengetahuan lokal etnomedisin dan tumbuhan obat berbasis komunitas di Indonesia. *Lembaga Penerbitan Badan Penelitian Dan Pengembangan Kesehatan Kementerian Kesehatan RI*, 69.
- Kumontoy, Grenvilco D. (2023). Pemanfaatan tanaman herbal sebagai obat tradisional untuk kesehatan masyarakat di Desa Guaan Kecamatan Mooat Kabupaten Bolaang Mongondow Timur. *Jurnal Holistik*, 16(3), 1–20.
- Kwame, A. (2021). Integrating traditional medicine and healing into the Ghanaian mainstream health system: voices from within. *Qualitative Health Research*, 31(10), 1847–1860. <https://doi.org/10.1177/10497323211008849>
- Leonti, M., & Casu, L. (2013). Traditional medicines and globalization: Current and future perspectives in ethnopharmacology. *Frontiers in Pharmacology*, 4(July), 1–13. <https://doi.org/10.3389/fphar.2013.00092>
- Liu, C. (2021). Overview on development of ASEAN traditional and herbal medicines. *Chinese Herbal Medicines*, 13(4), 441–450. <https://doi.org/10.1016/j.chmed.2021.09.002>
- Mulyani, H., Widyastuti, S.H., & Ekowati, V.I. (2016). Tumbuhan herbal sebagai jamu pengobatan terhadap penyakit dalam serat primbon jampi jawi jilid i. *Jurnal Penelitian Humaniora*, 21(2), 73–91. <http://dx.doi.org/10.21831/hum.v21i2.13109>
- Nasution, R. D. (2017). Pengaruh modernisasi dan globalisasi terhadap perubahan sosial budaya di Indonesia. *Jurnal Penelitian Komunikasi Dan Opini Publik*, 21(1), 30–42.
- Osman, S. A. A. (2021). The use of social media marketing to raise brand awareness at Brighton international private school. *International Journal of Innovation and Business (IJIBS ...)*, 15(2), 96–119. <https://ijibs.utm.my/index.php/ijibs/article/view/100%0Ahttps://ijibs.utm.my/index.php/ijibs/article/download/100/78>
- Otero, E. L., & Gutiérrez, R. C. (2015). Using social media advertising to increase the awareness, promotion, and diffusion of public and private entities. In *Advances in Intelligent Systems and Computing* (Vol. 373, Issue November, pp. 377–384). [https://doi.org/10.1007/978-3-319-19638-1\\_43](https://doi.org/10.1007/978-3-319-19638-1_43)
- Parisa, N., M. T. Kamaluddin, Theodorus, Mgs. Irsan Saleh, Evi Lusiana, Nia Savitri Tamzil, Bonanza Abi Wicaksono, & Arkan Abdullah Nashif. (2021). Counseling of the use of herbal medicine for health care to the community. *Indonesian Community Empowerment Journal*, 2(2), 149–155. <https://doi.org/10.37275/icejournal.v2i2.19>
- Parwata, I. M. O. A. (2016). Obat tradisional. In *Jurnal Keperawatan Universitas Jambi*. [https://simdos.unud.ac.id/uploads/file\\_pendidikan\\_1\\_dir/a6a48203e23370286113d07440fa07ef.pdf](https://simdos.unud.ac.id/uploads/file_pendidikan_1_dir/a6a48203e23370286113d07440fa07ef.pdf)
- Retno, D. A. K. (2018). *Strategi pemasaran Obat Herbal, Studi Kasus Pada Perusahaan Obat herbal Jamur Dewa Di kabupaten Malang* (Doctoral dissertation, Universitas Brawijaya). <http://repository.ub.ac.id/13212/>
- Sanadgol, A., Doshmangir, L., Majdzadeh, R., & Gordeev, V. S. (2022). Strategies to strengthen non-governmental organizations' participation in the Iranian health system. *Frontiers in Public Health*, 10. <https://doi.org/10.3389/fpubh.2022.929614>
- Sari, L.O.R.K. (2006). Pemanfaatan obat tradisional dengan pertimbangan manfaat dan keamanannya. *Majalah Ilmu Kefarmasian*, 3(1), 1–07. <https://doi.10.7454/psr.v3i1.3394>
- Salim, Z. & Munadi, E. (2017). Info komoditi tanaman oBAT. In *Info Komoditi Tanaman Obat* (p. 106). Badan Pengkajian dan Pengembangan Perdagangan.
- Setiadi, A. P., Wibowo, Y. I., Setiawan, E., Mulyono, I., Wardhani, S. A., & Sunderland, B. (2022). Strategies to implement community training to promote responsible self-medication in Indonesia: a qualitative study of trainers. *International Health*, 14(4), 398–404. <https://doi.org/10.1093/inthealth/ihz115>
- Setiawan, H., & Kurniawan, F. (2017). Pengobatan tradisional sebuah kajian interaksionisme simbolik. *Paradigma: Jurnal Filsafat, Sains, Teknologi, Dan Sosial Budaya*, 23(2), 57–66. <https://doi.org/10.33503/paradigma.v23i2.348>
- Suryana, A. L., Destarianto, P., & Dewanto, W.K (2022). Pengaruh metode penyuluhan dan pelatihan dalam diseminasi pemanfaatan dan pengolahan toga untuk pengembangan varian minuman herbal. *NaCosVi: Polije Proceeding Series*, 5(1), 111–119. <https://proceedings.polije.ac.id/index.php/ppm/article/view/380%0Ahttps://proceedings.polije.ac.id/index.php/ppm/article/download/380/374>
- Thomas, N. A., & Pakaya, M. S. (2021). *Laporan akhir Kuliah Kerja Nyata (KKN) tematik Universitas Negeri Gorontalo tahun 2021* (Vol. 0031128201).
- Torri, M.A (2010). Increasing knowledge and traditional use of medicinal plants by local communities in Tamil Nadu: Promoting Self-reliance at the grassroots level through a community-based entrepreneurship initiative. *Complementary Health Practice Review*, 15(1), 40–51. <https://doi.org/10.1177/1533210110379938>
- Triyandi, R., Iqbal, M., Ramdini, D. A., Sukohar, A., Sayoeti, M. F. W., Suharmanto, Oktarlina, R. Z., Mustofa, S., Puteri, V. F., Fredison, & Afriyana, R. (2022). Penyuluhan tanaman obat tradisional berbasis kearifan lokal di Desa Marga Agung Kecamatan Jati Agung Kabupaten Lampung Selatan. *Jurnal Pengabdian Masyarakat Ruwa Jurai*, 6(1), 72–76.
- Wrenn, J., & Wrenn, B. (2009). Enhancing learning by integrating theory and practice. *International Journal of Teaching and Learning in Higher Education*, 21(2), 258–265. <http://www.isetl.org/ijtlhe/>



# Assistance in preparing financial reports for houses of worship with ISAK 35 standards in Sorong

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ARTICLE INFO	ABSTRACT
<p><b>Article history</b> Received: 2023-10-10 Revised: 2024-01-31 Accepted: 2024-02-02 Published: 2024-02-27</p> <p><b>Keywords</b> Financial statement House of worship ISAK 35</p>	<p>Houses of worship in Sorong City have not recorded financial reports according to standards and carry out bookkeeping using manual recording. Therefore, this activity aims to provide assistance in preparing financial reports for places of worship with the ISAK 35 standard. The method of implementing the service is carried out by giving presentations accompanied by direct interactive discussions between the implementing lecturer team and participants who come from members of the Religious Communication Forum in Sorong City. There are 30 partners involved in community service, consisting of 2 students, 3 lecturers, 5 administrators each of places of worship (churches, temples, mosques and monasteries) and 5 partners who assist in broadcasting worship. Based on the results of observations and interviews conducted by the service team using random sampling of participants, it can be concluded that implementing community service can provide new insights and knowledge for participants regarding the preparation of financial reports and an understanding of the importance of accurate and accountable reports. By taking part in assistance in preparing financial reports, apart from listening to explanations in preparing financial reports, the participants also held discussions regarding the obstacles faced in managing funds and reporting that is appropriate and easy to understand by users of financial reports and technology.</p>
<p><b>Kata Kunci</b> ISAK 35 Laporan keuangan Rumah ibadah</p>	<p><b>Bantuan penyusunan laporan keuangan rumah ibadah dengan standar ISAK 35 di Sorong.</b> Rumah ibadah di Kota Sorong belum melakukan pencatatan laporan keuangan sesuai standar dan melakukan pembukuan dengan menggunakan pencatatan manual. Oleh karena itu kegiatan ini bertujuan untuk melakukan pendampingan penyusunan laporan keuangan rumah ibadah dengan standar ISAK 35. Metode pelaksanaan pengabdian dilakukan dengan memberikan presentasi disertai diskusi interaktif langsung antara tim dosen pelaksana dengan peserta yang berasal dari anggota FKUB Kota Sorong. Mitra yang terlibat dalam pengabdian kepada masyarakat berjumlah 30 orang yang terdiri dari 2 orang mahasiswa, 3 orang dosen, masing-masing 5 orang pengurus tempat ibadah (Gereja, Pura, Masjid dan Vihara) serta 5 orang mitra yang membantu dalam penyiaran ibadah. Berdasarkan hasil observasi dan wawancara yang dilakukan oleh tim pengabdian secara sampling/acak terhadap peserta, dapat disimpulkan bahwa pelaksanaan pengabdian kepada masyarakat dapat memberikan wawasan dan pengetahuan baru bagi peserta mengenai penyusunan laporan keuangan dan pemahaman akan pentingnya laporan yang akurat dan akuntabel. Dengan mengikuti Layanan dalam penyusunan laporan keuangan, selain mendengarkan pemaparan dalam penyusunan laporan keuangan, para peserta juga melakukan diskusi mengenai kendala-kendala yang dihadapi dalam pengelolaan dana dan pelaporan yang tepat guna dan mudah dipahami oleh pengguna laporan keuangan dan teknologi.</p>

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## INTRODUCTION

The financial report is an entity's responsibility through the presentation of the financial position structure which aims to show the entity's performance in a certain period. Preparing financial reports is important for an entity or organization, whether non-profit or an entity with the aim of seeking profit or gain.

Non-profit organizations do not have ownership, because basically the organization is owned by the community, so that both the life and activities of the organization come from the community. Therefore, transparency is needed regarding the organization's activities, especially financial activities. This is manifested in financial reports. Therefore, it is necessary to prepare financial reports for non-profit entities as a form of accountability and transparency to donors, organizational elements, creditors and other parties who provide resources to the entity (Sanjaya, 2016; Syamril, 2019).

The main activities of a non-profit entity are oriented towards social activities or not to seek profit in the form of money. One of the characteristics or differentiators is the effort to obtain resources aimed at carrying out the entity's operational activities. Sources of funding for non-profit entities generally come from the community or certain people and can even come from uncertain transactions, namely donations. Examples of non-profit organizations include foundations, universities, places of worship, political parties and government agencies (Dewi & Farina, 2022; Prihatmingtyas et al., 2021; Santoso & Pudjolaksono, 2018; Firdaus & Dwi Yulianto, 2018).

In an effort to fulfill spiritual needs, a place of worship is a very important need for all humans. Houses of worship which are places of worship for each religion are included in non-profit entities which are also required to make bookkeeping or financial reports. It is the responsibility of houses of worship to always have trust in their congregation by being transparent in preparing financial reports. Apart from that, to get investors or grants from donors, of course you need financial reports that are complete and meet standards (Arianto, 2022; Nurhakim et al., 2022; Rothrock et al., 2021; Sabara & Aksa, 2022; Wijoyo et al., 2022).

The preparation of financial reports for non-profit entities is different from the financial reports for profit entities. In preparing financial reports, non-profit entities can be guided by the rules set by the Financial Accounting Standards Board of the Indonesian Accountants Association (DSAK IAI). In 1997, DSAK IAI issued Statement of Financial Accounting Standards (PSAK) No. 45 as a guideline for preparing financial reports for non-profit entities (Arianto, 2022; Davison, 2004; Hardy & Ballis, 2013; Jayasinghe & Soobaroyen, 2009; Mohammed et al., 2019; Rahayu et al., 2019). However, since the ratification of the Statement on the Revocation of Financial Accounting Standards (PPSAK) No. 13, PSAK 45 has been replaced with Interpretation of Financial Accounting Standards (ISAK) No. 35 as a guideline for preparing financial reports for non-profit entities. ISAK 35 was approved by DSAK IAI on April 11 2019 and became effective on January 1 2020. Therefore, after the ratification of the new regulations, it is expected that non-profit entities will prepare their financial reports in accordance with ISAK 35.

The Religious Harmony Forum or abbreviated as FKUB is a service partner that is classified as a general community partner or non-productive community group. This partner is an institution formed by joint decision of the Minister of Religion and the Minister of Home Affairs whose task is to assist Regional Heads in fostering and realizing religious harmony in a particular region or region (Azwari & Nuraliati, 2018; Marviana et al., 2021; Puspita et al., 2022; Romdioni & Wahyudi, 2023; Supawanhar et al., 2022). The main task of this institution is to conduct dialogues with religious leaders and community leaders, accommodate the aspirations of social organizations, channel the results of the dialogue in the form of recommendations as material for decision making and government policy and to disseminate religious regulations, views and policies related to religious harmony (Chopko, 2021; Mukhlisin et al., 2015; Sirmayanti et al., 2019; Nahar & Yaacob, 2011; Wachyu & Winarto, 2022).

Sorong City FKUB carries out its role in maintaining religious harmony, not only conditionally but should be sustainable so that the people of Sorong City always remain harmonious despite differences. These conditions certainly cover all aspects, especially houses of worship which are places of worship for each community. In developing a place of worship, one of the most important aspects is transparent and sustainable financial management (sustainability reporting). The basic thing was that it was discovered that the condition of places of worship in Sorong City had not recorded financial reports according to standards and had made bookkeeping using manual recording. This is an initial discovery in the field so that assistance is needed for partners

The partner's problem is a lack of knowledge and understanding in preparing financial reports in accordance with the standards for preparing financial reports based on non-profit accounting or non-profit accounting. The community service aimed to increase the understanding and knowledge of partners or administrators of places of worship in preparing financial reports for places of worship.

The contribution of activities is in line with sustainable development as conceptualized in the SDGs (Ishartono & Tri Raharjo, 2022; Mawonde & Togo, 2019; Nogueiro et al., 2022; Shayan et al., 2022). The SDGs program contains 17 goals, namely (1) overcoming and ending poverty that occurs everywhere, (2) ending hunger and meeting food needs by increasing nutritional sources, (3) ensuring a healthy and prosperous life for all ages, (4) education Quality, fair, equitable and lifelong learning opportunities for all ages, (5) gender equality, (6) ensuring the availability of clean water and continued sanitation for all, (7) affordable and modern access for all, (8) introducing development sustainable economy, productive work, inclusiveness, and ensuring decent work for all, (9) industrial and infrastructure innovation, (10) reducing inequality

in the country, (11) making cities and settlements where humans live safe and comfortable, (12 ) sustainable consumption and production, (13) to overcome climate change and its impacts, (14) conserve waters (seas), (15) restore, provide protection, to ecosystems and manage forests, reverse land degradation and stop the loss of some diversity, (16 ) providing access to justice for all, (17) revitalizing global partnerships and strengthening ways of implementing them, as well as 169 targets which are targets for the global movement program for the next 15 years which will take effect from 2016 to 2030, to overcome poverty, protect the environment, improve the quality of education, and reduce disparities. The SDGs concept relates to point 17, namely Strengthening an Inclusive and Peaceful Society for Sustainable Development, Providing Access to Justice for All, and Building Effective, Accountable and Inclusive Institutions at All Levels (Ansell et al., 2022; Clark et al., 2022; Heimann, 2019; Krasodomska et al., 2023; Visvizi, 2022). Papuan people who live in ethnic, religious and racial differences are expected to be able to create effective and accountable institutions, especially in the house of worship sector (Abdullah, 2018; Ferrero-Ferrero et al., 2023; Musah, 2023; Safitri et al., 2022; Scarpa et al., 2023).

## METHOD

The method for implementing the service is carried out by providing a presentation accompanied by a direct interactive discussion between the team of lecturers implementing PkM and the participants (Munzir et al., 2023). Human resource partners involved in community service are 30 people consisting of 2 students, 3 lecturers, 5 people each administrator of places of worship (Churches, Temples, Mosques and Viharas) as well as 5 partners who help in running it. devotion. The location of the service is in the Sorong City Religious Department Hall which is approximately 16-20 minutes from the service team's location (shown in Figure 1).

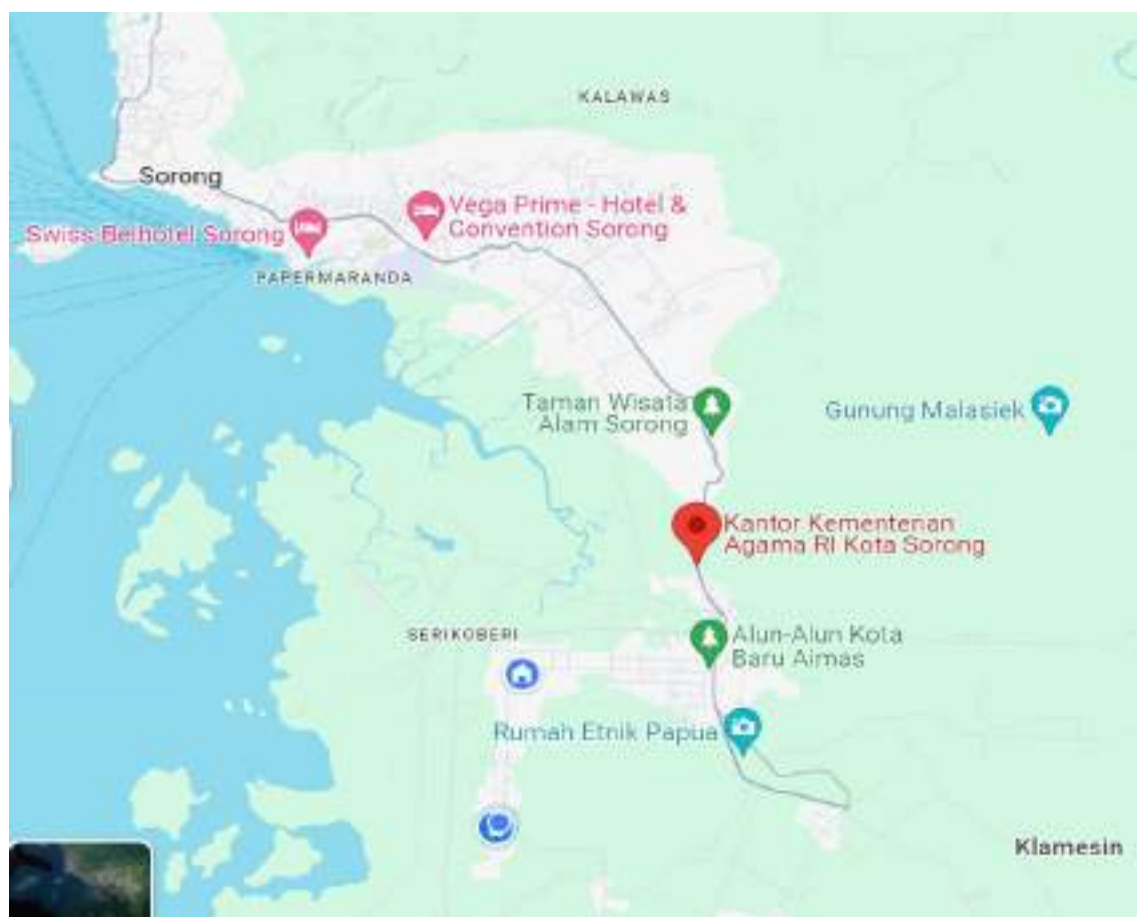


Figure 1. Activity location plan

The implementation of service is carried out in several stages. The stages are as follows: **a) Socialization.** Implementation of socialization is carried out by providing an initial description of the mentoring program and the timing of the mentoring implementation so that there is a preparation process between the service team and service partners as well as administrators of places of worship; **b) Training.** The training is carried out using the tutorial method directly to partners and the community by providing a format or form of financial report that has been prepared previously by the lecturer and student service team, making it easier for service participants to fill in directly the instructions that have been distributed in the training module. **c) Application of IT-based technology.** Application of technology in the form of IT-based financial reports which will be applied to every house of worship. This makes it easier for partners and administrators of



places of worship to manage and report transparent financial records; **d) Accompaniment.** Assistance is carried out so that partners and administrators of places of worship are able to understand in a complex way how to manage and report financial records of places of worship. Mentoring is carried out after training. Routine direct assistance is carried out once every 7 days and assistance is also carried out via telephone or WhatsApp group; **e) Program Sustainability.** The sustainability program takes the form of signing a cooperation agreement between FKUB partners and lecturers at higher education institutions. This makes the duties and responsibilities not only during the training and mentoring process, but there is continuity and sharing of knowledge so that it is hoped that the increase in partner knowledge will not be interrupted as well as adding other partners outside Sorong City, for example Raja Ampat Regency, South Sorong, and other districts that is in southwest Papua.

## RESULTS AND DISCUSSION

The activities were carried out in the Ministry of Religion Hall in Sorong City. Activities are carried out with the initial step of coordinating with partners, partner communities and the service implementation team (see Figure 2). This is done to equalize perceptions and activity schedules so that they are carried out as planned.



Figure 2. Initial coordination with the Religious Communication Forum in Sorong City partners

Socialization activities and workshops/training for House of Worship administrators were held for 2 days from 22 to 23 September 2023. The schedule of activities is summarized in Table 1.

**Table 1.** Schedule Socialization activities and workshops/training

Day/Date	Time	Agenda/Materials	Responsible Person
Friday/22	08.00-09.30 WIT	Opening	Student Member (Pinkan)
September	09.30-11.30 WIT	Introduction to Nonprofit Accounting	Member of the Community Service lecturer team (Zulkifli, M.Pd)
	08.00-10.00 WIT	Introduction to Basic Accounting	Member of the Community Service lecturer team (Sabaria, M.M.)
	10.00-12.00 WIT	ISAK 35 concept	Head of the Community Service Team (Munzir, M.Ak.)
Saturday/23	13.30-15.00 WIT	Practice of Preparing Application-based financial reports <a href="http://rumah-kuhn.com">http://rumah-kuhn.com</a> .	Student Member (Risky)
September	15.00-15.30 WIT	Closing	Student Member (Anetha)

Based on questions and answers and direct observations during the activity shown in Figure 3, this Community Service provides contributions for the participants including understanding of financial reports, the process of preparing financial reports and the function of financial reports, especially for non-profit or non-profit organizations. The advantage of providing financial reports for places of worship is to obtain potential investors, grants or other assistance, knowledge of preparing financial reports on a non-profit or non-profit basis, and contributions and benefits that can be provided to the surrounding environment or administrators of other places of worship.



Figure 3. Assistance in preparing financial reports

In implementing the Service represented in Figure 4, participants are asked to be active in discussion activities, ask questions, and be active in trying to prepare financial reports. Participants are also asked to try to find solutions to the obstacles they have been facing according to their respective understandings so that they can become a discussion in the ongoing implementation of Community Service.



Figure 4. Delivery of material by the service team

Several factors that support the success of this activity are the participants' interest in being able to prepare financial reports independently, apart from providing knowledge to the participants and also being able to help with accountability for the implementation of renovations to places of worship. The factor that is felt to be an obstacle is the limited time in

implementing PKM because administrators of places of worship must also continue to carry out their obligations. The material was delivered by the resource person regarding ISAK 35.

From this activity, information was obtained regarding the conditions of accountability carried out by the majority of mosque administrators in Sorong City. Most administrators only account for the financial condition of the mosque in the form of cash inflow and cash outflow reports. By holding this activity, at the very least, the management will gain new insights regarding better implementation of financial accountability in accordance with ISAK 35 (Kwalepa et al., 2022; Rahayu et al., 2019). From this activity, challenges can also be identified in the form of limited ability of the management in adapting and using existing technology due to the age factor. For this reason, it is necessary to separate the treasurer function from the bookkeeping function. This can overcome the existing age gap, in the sense that the treasurer can still be carried out by administrators who are in fact elderly, while the bookkeeping function can be carried out by the younger generation (Abidin & Rahma, 2020; Pryangan et al., 2023; Saputra & Ramadhani, 2021; Kabes et al., 2023; Wardoyo et al., 2022).

Things that were found in the field after the service was carried out included: (1) Worship administrators who are responsible for compiling financial reports for places of worship, still use manual methods or write them down in a lined folio book. (2) The worship management has not prepared financial reports according to non-profit accounting financial standards. (3) Partners who come from the Religious Harmony Forum (FKUB) experience difficulties because they generally still know manual methods and do not understand technological matters, plus the condition of every house of worship that does not have computer or laptop equipment or the like that can be used as a Storing financial report files via Microsoft Excel.

The potential for sustainability in this program is a priority so that in order to overcome our findings obtained in the field, follow-up actions are carried out including: (1) Increasing the entity's time and continuous assistance to partner communities so that they understand more about operating computers or similar, (2) In order to maintain the effectiveness of mentoring, the service team, which consists of lecturers and students, will synchronize with courses on campus to make part of the service a practical field study for students according to the courses taught, for example computerized accounting or others, (3) Coordinate with partners in organizing or looking for donors for each house of worship to have computer equipment or similar (Azwari & Nuraliati, 2018; Siregar, 2018; Suarni & Andayaningsi, 2018; Zanatun et al., 2018).

Changes in the preparation of financial reports by implementing non-profit accounting have an impact on the presentation of organizational financial information. Preparing financial reports by applying non-profit accounting becomes more competent in supporting the organization in its responsibilities as a non-profit organization both horizontally and vertically.

## CONCLUSION

Based on the results of observations and interviews conducted by the service team in a sampling/random manner with participants, it can be concluded that the implementation of the service carried out can provide new insights and knowledge for participants regarding the preparation of financial reports and an understanding of the importance of accurate and accountable reports in finding potential donors or obtaining grant.

By participating in the Service in preparing financial reports, apart from listening to presentations in preparing financial reports, the participants also held discussions regarding the obstacles faced in managing funds and reporting that was appropriate and easy to understand for users of financial reports and was technology-based.

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## REFERENCES

- Abdullah, M. (2018). Waqf, sustainable development goals (SDGs) and maqasid al-shariah. *International Journal of Social Economics*, 45(1), 158–172. <https://doi.org/10.1108/IJSE-10-2016-0295>
- Abidin, J., & Rahma, A. (2020). Sosialisasi penerapan ISAK 35 dalam penyajian laporan keuangan kepada pengurus Masjid Al-Aulia, Pekalongan. *Jurnal Industri Kreatif Dan Kewirausahaan*, 3(2), 112–118.
- Ansell, C., Sørensen, E., & Torfing, J. (2022). The key role of local governance in achieving the SDGs. In *Co-Creation for Sustainability* (pp. 9–22). Emerald Publishing Limited. <https://doi.org/10.1108/978-1-80043-798-220220002>
- Arianto, B. (2022). Menakar laporan keuangan masjid berbasis ISAK 35 di Kabupaten Pandeglang. *Jurnal Akuntansi Publik*, 2(2), 80–94.

- Azwari, P.C., & Nuraliati, A. (2018). Rekonstruksi perlakuan akuntansi untuk entitastempat ibadah (Studi perlakuan akuntansi organisasi masjid berdasarkan PSAK 45 dan PSAK 109). *I-Finance*, 4(1), 84–101.
- Chopko, M. (2021). The constitutionality of providing public funds for U.S. houses of worship during the Coronavirus. *Laws*, 10(1), 1–12. <https://doi.org/10.3390/laws10010008>
- Clark, S., Maclachlan, M., Marshall, K., Morahan, N., Carroll, C., Hand, K., Boyle, N., & O’Sullivan, K. (2022). Including digital connection in the United Nations Sustainable Development Goals: A systems thinking approach for achieving the SDGs. *Sustainability*, 14(3), 1–13. <https://doi.org/10.3390/su14031883>
- Davison, J. (2004). Sacred vestiges in financial reporting: Mythical readings guided by Mircea Eliade. *Accounting, Auditing & Accountability Journal*, 17(3), 476–497. <https://doi.org/10.1108/09513570410545821>
- Dewi, N., & Farina, D. (2022). Penyusunan laporan keuangan organisasi nirlaba berdasarkan ISAK Nomor 35 (Studi pada Masjid Nurul Iman Tabek Nagari Banja Loweh Kecamatan Bukik Barisan Kabupaten Lima Puluh Kota). *JakSyta: Jurnal Akuntansi Syariah*, 2(1), 33–48.
- Ferrero-Ferrero, I., Muñoz-Torres, M. J., Rivera-Lirio, J. M., Escrig-Olmedo, E., & Fernández-Izquierdo, M. Á. (2023). SDG reporting: an analysis of corporate sustainability leaders. *Marketing Intelligence and Planning*, 41(4), 457–472. <https://doi.org/10.1108/MIP-07-2022-0332>
- Firdaus, D.W., & Yulianto, H.D. (2018). Perancangan sistem informasi akuntansi entitas nirlaba dalam penyajian laporan keuangan berbasis akuntabilitas masjid. *Jurnal Riset Akuntansi Dan Keuangan*, 6(1), 25–44. <https://doi.org/10.17509/jrak.v6i1.8975>
- Hardy, L., & Ballis, H. (2013). Accountability and giving accounts: Informal reporting practices in a religious corporation. *Accounting, Auditing and Accountability Journal*, 26(4), 539–566. <https://doi.org/10.1108/09513571311327453>
- Heimann, T. (2019). Bioeconomy and SDGs: Does the bioeconomy support the achievement of the SDGs? *Earth’s Future*, 7(1), 43–57. <https://doi.org/10.1029/2018EF001014>
- Ishartono, I., & Raharjo, S.T. (2022). Sustainable development goals (SDGs) dan pengentasan kemiskinan. *Share: Social Work Journal*, 6(2), 159–167. <http://www.bappenas.go.id/id/berita-dan-siaran->
- Jayasinghe, K., & Soobaroyen, T. (2009). Religious “spirit” and peoples’ perceptions of accountability in Hindu and Buddhist religious organizations. *Accounting, Auditing & Accountability Journal*, 22(7), 997–1028. <https://doi.org/10.1108/09513570910987358>
- Krasodomska, J., Zieniuk, P., & Kostrzewska, J. (2023). Reporting on sustainable development goals in the European Union: What drives companies’ decisions? *Competitiveness Review*, 33(1), 120–146. <https://doi.org/10.1108/CR-12-2021-0179>
- Kwalepa, E., Leunupun, P., & Persulesy, G. (2022). Kesiapan penerapan laporan keuangan organisasi nonlaba berdasarkan ISAK 35 (Studi kasus Jemaat GPM Murai Klasis Aru Tengah). *IMPREST: Jurnal Ilmiah Akuntansi*, 1(1), 38–44.
- Marviana, R. D., Nurhayani, U., Abdullah, I., & Ubar, R. (2021). Sosialisasi pengenalan dan pelatihan penyusunan laporan keuangan mesjid berdasarkan PSAK No. 45. *RESWARA: Jurnal Pengabdian Kepada Masyarakat*, 2(2), 387–393. <https://doi.org/10.46576/rjpkm.v2i2.1228>
- Mawonde, A., & Togo, M. (2019). Implementation of SDGs at the University of South Africa. *International Journal of Sustainability in Higher Education*, 20(5), 932–950. <https://doi.org/10.1108/IJSHE-04-2019-0156>
- Mohammed, N. F., Mohd Fahmi, F., & Ahmad, A. E. (2019). The need for Islamic accounting standards: the Malaysian Islamic financial institutions experience. *Journal of Islamic Accounting and Business Research*, 10(1), 115–133. <https://doi.org/10.1108/JIABR-12-2015-0059>
- Mukhlisin, M., Hudaib, M., & Azid, T. (2015). The need for Shariah harmonization in financial reporting standardization: The case of Indonesia. *International Journal of Islamic and Middle Eastern Finance and Management*, 8(4), 455–471. <https://doi.org/10.1108/IMEFM-10-2013-0110>
- Munzir, M., Andriyan, Y., Ramadani, F., Syafruddin, R.J., Fakdawer, E., & Tumana, R.J. (2023). Pelatihan laporan keuangan berbasis rumah ibadah pada Distrik Salawati Kabupaten Sorong. *Jurnal Masyarakat Mandiri*, 7(5), 4712–4719. <https://doi.org/10.31764/jmm.v7i5.17139>
- Musah, A. (2023). The role of institutional efficiency in achieving the SDGs: evidence from Africa. *Journal of Business and Socio-Economic Development*. <https://doi.org/10.1108/jbsed-02-2023-0008>
- Nogueiro, T., Saraiva, M., Jorge, F., & Chaleta, E. (2022). The Erasmus+ Programme and Sustainable Development Goals—Contribution of Mobility Actions in higher education. *Sustainability*, 14(3), 1–16. <https://doi.org/10.3390/su14031628>
- Nurhakim, M. I., Yuliaty, Y., & Putra, F. (2022). Services of the Worship House of the Padepokan Dhammadipa Buddhist House of Worship for People with Disabilities. *Journal of ICSAR*, 6(1), 7–19. <https://doi.org/10.17977/um005v6i12022p007>
- Prihatmingtyas, B., Fatima, W. Q., & Khairunisa, L. (2021). Analisis transparansi dan akuntabilitas laporan keuangan organisasi nirlaba Panti Asuhan Al-Maun Desa. *Ngajum Kabupaten Malang. Referensi: Jurnal Ilmu Manajemen Dan Akuntansi*, 9(1), 37–44.

- Pryangan, W., Rustam, R.M., Sakka, G.P.U., & Hepriansyah, A. (2023). Pendampingan akuntabilitas laporan keuangan rumah ibadah di Kendari. *Jurnal Abdi Dan Dedikasi Kepada Masyarakat Indonesia (NadiKami)*, 1(1), 26–32.
- Puspita, L. M. N., Halimatusyadiah, H., & Usman, D. (2022). Literasi dan pelatihan dasar akuntansi masjid berbasis ISAK 35 bagi pengurus masjid di Kota Bengkulu. *Jurnal Nusantara Mengabdi*, 1(3), 167–181.  
<https://doi.org/10.35912/jnm.v1i3.726>
- Rahayu, S., Hapsari, D. W., & Puspita, E. R. (2019). Penyusunan laporan keuangan rumah ibadah sesuai dengan PSAK 45 pada siswa-siswi Sekolah Menengah Kejuruan Mathlul Anwar Program Studi Akuntansi. *DINAMISIA: Jurnal Pengabdian Kepada Masyarakat*, 3(1), 135–143.
- Romdioni, A. N., & Wahyudi, C. A. (2023). Pendampingan pencatatan dan penyusunan aplikasi laporan keuangan Masjid Al-Manar Merauke Berdasarkan ISAK 35. *Alkhidmah: Jurnal Pengabdian Dan Kemitraan Masyarakat*, 1(1), 144–156.
- Rothrock, L., Abraham, A., Graf, A., Rodopman, M., & Nold, D. (2021). Aiding decision makers to reopening of places of worship. *Human Factors and Ergonomics In Manufacturing*, 31(4), 349–359. <https://doi.org/10.1002/hfm.20891>
- Sabara, S., & Aksa, A. (2022). Religious harmony through the establishment of a house of worship based on local Wisdom in Kei Islands, Maluku. *Al-Qalam*, 28(2), 279–292.
- Safitri, A. O., Yuniarti, V. D., & Rostika, D. (2022). Upaya peningkatan pendidikan berkualitas di Indonesia: Analisis pencapaian sustainable development goals (SDGs). *Jurnal Basicedu*, 6(4), 7096–7106.  
<https://doi.org/10.31004/basicedu.v6i4.3296>
- Sanjaya, A. B. (2016). *Manajemen filantropi berbasis rumah ibadah (Studi komparasi manajemen filantropi di Masjid Syuhada dan Gereja Santo Antonius Kotabaru Yogyakarta)*. UIN Sunan Kalijaga.
- Santoso, O. F., & Pudjolaksono, E. (2018). Penerapan akuntansi nirlaba dalam rangka peningkatan kelengkapan penyajian informasi laporan keuangan pada Gereja Kristus Tuhan (GKT) Banyuwangi. *Calyptra: Jurnal Ilmiah Mahasiswa Universitas Surabaya*, 7(2), 352–360.
- Saputra, M. R., & Ramadhani, S. (2021). Sistem informasi bantuan dana hibah operasional rumah ibadah Kabupaten Bengkalis. *Jurnal Teknologi Dan Informasi Bisnis*, 3(1), 147–152. <https://doi.org/10.47233/jteksis.v3i1.171>
- Kabes, Y. J.S., Khotimah, N., Firdaus, A., Tumana, R.J., & Munzir, M. (2023). Pendampingan rumah ibadah (Gereja dan Pura) pada penyusunan laporan keuangan di Kabupaten Sorong. *Jurnal Abdi Psikonomi*, 4(2), 130–135.
- Scarpa, F., Torelli, R., & Fiandrino, S. (2023). Business engagement for the SDGs in COVID-19 time: an Italian perspective. *Sustainability Accounting, Management and Policy Journal*, 14(7), 152–178.  
<https://doi.org/10.1108/SAMPJ-08-2022-0403>
- Shayan, N. F., Mohabbati-Kalejahi, N., Alavi, S., & Zahed, M. A. (2022). Sustainable Development Goals (SDGs) as a framework for corporate social responsibility (CSR). *Sustainability*, 14(3), 1–27.  
<https://doi.org/10.3390/su14031222>
- Siregar, L. M. (2018). Akuntansi keuangan mesjid: Suatu tinjauan. *Menara Ekonomi*, 4(2), 50–58.
- Sirmayanti, S., Mahjud, I., & Rijal. Muh Chaerur. (2019). *Pengembangan sistem teknologi informasi rumah ibadah Berbasis mobile WEB*.
- Suarni, A., & Andayaningsi, S. (2018). Manajemen keuangan masjid se Sulawesi Selatan di era industri 4.0. oleh LAA. *Maisyir*, 5(2), 123–141.
- Nahar, H.S., & Yaacob, H. (2011). Accountability in the sacred context: The case of management, accounting and reporting of a Malaysian cash awqaf institution. *Journal of Islamic Accounting and Business Research*, 2(2), 87–113. <https://doi.org/10.1108/17590811111170520>
- Supawanhar, S., Askani, A., Charolina, O., Ditasman, D., & Hartono, R. (2022). Akuntabilitas dan transparansi keuangan masjid melalui pelatihan administrasi keuangan Masjidal-Muttaqin Kota Bengkulu. *Jurnal Pengabdian Masyarakat Bumi Rafflesia*, 5(1), 817–823.
- Syamril, S. (2019). Meneguhkan jatidiri masjid sebagai pusat peradaban. *Seminar Ilmiah Masjid I*, 1–196.
- Visvizi, A. (2022). Artificial Intelligence (AI) and Sustainable Development Goals (SDGs): Exploring the impact of AI on politics and society. *Sustainability*, 14, 1–3. MDPI. <https://doi.org/10.3390/su14031730>
- Wachyu, W., & Winarto, A. (2022). The role of household accounting in improving quality of Islamic LIFE. *Communication and Management*, 8, 63–67. <https://doi.org/10.5281/zenodo.7470370>
- Wardoyo, D. U., Aulia, N., Perdana, R., & Khotimah, D. K. (2022). Analisis implementasi ISAK 35 terhadap laporan keuangan Masjid Syamsul Ulum Periode 2021. *JUPEA*, 2(3), 356–369.
- Wijoyo, H., Suherman, S., & Khiong, K. (2022). Service quality Pandita Lokapalasaraya and Dharmaduta Indonesian Buddhian assembly. *Journal of Educational Administration Research and Review*, 6(1), 1–8.  
<https://doi.org/10.17509/earr.v6i1>
- Zanatun, A., Hidayat, S., & Rohaeni, N. (2018). Analisis laporan keuangan berdasarkan PSAK 109 Yayasan Rumah Yatim Arrohman. *AKUISISI: Jurnal Akuntansi*, 14(2). <http://dx.doi.org/10.24217>





# Tracing COVID-19 cluster during offline learning in the new era of pandemic

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ARTICLE INFO	ABSTRACT
<p><b>Article history</b> Received: 2023-07-14 Revised: 2023-10-05 Accepted: 2023-10-20 Published: 2024-02-28</p> <p><b>Keywords</b> COVID-19 Cluster Pandemic Tracing Transmission</p>	<p>Since January 2022, offline learning in the COVID-19 pandemic era has been going on for nearly a year. The government is attempting to revive the education sector, including universities. Nonetheless, this policy may result in the formation of a new SARS-CoV-2 infection cluster on campuses. One of the prevention measurements is conducting COVID-19 examinations. To support this effort, the infectious disease research team at Atma Jaya Catholic University of Indonesia (AJCU) examined COVID-19 infection by saliva specimens using RT-qPCR method, along with the completion of related questionnaire and epidemiology investigation form. Throughout the first week of December 2022, community service was conducted at the Pluit campus of AJCU with 749 participants (98.9% students). According to RT-qPCR results, only 12 participants (1.6%) were infected with SARS-CoV-2 virus. Most participants demonstrated positive compliance with health protocols, particularly, PeduliLindungi application scanning, hand washing, and mask usage. The implementation of health protocol resulted in a low positive rate compared to North Jakarta's statistics for the same week, preventing the formation of new COVID-19 clusters. The activity effectively controlled the spread of SARS-CoV-2 in AJCU environment, continuing the postponed 2030 agenda of the third Sustainable Development Goal to ensure good health and well-being.</p>
<p><b>Kata Kunci</b> COVID-19 Klaster Pandemi Pelacakan Transmisi</p>	<p><b>Pelacakan Klaster Covid-19 saat Pembelajaran Luring di Era Baru Pandemi.</b> Sejak Januari 2022, Pembelajaran Tatap Muka di era pandemi COVID-19 telah berlangsung selama hampir satu tahun. Pemerintah berupaya menghidupkan kembali sektor pendidikan, termasuk perguruan tinggi. Meskipun demikian, kebijakan tersebut dapat mengakibatkan terbentuknya klaster infeksi SARS-CoV-2 baru di kampus. Salah satu pendekatan dan solusi dari masalah tersebut adalah dengan melakukan pemeriksaan COVID-19 di lingkungan kampus. Guna mendukung kegiatan tersebut, tim peneliti penyakit menular Universitas Katolik Indonesia Atma Jaya (UJAJ) melakukan pemeriksaan infeksi COVID-19 dengan spesimen pooling air liur menggunakan metode RT-qPCR pada minggu pertama Desember 2022 di kampus Pluit Atma Jaya. Kegiatan tersebut melibatkan 749 partisipan (98,9% siswa). Menurut hasil RT-qPCR, 12 partisipan (1,6%) terinfeksi virus SARS-CoV-2. Hasil kuesioner menunjukkan kepatuhan peserta terhadap protokol kesehatan, terutama mengenai skrining aplikasi PeduliLindungi, mencuci tangan, dan menggunakan masker. Protokol kesehatan yang diimplementasikan di kampus membuat presentase positif rendah jika dibandingkan dengan data positif wilayah Jakarta Utara dan tidak terciptanya kluster baru COVID-19 di kampus. Pemeriksaan mampu mendeteksi adanya kasus positif dan mencegah penularan virus lebih lanjut. Melalui kegiatan tersebut telah dibuktikan bahwa persebaran COVID-19 dapat dikendalikan dengan baik di lingkungan UJAJ. Menurunnya kasus positif diharapkan dapat mendukung pelaksanaan kegiatan Sustainable Development Goals (SDGs) yang tertunda khususnya agenda-agenda pada tujuan SDGs yang ke-3 dalam mencapai kesehatan dan kesejahteraan yang baik.</p>

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## INTRODUCTION

The COVID-19 disease, which is caused by the SARS-CoV-2 virus, has been declared a global pandemic as of March 11, 2020. The declaration was made after the number of COVID-19 cases outside of China increased thirteenfold, with over 118,000 cases in 114 countries resulting in 4,289 fatalities (World Health Organization, 2020b). Consequently, it is affecting the process of achieving the third Sustainable Development Goal (SDG), which is to ensure healthy lives and promote well-being for all at all ages and impeding global efforts to achieve the 2030 agenda. Prior to the pandemic, substantial regional disparities hampered progress in many areas of health, including reproductive, maternal, and child health, immunization coverage, and the treatment of communicable diseases. COVID-19 had infected more than 500 million people worldwide by the middle of 2022. The latest estimates indicate that by the end of 2021, the number of global "excess deaths" directly and indirectly attributable to COVID-19 could have reached 15 million. The pandemic has severely disrupted essential health services in 92% of the 129 countries surveyed by the end of 2021, increased the prevalence of anxiety and depression, lowered global life expectancy, derailed progress toward eradicating HIV, tuberculosis (TB), and malaria, and halted two decades of work toward achieving universal health coverage. As a consequence, overall vaccination rates for diphtheria, tetanus and pertussis (DTP) declined for the first time in ten years, and approximately 14.9 million direct and indirect deaths and TB and malaria deaths increased. The pandemic had a substantial negative impact on the achievement of all 17 Sustainable Development Goals (SDGs), including the third objective to achieve "good health and well-being" (World Health Organization, 2022b, 2022a). According to Yuan et al. (2023), a number of adverse consequences associated with COVID-19 undermine the achievement of the third SDG: heightened healthcare demands, limited hospital services, and diminished medical resources allocated to other ailments. Therefore, continued effort in reaching this SDG remains crucial and we can resume the achievement of this goal by first tackling COVID-19.

As of October 11, 2021, Indonesia was ranked 1st in having the highest numbers of SARS-CoV-2 infections in Southeast Asia with 4.2 million confirmed cases (ASEAN Biodiaspora Virtual Center, 2021); however, as of June 20, 2022, Vietnam surpassed Indonesia with 6 million cases (ASEAN Biodiaspora Virtual Center, 2022). Based on Government Regulation No. 21/2020, the government issued the Large-Scale Social Restriction (LSSR) policy in response to the rising number of cases. In addition to the closure of schools and workplaces, the policy also restricted religious and other public activities. The policy was subsequently modified to Community Activities Restrictions Enforcement (CARE) at the beginning of 2022. It permitted restricted offline education for the education sector, dining together in public places (restaurants, cafes, etc.) with a maximum capacity of 50% for a limited time, and restricted work from the office for both essential and non-essential sectors. Entrance to public facilities also requires screening via the PeduliLindungi application (Indonesian Ministry of Home Affairs, 2022). By September 2022, there were a total of 6.4 million confirmed COVID-19 cases on a national scale. The number has decreased compared to the prior period. This might be related to the regulation and, in particular, the rapid mass administration of the COVID-19 vaccine that has been disseminated since the beginning of 2021, resulting in a decline in the number of positive cases throughout the years. The initial, second, and third vaccination doses were administered on January 14, 2021, February 17, 2021, and January 12, 2022, respectively. In Indonesia, the distribution and administration of COVID-19 vaccines vary based on the level of COVID-19 transmission. Due to the high frequency of transmission, DKI Jakarta in particular is one of the prioritized provinces. According to UNICEF data retrieved on 6 October 2022, the government's vaccination program has been fairly effective, with approximately 204 million people receiving their first dose, 171.1 million receiving second doses of the COVID-19 vaccine, and an additional 63.3 million receiving their third dose or first booster shot.

The pandemic, which lasted for almost three years, had a significant impact on teaching and learning activities, hampering the education sector, including higher education. To prevent the transmission of SARS-CoV-2 and ensure educational progress, online learning activities were initiated at the onset of the pandemic. In this new era of normalcy, the Indonesian government has implemented offline learning and social gathering that might result in new virus clusters due to natural virus that is still undergoing mutation and causing periodic infection surges. This incidence therefore concerns the formation of a campus cluster as it could extend to their own household after contact with infected individuals. The government was still encouraging people to continue adhering to health protocols, limiting the number of people in public areas, and in particular administering vaccinations. It is expected that the spread will be prevented through these activities; thus, as academicians at the university level, we would like to verify whether or not the program being implemented is effective in preventing clusters by observing positive cases on campus. The recent emergence of Omicron sub-variants, specifically XBB, has contributed to an increase in the prevalence of positive cases in Indonesia. Thus, the periodic screening of direct offline learning participants using NAAT (Nucleic Acid Amplification Test)-based diagnosis is one feasible and reliable strategy (World Health Organization, 2020a). Despite this, the diagnosis of SARS-CoV-2, which typically utilizes nasopharyngeal and oropharyngeal swab specimens (NPOP), can be considered impractical because it requires special preparation and might cause discomfort (Williams et al., 2021). Therefore, saliva as a specimen to detect SARS-CoV-2 with the RT-qPCR method is regarded as more practical and has been implemented in previous community service activities at multiple elementary schools from 2021–2022. In early December 2022, the academic communities of Atma Jaya Catholic University of Indonesia (AJCU) participated in similar campus-based activities. Since offline learning has resumed, it urges the AJCU academic community to ensure that learning activities were not affected or minimally affected by the COVID-19 pandemic. Subsequently, this situation necessitates an urgency for us to monitor and prevent both the transmission of COVID-19 and the formation of new virus clusters. The objectives of the community

service were tracing COVID-19 infection on the AJCUI campus, minimizing the transmission of COVID-19, and determining people's awareness of vaccination and health protocols, thus accelerating global efforts back on track to achieve the 2023 agenda of the third SDGs, ensuring health and wellbeing.

## METHOD

The community service activity was held in the first and second week of December 2022, with 749 participants, the majority of whom were AJCUI students (98.93%), followed by AJCUI lecturers, employees, and relatives of the academic community (1.07%). The activity was conducted in collaboration with the coordinator and staff of the Pluit campus (AJCUI COVID-19 Laboratory), the undergraduate program, and the Biomedicine Master program from the School of Medicine and Health Sciences, Atma Jaya Catholic University of Indonesia. The activities were conducted in four parts: community service activity coordination and socialization, specimen collection, SARS-CoV-2 detection in the laboratory, and data analysis and results report.

### Community Service Activity Coordination and Socialization

Prior to specimen collection, our team coordinated with the staff of relevant departments at AJCUI to conduct examinations among students, employees, and relatives of both targeted participants. Information and a schedule of the activities were disseminated via digital media, posters, and brochures. Comprehensive explanations regarding COVID-19 detection using saliva specimens and their collection are provided in the video via a link embedded on the poster, which serves to educate individuals who review the poster (Figure 1). The digital media contained an explanation of the efficacy of a screening method that was previously implemented in an elementary school as part of a community service initiative to prevent the spread of the virus following direct offline learning at school. Additionally, a concise overview of the COVID-19 detection process, from specimen collection to reverse transcription polymerase chain reaction (RT-PCR), was also presented. Explanations regarding the usage of saliva specimens were proven non-invasive and preferable by the students, thus supporting the method of saliva specimen collection in this current community service. In addition, the link provided access to the previously published paper by Mahendra et al. (2021), which specified the validity of saliva-based COVID-19 RT-PCR detection.



Figure 1. Community Service Information Brochures

### Specimen Collection

Participants were requested to provide informed consent on-site, complete the registration form, the COVID-19 questionnaire prepared by the research team and epidemiology investigation form issued by the Indonesian Ministry of Health, followed by the collection of saliva specimens in an open area at each predetermined location. Participants were required to fast 15–30 minutes prior to specimen collection. Each participant was instructed to collect 0.5–0.75 mL of saliva using a collection tube. The questionnaire form particularly inquired about participants' prior SARS-CoV-2 infection, vaccination history, and attitude toward five health protocols. Figure 2 depicted the community services' overall workflow.



Figure 2. COVID-19 Community Service Activity at Atma Jaya Pluit Campus: (a) Procedure for participant registration, completion of informed consent and questionnaire; (b) Distribution of tubes for self-collected saliva specimens; and (c) Saliva specimen collection by participants per research team instructions

### SARS-CoV-2 Detection in the Laboratory

The detection of SARS-CoV-2 from saliva specimens was conducted at the enhanced biosafety level 2 (BSL 2) laboratory at the Faculty of Medicine and Health Science, AJCUI. The specimens were heated at 95°C for 10 minutes for the inactivation process. We also conduct the saliva pooling method prior to the heating process (Mahendra et al., 2021). This method has proven reliable with an overall agreement greater than 85% and has accelerated the testing capacity up to fourfold (Kaisar et al., 2022). Followed by virus detection using RT-qPCR with the xABT Multiple Real-Time PCR Kit to detect three target genes: Open Reading Frame 1ab (ORF1ab), Nucleocapsid (N), and Envelope (E). The RT-qPCR method was operated from November 30 to December 14, 2022.

### Data Analysis and Results Report

The RT-qPCR results and questionnaire data were input and stored in Microsoft Excel. In addition, the distribution and frequencies for every question were generated. The RT-qPCR results would be delivered to each participant individually via WhatsApp within a maximum of 24 hours. Participants who were tested negative would only receive notification of results, which cannot be used as legal evidence for travel or other activities, whereas participants who were tested positive would receive both notification and COVID-19 test result from AJCUI COVID-19 laboratory, which can be used as legal evidence for follow-up treatment or independent isolation.

## RESULTS AND DISCUSSION

Based on the RT-qPCR detection, 1.6% (12 of 749) of the participants tested positive for the SARS-CoV-2 virus. Within 24 hours, the participants were notified of the PCR results via WhatsApp and the PeduliLindungi (PL) application. In addition to the COVID-19 PCR test performed on saliva specimens, participants also completed the questionnaire and epidemiological investigation form. The data revealed that 97.7% of respondents had received the full dose of the COVID-19 vaccine, and 88.58% had also received the initial booster dose. Furthermore, 1.46% of participants had already received the second booster, which all were medical students of AJCUI. Compliance with health protocols was observed for "compliance with PL application scanning," which was always performed by more than 73% of participants; "hand washing activities," which were performed 5–10 times per day by nearly 60% of participants; and "wearing masks outside," which was performed by 85% of participants. However, 75% of participants occasionally engaged in "eating together with non-family members," and 76% rarely engaged in "social distancing >1.5 meters." Overall, the generally positive behavior of AJCUI residents to apply the COVID-19 health protocols in their daily activities resulted in 98.4% negative COVID-19 detections. Our research indicates that vaccination and adherence to health protocols, such as wearing masks and frequent handwashing, contributed to the low COVID-19 positivity rate. Previous studies also demonstrated that COVID-19 infection can be prevented through the consistent use of face masks, hand washing, and social distancing (Doung-Ngern et al., 2020; Masa et al., 2021; Egunjobi, 2020). The results are presented in Table 1 and Table 2.

Data collected from positive participants were analyzed separately (Table 3). According to the data, all infected participants had at least received the COVID-19 vaccine up to the first booster. Interestingly, 50% of the students who were positive when tested had previously been infected with SARS-CoV-2. This might be due to a number of factors, but one in particular involves the virus's mutagenic potential; an individual cured of the original SARS-CoV-2 is not effectively protected against its viral mutations or new infection. Upon infection with SARS-CoV-2, the host develops humoral immunity; however, the virus' mutagenic potential may enable it to adapt and infect individuals who have recovered (Costa et al., 2021; Fabiánová et al., 2021; Krishna et al., 2020). Moreover, on the implementation of health protocols, infected participants complied with the rules for wearing masks, although the majority of them do not always practice social isolation and dine with non-family members. This condition also applies to those who are tested negative in this examination, as they have also been vaccinated and adhere to the health protocol. With a positive rate of only 1.6%, which is lower than North Jakarta's positive rate of 5.84% of the corresponding week (Darmawan, 2022), the exact causes

of the infection cannot be precisely determined since there might be numerous contributing parameters such as a person's mobility, the people they meet, the health of their family at home, or their own immunity (Liu et al., 2020; Rashedi et al., 2020; Shereen et al., 2020).

Table 1. Previous COVID-19 infection history, vaccination history, and of participants

Parameter(s)	Total (%)
Demography (100% to each parameter)	
	2019
	2020
Students	2021
	2022
Lecturers and employees	
Others*	
	Private vehicle
	Public vehicle
Transportation	Private vehicle (>50%)
	No answer
	North Jakarta
	South Jakarta
	East Jakarta
Domicile	West Jakarta
	Central Jakarta
	Outside Jakarta
	No answer
COVID-19 infection history (according to antigen or PCR test; 100% towards each criterion)	
Never	
One time	
Two times	
Three times	
Four times	
Vaccination history (100% towards each criterion)	
1 <sup>st</sup> dose	
2 <sup>nd</sup> dose	
1 <sup>st</sup> booster	
2 <sup>nd</sup> booster	
1 <sup>st</sup> additional dose	
2 <sup>nd</sup> additional dose	
No answer	

\*Relatives of students or employee

Table 2. Participant adherence to the health protocol

Parameter(s)	Total (%)
Health protocols (100% towards each criterion)	
	Sometimes
PL application scanning when entering public area(s)	Always
	Never
	No answer
	<5 times
Hand washing activities/day	5-10 times
	>10 times
	No answer
	In closed/crowded places
Masks usage	Always (outside home)
	No answer
	Never
Social distancing >1.5 meter	Sometimes
	Always
	No answer
	Never
Dining together with people (not family)	Sometimes
	Always
	No answer

Table 3. Survey results of participants with COVID-19 positive result

Parameter(s)		Total (%)
Demography (100% to each parameter)		
Students	2019	1 (8.33)
	2020	3 (25)
	2021	4 (33.33)
	2022	4 (33.33)
Transportation	Private vehicle	3 (25)
	Public vehicle	7 (58.33)
	Private vehicle (>50%)	2 (16.67)
Domicile	North Jakarta	5 (41.67)
	South Jakarta	1 (8.33)
	East Jakarta	3 (25)
	West Jakarta	2 (16.67)
	Central Jakarta	0
	Outside Jakarta	1 (8.33)
COVID-19 infection history (according to antigen or PCR test; 100% towards each criterion)		
Never		6 (50)
One time		5 (41.67)
Two times		1 (8.33)
Three times		0
Four times		0
Vaccination history (100% towards each criterion)		
1 <sup>st</sup> dose		12 (100)
2 <sup>nd</sup> dose		12 (100)
1 <sup>st</sup> booster		12 (100)
2 <sup>nd</sup> booster		10 (83.33)
1 <sup>st</sup> additional dose		0
2 <sup>nd</sup> additional dose		0
Health protocols (100% towards each criterion)		
PL application scanning when entering public area(s)	Sometimes	3 (25)
	Always	9 (75)
	Never	0
Hand washing activities/day	<5 times	0
	5-10 times	11 (91.67)
	>10 times	1 (8.33)
Masks usage	In closed/crowded places	2 (16.67)
	Always (outside home)	10 (83.33)
Social distancing >1.5 meter	Never	2 (16.67)
	Sometimes	10 (83.33)
	Always	0
Dining together with people (not family)	Never	0
	Sometimes	7 (58.33)
	Always	5 (41.67)

The COVID-19 testing using RT-qPCR revealed a low prevalence of SARS-CoV-2 infections in the environment of AJCUI. Based on the data, participants generally have positive attitudes and practices toward health protocols, which the Indonesian government encourages, such as using masks properly, maintaining social distance, and frequently washing hands with soap. Leech et al. (2022), Brooks and Butler (2021), and Cheng et al. (2021) demonstrated that mask-wearing behavior reduced COVID-19 transmission significantly. Other non-pharmaceutical public health interventions, such as social distancing and handwashing, have also been demonstrated to reduce COVID-19 cases (Manikandan, 2020; Talic et al., 2021; Wong et al., 2022). The successful implementation of health protocols protected participants from viral infections. To effectively halt the spread of COVID-19 and prevent tens of thousands of additional fatalities, it is essential to provide equitable access to safe and effective vaccines. The WHO has mandated that 70% of individuals in all nations receive vaccinations by the middle of 2022. However, global vaccine distribution is far from equitable. As of May 2022, approximately 17% of individuals in low-income countries had received at least one dose of a vaccine, compared to over 80% in high-income nations. During this community service, 174.8 million out of 273.5 million Indonesian citizens were recorded to have received both vaccination doses (62.9% vaccination coverage), with 68.5 million and 1.2 million citizens administered for the first and second booster, respectively, per December 2022 according to UNICEF. Based on UNICEF data in 2022, the ratio of AJCUI residents who have received the initial dose of vaccination to the national vaccination coverage is approximately 1:238,000, which has already been established as a satisfactory action of compliance in getting vaccinated to prevent COVID-19 transmissions. The majority of participants' (>80%) awareness and willingness to participate in vaccination programs could also contribute to the restoration of the third SDGs.

This community service at AJCUI supports offline learning in the new era of the pandemic by tracing the incidence of COVID-19 infection on the Pluit campus, allowing individuals to undergo independent isolation. In addition, COVID-19



testing helps prevent further transmission and the formation of new COVID-19 clusters on campus. Moreover, all faculty members and students should continue to implement the health protocols to avoid the spread of SARS-CoV-2.

## CONCLUSION

The COVID-19 examination was able to detect 12 positive cases in individuals who were feeling healthy or without symptoms; therefore, they attended offline classes. Thus, this examination is beneficial for preventing further transmission of the virus by tracing contacts and requesting independent isolation. The activity effectively controlled the spread of COVID-19 in the AJCUI environment, therefore continuing the postponed 2030 agenda of the third SDGs to increase good health and well-being. In addition, a questionnaire-based form revealed participants' compliance with vaccination programs and health protocols. This study also demonstrated that no clusters have formed and that direct offline learning activities are safely conducted. We suggested that future research incorporate direct socialization activities to promote adherence to safety protocols and routine screening procedures to effectively prevent the transmission of viruses. In addition, our community service was positively received by the targeted participants; thus, further university-based initiatives targeting a different disease type can be executed similarly.

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## REFERENCES

- ASEAN Biodiaspora Virtual Center, A. (2021). COVID-19 situational report in the ASEAN region. *ASEAN Biodiaspora Virtual Center, ABVC*, 1–10. [https://asean.org/wp-content/uploads/2021/10/COVID-19\\_Situational-Report\\_ASEAN-BioDiaspora-Regional-Virtual-Center\\_11Oct2021.pdf](https://asean.org/wp-content/uploads/2021/10/COVID-19_Situational-Report_ASEAN-BioDiaspora-Regional-Virtual-Center_11Oct2021.pdf)
- ASEAN Biodiaspora Virtual Center, A. (2022). COVID-19 situational report in the ASEAN region. *ASEAN Biodiaspora Virtual Center, ABVC*, 1–10. [https://asean.org/wp-content/uploads/2022/06/COVID-19\\_Situational-Report\\_ASEAN-BioDiaspora-Regional-Virtual-Center\\_20Jun2022.pdf](https://asean.org/wp-content/uploads/2022/06/COVID-19_Situational-Report_ASEAN-BioDiaspora-Regional-Virtual-Center_20Jun2022.pdf)
- Brooks, J. T., & Butler, J. C. (2021). Effectiveness of mask wearing to control community spread of SARS-CoV-2. *Jama*, 325(10), 998–999.
- Cheng, Y., Ma, N., Witt, C., Rapp, S., Wild, P. S., Andreae, M. O., Pöschl, U., & Su, H. (2021). Face masks effectively limit the probability of SARS-CoV-2 transmission. *Science*, 372(6549), 1439–1443.
- Costa, A. O. C., Neto, H. de C. A., Nunes, A. P. L., de Castro, R. D., & de Almeida, R. N. (2021). Covid-19: Is reinfection possible? *EXCLI Journal*, 20, 522–536. <https://doi.org/10.17179/excli2021-3383>
- Darmawan, A. D. (2022). Daftar kabupaten/kota dengan positivity rate aglomerasi tujuh hari terakhir tertinggi di DKI Jakarta (Sabtu, 17 Desember 2022). <https://databoks.katadata.co.id/datapublish/2022/12/19/daftar-kabupatenkota-dengan-positivity-rate-aglomerasi-tujuh-hari-terakhir-tertinggi-di-dki-jakarta-sabtu-17-desember-2022>
- Doung-Ngern, P., Suphanchaimat, R., Panjangampattana, A., Janekrongtham, C., Ruampoom, D., Daochaeng, N., Eungkanit, N., Pisitpayat, N., Srisong, N., & Yasopa, O. (2020). Case-control study of use of personal protective measures and risk for SARS-CoV 2 infection, Thailand. *Emerging Infectious Diseases*, 26(11), 2607. <https://doi.org/10.3201/eid2611.203003>
- Egunjobi, J. P. (2020). Effectiveness of hand washing, face masking, social distancing, and lockdown in preventing the spread of Covid-19. *BIEA Graduate Conference*.
- Fabiánová, K., Kyncl, J., Vlckova, I., Jirincova, H., Kostalova, J., Liptáková, M., Orliková, H., Sebestova, H., Limberková, R., & Macková, B. (2021). COVID-19 reinfections. *Epidemiol Mikrobiol Imunol*, 70(1), 62–67.
- Indonesian Ministry of Home Affairs. (2022). Pemberlakuan pembatasan kegiatan masyarakat level 3, level 2, dan level 1 Corona Virus Disease 2019 di wilayah Jawa Dan Bali.
- Kaisar, M. M. M., Jonnatan, S., Widowati, T. A., Kristin, H., Vasandani, S. R., Mahendra, C., & Ali, S. (2022). Accelerating the laboratory testing capacity through saliva pooling prior to direct RT-qPCR for SARS-CoV-2 Detection. *Diagnostics*, 12(12), 3160.
- Krishna, E., Pathak, V. K., Prasad, R., Jose, H., & Kumar, M. M. (2020). COVID-19 reinfection: Linked possibilities and future outlook. *Journal of Family Medicine and Primary Care*, 9(11), 5445.
- Leech, G., Rogers-Smith, C., Monrad, J. T., Sandbrink, J. B., Snodin, B., Zinkov, R., Rader, B., Brownstein, J. S., Gal, Y., & Bhatt, S. (2022). Mask wearing in community settings reduces SARS-CoV-2 transmission. *Proceedings of the National Academy of Sciences*, 119(23). <https://doi.org/10.1073/pnas.2119266119>
- Liu, T., Liang, W., Zhong, H., He, J., Chen, Z., He, G., Song, T., Chen, S., Wang, P., & Li, J. (2020). Risk factors associated with COVID-19 infection: a retrospective cohort study based on contacts tracing. *Emerging Microbes & Infections*, 9(1), 1546–1553. <https://doi.org/10.1080/22221751.2020.1787799>

- Mahendra, C., Kaisar, M. M. M., Vasandani, S. R., Surja, S. S., Tjoa, E., Christya, F., Junusmin, K. I., Widowati, T. A., Irwanto, A., & Ali, S. (2021). Wide application of minimally processed saliva on multiple RT-qPCR Kits for SARS-CoV-2 Detection in Indonesia. *Frontiers in Cellular and Infection Microbiology*, 11(August), 1–11. <https://doi.org/10.3389/fcimb.2021.691538>
- Manikandan, N. (2020). Are social distancing, hand washing and wearing masks appropriate measures to mitigate transmission of COVID-19? *Vacunas*, 21(2), 136.
- Masa, D. L. A., Vianello, O., Piccinini, M., Mariani, M., Brisca, G., Saffioti, C., Mesini, A., Marco, E. D. I., Castagnola, E., Force, G. T., Gattorno, M., Urbano, A. M., Maghnie, M., Ramenghi, L. A., Adriano, M., Moscatelli, A., Piccotti, E., Spiazzi, R., Scelsi, S., ... Petralia, P. (2021). Contact tracing, use of surgical masks, hand hygiene and social distancing represent a bundle of effective measures to control SARS-CoV-2 spreading among healthcare workers in a paediatric hospital. *Journal of Preventive Medicine and Hygiene*, 62(3), E592–E597. <https://doi.org/10.15167/2421-4248/jpmh2021.62.3.1719>
- Rashedi, J., Mahdavi Poor, B., Asgharzadeh, V., Pourostadi, M., Samadi Kafil, H., Vegari, A., Tayebi-Khosroshahi, H., & Asgharzadeh, M. (2020). Risk factors for COVID-19. *Infez Med*, 28(4), 469–474.
- Shereen, M. A., Khan, S., Kazmi, A., Bashir, N., & Siddique, R. (2020). COVID-19 infection: Emergence, transmission, and characteristics of human coronaviruses. *Journal of Advanced Research*, 24, 91–98.
- Talic, S., Shah, S., Wild, H., Gasevic, D., Maharaj, A., Ademi, Z., Li, X., Xu, W., Mesa-Eguiagaray, I., & Rostron, J. (2021). Effectiveness of public health measures in reducing the incidence of covid-19, SARS-CoV-2 transmission, and covid-19 mortality: systematic review and meta-analysis. *The BMJ*, 375, 1–15. <https://doi.org/10.1136/bmj-2021-068302>
- Williams, E., Isles, N., Chong, B., Bond, K., Yoga, Y., Druce, J., Catton, M., Ballard, S. A., Howden, B. P., & Williamson, D. A. (2021). Detection of SARS-CoV-2 in saliva: Implications for specimen transport and storage. *Journal of Medical Microbiology*, 70(2). <https://doi.org/10.1099/JMM.0.001285>
- Wong, R., Grullon, J. R., & Lovier, M. A. (2022). COVID-19 risk factors and predictors for handwashing, masking, and social distancing among a national prospective cohort of US older adults. *Public Health*, 211, 164–170.
- World Health Organization. (2020a). Diagnostic testing for SARS-CoV-2. <https://www.who.int/publications/i/item/diagnostic-testing-for-sars-cov-2>
- World Health Organization. (2020b). WHO Director-general's opening remarks at the media briefing on COVID-19 - 11 March 2020. <https://www.who.int/director-general/speeches/detail/who-director-general-s-opening-remarks-at-the-media-briefing-on-covid-19---11-march-2020>
- World Health Organization. (2022a). COVID-19 pandemic fuels largest continued backslide in vaccinations in three decades. <https://www.who.int/news/item/15-07-2022-covid-19-pandemic-fuels-largest-continued-backslide-in-vaccinations-in-three-decades>
- World Health Organization. (2022b). The Sustainable Development Goals Report 2022. *United Nations Publication Issued by the Department of Economic and Social Affairs*. <https://unstats.un.org/sdgs/report/2022/>
- Yuan, H., Wang, X., Gao, L., Wang, T., Liu, B., Fang, D., & Gao, Y. (2023). Progress towards the Sustainable Development Goals has been slowed by indirect effects of the COVID-19 pandemic. *Communications Earth & Environment*, 4(1), 184. <https://doi.org/10.1038/s43247-023-00846-x>



# Go digital MSMEs training to support women's empowerment program on Laiya Island, South Sulawesi

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ARTICLE INFO	ABSTRACT
<p><b>Article history</b> Received: Revised: Accepted: Published:</p> <p><b>Keywords</b> Community service Digital marketing Family welfare Marine products Women's empowerment</p>	<p><i>This community service activity aims to provide knowledge about the benefits of the digitalization program and the importance of empowering women to achieve gender equality and to improve people's skills in using digital systems by utilizing marine products by making and processing fish balls and learning how to package them. Community service activities were carried out on Laiya Island, Pangkep Regency, South Sulawesi Province, Indonesia from March to June 2023. This activity is divided into two stages. The first stage is digital marketing outreach and women's empowerment. At this stage, the proposing team provided material about the importance of empowering women, especially in processing marine products. We also explained the importance of empowering MSMEs by involving women on the island. In the second stage, we conducted training on the use of marine products, especially fish, as the main livelihood on this island. We teach participants how to process and package fish balls and market them online. One of the market attractions lies in digital packaging and marketing. Participants who take part in this activity generally understand how to make packaging in a simple way. At this level, participants are able to explain the importance of women's empowerment programs in supporting the improvement of community or family welfare. The results of the service increase participants' understanding and skills in online social media at the basic stage.</i></p>
<p><b>Kata Kunci</b> Hasil kelautan Kesejahteraan keluarga Pemasaran digital Pemberdayaan perempuan Pengabdian kepada masyarakat</p>	<p><b>Pelatihan UMKM Go digital untuk mendukung program pemberdayaan perempuan di Pulau Laiya, Sulawesi Selatan.</b> Kegiatan pengabdian kepada masyarakat ini bertujuan untuk memberikan pengetahuan tentang manfaat program digitalisasi dan pentingnya pemberdayaan perempuan untuk mencapai kesetaraan gender dan meningkatkan keterampilan masyarakat dalam menggunakan sistem digital dengan memanfaatkan hasil laut dengan membuat dan mengolah bakso ikan serta mempelajari cara mengemasnya. Kegiatan pengabdian kepada masyarakat dilaksanakan di Pulau Laiya, Kabupaten Pangkep, Provinsi Sulawesi Selatan, Indonesia pada bulan Maret hingga Juni 2023. Kegiatan ini dibagi menjadi dua tahap. Tahap pertama adalah penjangkauan pemasaran digital dan pemberdayaan perempuan. Pada tahap ini, tim pengusul memberikan materi tentang pentingnya pemberdayaan perempuan khususnya dalam pengolahan hasil laut. Kami juga menjelaskan pentingnya pemberdayaan UMKM dengan melibatkan perempuan di pulau tersebut. Tahap kedua, kami melakukan pelatihan pemanfaatan hasil laut khususnya ikan sebagai mata pencaharian utama di pulau ini. Kami mengajari peserta cara mengolah dan mengemas bakso ikan serta memasarkannya secara online. Salah satu daya tarik pasar terletak pada pengemasan dan pemasaran digital. Peserta yang mengikuti kegiatan ini umumnya memahami cara membuat kemasan secara sederhana. Pada level ini peserta mampu menjelaskan pentingnya program pemberdayaan perempuan dalam mendukung peningkatan kesejahteraan masyarakat atau keluarga. Hasil dari pengabdian meningkatkan pemahaman dan keterampilan peserta dalam media sosial online pada tahap dasar.</p>
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## INTRODUCTION

Micro, Small, and Medium Enterprises (MSMEs) make a major contribution to economic growth in Indonesia. Based on data from [bkpm.go.id](http://bkpm.go.id), 98.7% of all business units in this country are part of MSMEs. In fact, of the 133 million workforce in Indonesia, 120 million of them are involved in this sector. It is also necessary to emphasize that MSMEs have a very crucial contribution in increasing the Gross Domestic Product or better known as the Gross Domestic Product (GDP). This statement was immediately proven when MSMEs succeeded in contributing as much as 61.7% to the Gross Domestic Product of Indonesia in 2020 (Mazda, 2021).

Based on the data above, shows that the MSME sector has a big role in increasing Indonesia's GDP (Bahtiar & Saragih, 2020; Koeswahyono, Maharani, & Liemanto, 2022). Therefore, MSME owners must have the ability to create and apply technology related to digital technology. One form of digital technology is electronic commerce or online commerce. Competition in the use of e-commerce systems is increasing at this time (Wibowo, Alawiyah, & Azriadi, 2024). According to Muhammad Lutfi the Minister of Trade, MSMEs will fully engage digitally so that they can have businesses that export products abroad (Pemerintah Kabupaten Batu Bara, 2022). Even so, the number of MSMEs until 2022 is around 64.2 million MSMEs, but only 13 percent of MSMEs use digital technology in developing their MSME businesses (Pemerintah Kabupaten Batu Bara, 2022). This situation is certainly a cause for concern if it does not immediately receive serious attention from the government.

There are still MSMEs that have not utilized social media, including e-commerce as a medium for doing business today. It has been proven in terms of success that MSMEs that take advantage of advances in information technology facilities are more successful. Meanwhile, the problem in this service activity is the lack of skills of coastal communities, especially women, in marketing marine products or their husbands' catches through digital marketing. Social media has an important role as a forum for promoting products offered by MSME owners. The term digital marketing becomes important if MSME actors have skills in utilizing social media. In addition, for those who have a good level of creativity in promoting the products they offer through social media, the number of enthusiasts from the business they are doing will automatically increase. Based on interviews conducted with Haslinda's mother, she stated that many people on Laiya Island buy products online, especially when the goods they want to buy are not available on the island. However, very few of them take advantage of social media and e-commerce by promoting their products to people who live outside the island (Interview, 6 April 2023, Pulau Laiya).

Then, the recent COVID-19 also had a negative impact on the process of empowering women because the number of women's participation in formal work decreased by around 4.2 percent globally (AustralianGovernment, 2022). According to the World Economic Forum's Global Gender Gap Report 2021, the COVID-19 pandemic has extended the time it took to reach the global gender gap from 99.5 years to 135.6 years (AsiaDevelopment, 2021). The COVID-19 pandemic has indeed had a major negative impact on the process of achieving gender equality because many companies or industries have closed, resulting in many employees being expelled from companies. Then, there are also many employees who have to receive lower wages or salaries because companies are unable to pay their employees. MSMEs have also been impacted by the COVID-19 virus. There are around 1,785 cooperatives and 163,713 MSMEs affected by the virus according to data from the Ministry of Cooperatives (Wasik & Handriana, 2023).

According to "Revisiting the Pandemic: Surveys on the Impact of COVID-19 on Small Business and Workers" conducted by the Asian Foundation, women have a lower chance of survival, due to a lack of skills in managing family finances including family savings (AsiaDevelopment, 2021). This condition is the reason for the proposing team to provide training on the use of online media to the community, especially women on Laiya Island. This community service activity aims to encouraging women in digital marketing. The activity involves fostering a range of skills that are crucial in the rapidly evolving landscape of online promotion. Here are some key skills that can empower women in the field of digital marketing: (1) Digital Literacy. Digital platforms that develop following current trends are becoming an attraction in the marketing sector. Understand the basics of web analytics, SEO, and social media algorithms. Digital platforms can be a strategy for improving micro and small businesses (Suyanto et al., 2023). (2) Content Creation. Learn to write a story so that it becomes trending content for the younger generation. Familiarize yourself with multimedia content creation, including graphics and videos. Therefore, the concept of marketing through digital content has become a marketing strategy (Bui, Tran, Alang, & Le, 2023). (3) Social Media Management. Improve skills in using social media marketing more effectively. Increase understanding of trending brands so that audiences don't get bored and communities can build well. Improving skills in using social media is very important in the era of technology and information (Yanto, Ismail, Kiswanto, Rahim, & Baroroh, 2021). (4) Data Analysis. Analytical skills are needed to analyze data so that it can support useful decisions. Utilization of social media is very necessary, especially Google Analytics to support digital marketing. Several scholars see the importance of digital orientation because it can be a communication and organizational facility for an entrepreneur (Egala, Amoah, Bashiru Jibril, Opoku, & Bruce, 2024; Salih, Alsalhi, & Abou-Moghli, 2024). (5) SEO (Search Engine Optimization). Understand the basics of SEO to optimize content for search engines. Utilization of search engine algorithms as an information medium in developing digital marketing techniques. (6) Email Marketing. Marketing via email is an important thing to learn. Understand segmentation, personalization, and A/B testing in email marketing. (7)

Paid Advertising. Gain knowledge in running effective paid advertising campaigns (e.g., Google Ads, Facebook Ads). Understand budgeting, targeting, and ad copy optimization. (8) Graphic Design. Content creation skills can support basic knowledge of graphic design to produce visually attractive content. Then, it is also important to improve your skills in using Adobe Creative Suite or Canva. (9) Communication Skills. Successful digital marketing will rely heavily on communication, whether in the form of direct or written interactions. Develop presentation skills for reporting and pitching ideas. (10) Networking. The digital marketing industry requires a professional network. Therefore, a local event, webinar, and conference are important activities for an entrepreneur in building a professional network. (11) Adaptability. Improve skills in using digital marketing technology. (12) Project Management. Improve skills in studying project management marketing so that a collaboration will be formed.

Encouraging women to develop these skills and providing a supportive environment for their growth can contribute to increased representation and success in the digital marketing industry. Mentorship, training programs, and networking opportunities can further empower women in this field. This community service activity aims to provide knowledge about the benefits of the digitalization program and the importance of empowering women to achieve gender equality and to improve people's skills in using digital systems by utilizing marine products by making and processing fish balls and learning how to package them.

## METHOD

This community service activity was carried out on Laiya Island, Liukang Tupabbiring Utara sub-district, Pangkep Regency, South Sulawesi, Indonesia. This location was chosen because Laiya Island is one of the islands that has abundant marine resources. Meanwhile, on the other hand, the community still needs guidance on how to process these marine products. This activity was carried out in March 2023. This activity was carried out for one week. The picture below is the natural condition of Laiya Island. On the way to get to Laiya Island, we use a passenger boat that carries about 50 people. This passenger ship is also used by the community to transport household needs purchased on the mainland. The cost for one-way IDR is 15,000/person. Another way besides using passenger ships, people can also rent small boats to go to the island. The cost of renting a boat one way is around IDR 350,000 and can accommodate around 10 people. Figure 1 is Natural Conditions of Laiya Island and Figure 2 is is one of the means of transportation used for Laiya Island.



Figure 1. Natural Conditions of Laiya Island

Creating effective training programs for women in digital marketing requires a strategic approach to address their specific needs and challenges. Here's the method for designing training programs that can help enhance the skills of women in this field: (1) Skill Assessment: begin by conducting a thorough assessment of the existing skills and knowledge levels of the participants. This will help tailor the training content to their specific needs. (2) Basic Digital Marketing Concepts: start with foundational concepts such as digital marketing strategies, channels, and key performance indicators (KPIs). We ensure participants have a solid understanding of the basics before moving on to more advanced topics. (3) Content Creation and Copywriting: provide training on creating compelling and engaging content. Focus on writing for different digital platforms, including websites, blogs, and social media. We include elements of storytelling and visual content creation. (4) Social Media Marketing: offer in-depth training on social media platforms, including best practices

for content creation, community engagement, and advertising. We address the specific challenges and opportunities that women may encounter in social media marketing. (5) SEO Fundamentals: Cover the basics of search engine optimization (SEO), emphasizing the importance of keyword research, on-page optimization, and link building. We help participants understand how SEO contributes to digital marketing success. (6) Email Marketing: provide comprehensive training on email marketing strategies, including list building, segmentation, and designing effective email campaigns. Address the nuances of creating targeted and personalized content. (7) Paid Advertising: offer practical guidance on running paid advertising campaigns, covering platforms like Google Ads, Facebook Ads, and others. Include budgeting, targeting, ad copy creation, and performance analysis. (8) Analytics and Data Interpretation: train participants to use analytics tools such as Google Analytics to measure and interpret data. Emphasize the importance of data-driven decision-making in digital marketing. (9) Graphic Design Basics: introduce basic graphic design skills using tools like Canva or Adobe Spark. Provide insights into creating visually appealing graphics for social media, blogs, and other digital platforms. (10) Networking and Professional Development: Include sessions on building a professional network within the digital marketing industry. Encourage mentorship and provide guidance on career development opportunities. (11) Soft Skills and Communication: Incorporate training on soft skills, including effective communication, presentation skills, and negotiation. These skills are essential for building relationships and advancing in the workplace. (12) Inclusive Leadership and Empowerment: Address topics related to inclusive leadership, diversity, and empowerment. Provide strategies for navigating challenges, building confidence, and overcoming gender-related biases. (13) Hands-on Projects and Case Studies: Incorporate hands-on projects and case studies to allow participants to apply their knowledge in real-world scenarios. This practical experience enhances retention and skill application. (14) Feedback and Continuous Improvement: Establish mechanisms for feedback from participants and use this information to continuously improve and refine the training program. (15) Networking Events and Industry Connections: Facilitate networking events and provide opportunities for participants to connect with industry professionals. Building a supportive network is crucial for career growth. (16) Resource Library: Create a resource library with recommended readings, video tutorials, and other materials to support ongoing learning. (17) Post-Training Support: Offer post-training support through forums, webinars, or mentoring programs to address any additional questions or challenges participants may face in their roles.

This community service focuses on number 1, 2, and 3. These activities can design comprehensive training programs that address both technical skills and soft skills and can empower women to excel in digital marketing and contribute to a more diverse and inclusive industry.



Figure 2. The passenger boat used to go to Laiya Island

## RESULTS AND DISCUSSION

### The Concept of Gender Equality and Women's Empowerment

The concept of gender equality does not always discuss the biology of the sexes between men and women. Gender is socially defined through systemic normative pressures and is observed as a distribution gap at the population level. Gender can be observed in three ways in epidemiology, namely gender identity, gender personality, and gender diagnosis.



Gender is often associated with gender identity, measured by the self-report of an individual. This gender dimension can be defined as an individual viewing himself in the social continuum. Then, based on gender personality will be based on stereotypes and not sensitive to the context of generation, culture, age, class, and race. Finally, when measured from a gender diagnosis, this indicator is built from data, based on the presence or absence of several gender dimensions which are defined based on sex differences in a population (Colineaux, Soulier, Lepage, & Kelly-Irving, 2022). This community service activity focuses more on the gender dimension based on gender identity. This service activity will see how women as a gender in a social context are still trying to achieve family welfare.

Regarding gender equality, there are several issues that are always interesting to discuss, namely the role of women and men in society. This perception of gender is also supported by the media through a narrative (Fivush & Grysman, 2022). For some reason, in a gender-stratified society, activities carried out by men are always seen as better than those carried out by women, even though these activities are the same (Lorber, 2018). Gender mainstreaming is important to emphasize in society that women have the same opportunities as men in realizing an empowerment process.

One of the disadvantages that is often experienced by women is the opportunity to access employment. This condition will certainly lead to gender inequality. This gender inequality is also due to the very low level of women's participation in the empowerment process. On the other hand, it is mandatory for a country to achieve gender equality in a sustainable manner so that the goals of the Sustainable Development Goals (SDGs) can be achieved (Halişçelik & Soytaş, 2019). SDGs on goal five emphasize women's empowerment so that women can be free from poverty and have greater access to jobs, subsidized care, and public services (Goetz, 2020). An empowerment process becomes successful if the process can support gender equality at all levels both locally, nationally, and globally (Phillips, 2015). Therefore, development in a country will not be successful if it only advances one field. Successful development will involve women through empowerment programs that are multidimensional in nature, including involving communities and values (Galiè & Farnworth, 2019).

This service activity serves as a means to contribute to the achievement of Sustainable Development Goal (SDG) number five, focusing on gender equality. It aims to diminish gender disparities by implementing empowerment programs (UNWomen, 2022). This service activity plays a pivotal role in advancing women's economic empowerment by offering targeted training programs to enhance their skills. Through collaborative partnerships with stakeholders, we strive to create a conducive environment for women's progress. The significance of multi-stakeholder involvement is underscored in gender mainstreaming, as emphasized (Stibbe & Prescott, 2020) facilitating the acceleration of government program implementation. The involvement of multiple parties in discussions about gender contributes to a more comprehensive understanding of gender equality (Adolfsson & Madsen, 2020; Woodward, 2015) facilitating a nuanced and inclusive perspective. The existing gap in this theory pertains to the sustainability of women's empowerment, particularly in the context of skill enhancement, and underscores the need for a multi-stakeholder approach.

### Stages of training

A total of 55 participants, encompassing both young and adult women, actively engaged in this initiative. The involvement was multifaceted, as illustrated in the table detailing the participants' participation in socialization activities. The training activities on Laiya Island unfolded across several stages, commencing with a two-day socialization phase. This phase aimed at familiarizing MSMEs with the advantages of digital integration. Subsequently, the training progressed to focus on the utilization of marine products. During this stage, participants were instructed on crafting fish balls and packaging seafood, aligning with the overarching goals of the service activity. Figure 3 shows the age range of participants, Figure 4 shows the job of participants, and Figure 5 shows the education level of participants.

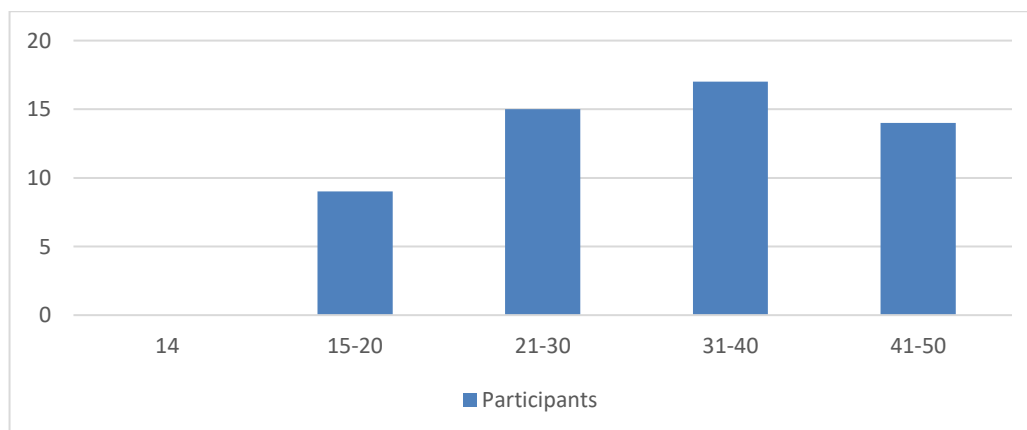


Figure 3. Age of participants

The data provided above delineates participant demographics based on age, revealing a distribution of 9 individuals in the 15-20 age group, 15 participants in the 21-30 age range, 17 individuals aged 31-40, and 14 participants aged 41-50, summing up to a total of 55 individuals. In terms of educational background, among the 55 participants, 4 individuals held undergraduate degrees, while 51 had completed high school education. Occupation-wise, the breakdown included 5 village officials, 35 housewives, 8 entrepreneurs, and 7 individuals without current employment among the diverse group of participants.

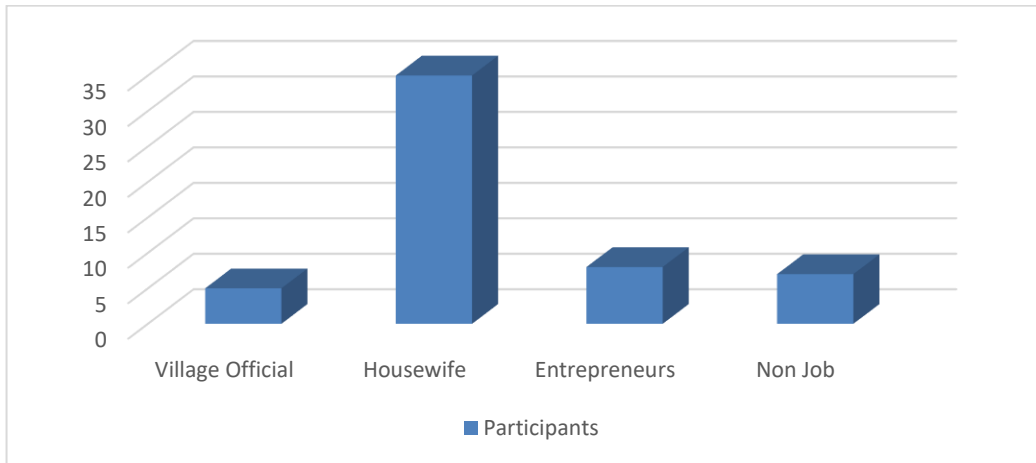


Figure 4. Job of participants

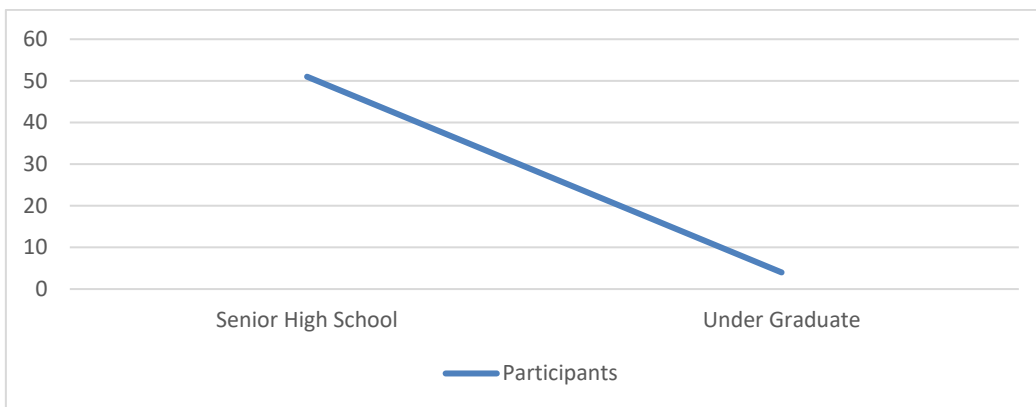


Figure 5. Education level of participants

### Socialization of Digital MSMEs and Empowerment of Women

In this community service activity, the implementing team explained the fact that MSMEs are a sector that is very promising as well as profitable for all parties involved in it which is certainly inevitable. The implementation team also said that it had been proven that MSMEs were one of the main factors that led to economic growth in this country in Indonesia. In addition, MSMEs have also succeeded in increasing the Gross Domestic Product (GDP) with high employment. In this socialization activity, the implementation team also conducted interviews with one of the residents of Laiya Island, namely Ratna Sari. We asked about the activities carried out by Mrs. Ratna Sari. She stated that there were not many jobs that could be occupied by women who worked on Laiya Island, namely as traders, be it traders who were in home industries or just helping their husbands in selling seafood (Interview, 8 April 2023, Laiya Island).

We conveyed to the participants during the socialization phase that in the current era of globalization, the role of social media platforms like Instagram, Twitter, Facebook, TikTok, and e-commerce platforms such as Shopee, Tokopedia, Bukalapak, and Lazada is pivotal for the effective operation of Micro, Small, and Medium Enterprises (MSMEs). Recognizing the significance, it becomes essential for individuals in the MSME sector to acquire sufficient knowledge about the myriad benefits offered by these platforms, enabling them to leverage these tools for their businesses. In a subsequent interview with Dahlia, she highlighted that many residents on Laiya Island are already active on various social media platforms, including Instagram, Twitter, Facebook, YouTube, and TikTok, with some even utilizing the TikTok Shop for their shopping needs. Given this scenario, Dahlia emphasized the importance of empowering women on the island with the knowledge and skills to effectively use social media platforms, fostering their active participation in the digital realm (Interview, 8 April 2023, Laiya Island).

Figure 6 shows the step training of MSMEs go digital and Figure 7 shows the socialization activity of MSMEs go digital in Laiya Island.



Figure 6. Training of MSMEs go digital



Figure 7. Socialization of MSMEs go digital

On the inaugural day, socialization activities unfolded from 10 am to 5 pm, with a break for lunch. The community service team took the opportunity to apprise the attendees of the inherent beauty of Laiya Island and its rich marine resources. The team emphasized that the island's abundant marine products present a unique opportunity for the community to engage in proper processing and utilization. This circumstance serves as a compelling reason for conducting socialization sessions on the imperative of Micro, Small, and Medium Enterprises (MSMEs) embracing digital strategies. By doing so, these MSMEs can effectively introduce and market seafood products from Laiya Island, thereby enhancing their visibility and reach in the digital marketplace.

Although the people of Laiya Island are used to electronic devices and internet access, based on interview results, only a few of them use social media to promote their seafood products outside Laiya Island. Thus, enthusiasts of their products are still very limited. This situation then became an obstacle for MSMEs on this island to progress. On the other hand, the existence of e-commerce and social media as a place for buying and selling can make the target market wider. The residents of Laiya Island currently possess minimal awareness of the crucial role that e-commerce plays in this era of globalization. There is a recognized need for further education and study on this topic to enhance their understanding. Based on the results of an interview with a Laiya Island resident named Amelia, she said that she used the Shopee application to promote her skincare products when she was still living in Makassar. However, after settling in Laiya Island, she stopped these activities due to impossible situations, such as the internet being difficult to obtain and sea

transportation being expensive (Interview, 10 April 2023, Laiya Island). This proves that one of the reasons preventing Laiya Island residents from expanding their target market outside the island is transportation constraints, where just getting to Pangkep mainland takes up to almost two hours by boat. Therefore, it is important that this outreach activity where we provide an overview to participants that one way to end poverty is to participate in women's empowerment activities so that they can support food security in the region where we live and also become a venue for promoting gender equality.

### **Marine Product Utilization Training**

In this training session, participants are instructed in an efficient method of processing seafood, specifically the production of fish balls. Recognized for their high nutritional value, fish balls generate considerable community interest in learning this skill. The process begins by selecting fish varieties without bones and possessing a soft texture. Participants collectively clean and de-thorn the fish before proceeding to puree it. The mashed fish is then combined with garlic, salt, starch, ground pepper, water, and flavoring. The mixture is shaped according to individual preferences, offering a practical and engaging way to enhance culinary skills and promote the nutritional benefits of seafood.

As part of the training process, we emphasize the significance of women's active participation in the economic empowerment journey. Empowering women aligns with Sustainable Development Goal 5, focusing on gender equality. This empowerment contributes to building women's competitiveness, particularly within market dynamics. We elaborate on how empowering women serves to diminish barriers to resources and addresses issues of unfair competition, both at the individual and policy levels. By fostering women's economic empowerment, we actively contribute to the overarching goal of achieving gender equality outlined in the SDGs program. We further explain that empowering women can reduce barriers to resources and unfair competition at both the individual and policy levels. To be more specific, empowerment includes the ability of women to participate equally in existing markets; their access to and control over productive resources; access to decent work; control over their own time, life, and body; and increased voice, agency, and meaningful participation in economic decision-making at all levels from households to international institutions (AsiaDevelopment, 2021).

The training that we are holding can support the process of women's economic empowerment because we provide an explanation of the importance of entrepreneurship even though maybe it is only limited to the home industry level. This outreach and training activity also supports the SDGs because it can open up new and decent jobs for all by involving productive young and adult women. According to the report of the International Finance Corporation on the Micro, Small, and Medium Enterprises finance gap in 2017, there are around 6.6 million formal Small and Medium Enterprises owned by women in developing countries (AIIB, 2023). This condition is certainly a motivation for women to participate more actively in supporting and promoting gender equality by continuing to train themselves in utilizing natural products around them.

### **Training Results**

Our observations indicate that the need for comprehensive education extends beyond economic and technological aspects to include digital literacy on Laiya Island. In contrast to urban dwellers, the residents here exhibit minimal knowledge, lacking fundamental understanding in general knowledge and basic English. In this era of globalization, it becomes evident that individuals should ideally possess such foundational skills as prerequisites for active participation. Whereas the success of an empowerment process is due to the skills or knowledge of members or empowerment groups (Majdawati & Brahmana, 2022). Despite the challenges highlighted, field data obtained during the socialization activities reveal that teenagers actively participating in the program exhibit adeptness in using social media to connect with their peers. In an interview, Aulia noted that children on Laiya Island are well-versed in current popular culture discussions, showcasing their proficiency in navigating social media and basic technological devices. However, this underlines the importance of providing education on utilizing the internet for accessing diverse and beneficial information, ensuring they are well-prepared for future endeavors.

The proficiency of Laiya Island residents, especially teenagers, in using technological devices and social media presents an advantageous opportunity for learning and knowledge absorption. The internet, encompassing platforms like Instagram, Twitter, Facebook, Youtube, and TikTok, offers myriad educational possibilities when information is appropriately curated. These platforms can be valuable tools for expanding knowledge across diverse fields through informative accounts. Encouraging self-motivation to learn English enhances vocabulary and facilitates communication in this international language. Harnessing technology, social media, and internet access enables Laiya Island residents to not only advance their digital marketing skills, a crucial factor for success in the MSME sector, but also leverage e-commerce for expanding their business's target market.

The participants received benefits after participating in socialization and training activities, such as 1) an increased understanding of the importance of empowering women, especially in utilizing natural products; 2) participants have skills in making fish balls; 3) participants know the correct way of packing marine processed products. The Figure 8 shows the results of socialization and training.

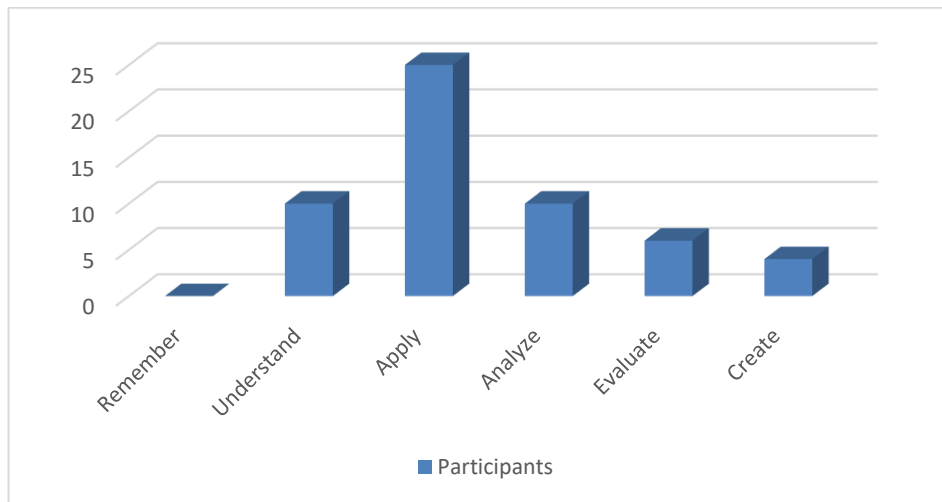


Figure 8. The understanding level of participants

The Figure 8 shows the level of understanding after participating in socialization and training activities. There were 10 people at the understanding level, 25 people at the applying level, 10 people at the analyzing level, six people at the evaluating level, and four people at the creating level. Measuring the level of understanding uses Bloom's taxonomy. According to Benjamin Bloom, there are six levels to measure a person's level of understanding, namely remembering, understanding, applying, analyzing, evaluating, and creating (Drew, 2023). At the remembering level, one can retain and remember information. At this stage, the person can repeat, memorize, and identify the material that has been given. At this level, all participants have been able to exceed that level because of a good level of understanding. Then the understanding level. Someone at this level can clearly understand the material provided. They can then paraphrase, report back, provide clear descriptions, and summarize the material provided. Participants can provide a clear explanation of the material that has been provided.

Next, level applying. At this level, participants are able to use existing knowledge or material in a new context by applying, operating, and using the concepts or material provided. At this level, participants are able to explain to others the importance of women's empowerment programs in supporting the improvement of community or family welfare. The next level is analyzing. At this level, participants can provide clear reasons and categorize the materials that have been given. Participants have an awareness to participate in supporting the UMKM program because it has a good positive influence on its members. The next level is evaluating. At this level, participants are able to make judgments about the material provided. They can criticize and provide recommendations regarding the implementation of socialization and training provided on Laiya Island. The material for making fish balls can also be done well, they can process the seafood and do the packaging. The last level is creating. At this level, participants can use existing or given information to discover, develop, design, and build something new. Participants have been able to create MSMEs by inviting several friends to join groups.

## CONCLUSION

The socialization and training activities conducted on Laiya Island have effectively imparted knowledge and skills to the community, particularly the participants, underscoring the significance of empowering women through enhanced proficiency in utilizing marine products. Engaging village officials, housewives, and entrepreneurs, the participants, predominantly women with varying educational backgrounds, quickly grasped the techniques of crafting and processing fish into meatballs. However, achieving women's welfare necessitates collective participation, emphasizing the need for collaboration from all stakeholders, including the government.

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## REFERENCES

- Adolfsson, J. S., & Madsen, O. J. (2020). "Nowadays there is gender": "Doing" global gender equality in rural Malawi. *Theory and Psychology*, 30(1), 56–76. <https://doi.org/10.1177/0959354319879507>
- AsiaDevelopment. (2021). *Women's economic empowerment in Asia*. ADB Institute (Vol. December). Tokyo, Japan. <https://doi.org/10.18356/d45edd9d-en>
- AustralianGovernment. (2022). Stronger Partnerships with Women in Southeast Asia. Retrieved 5 April 2023, from <https://www.dfat.gov.au/news/news/stronger-partnerships-women-southeast-asia>

- Bahtiar & Saragih. (2020). Dampak Covid-19 Terhadap Perlambatan Ekonomi Sektor UMKM. *Kajian Singkat Terhadap Isu Aktual Dan Strategis*, 12(6), 19–24. Retrieved from [https://berkas.dpr.go.id/puslit/files/info\\_singkat/Info\\_Singkat-XII-6-II-P3DI-Maret-2020-1982.pdf](https://berkas.dpr.go.id/puslit/files/info_singkat/Info_Singkat-XII-6-II-P3DI-Maret-2020-1982.pdf)
- Bui, T. T., Tran, Q. T., Alang, T., & Le, T. D. (2023). Examining the relationship between digital content marketing perceived value and brand loyalty: Insights from Vietnam. *Cogent Social Sciences*, 9(1). <https://doi.org/10.1080/23311886.2023.2225835>
- Colineaux, H., Soulier, A., Lepage, B., & Kelly-Irving, M. (2022). Considering Sex and Gender in Epidemiology: a Challenge Beyond Terminology. From Conceptual Analysis to Methodological Strategies. *Biology of Sex Differences*, 13(1), 1–10. <https://doi.org/10.1186/s13293-022-00430-6>
- Drew, C. (2023). All 6 Levels Of Understanding (On Bloom’s Taxonomy). Retrieved 20 May 2023, from <https://helpfulprofessor.com/levels-of-understanding/>
- Egala, S. B., Amoah, J., Bashiru Jibril, A., Opoku, R., & Bruce, E. (2024). Digital Transformation in an Emerging Economy: Exploring Organizational Drivers. *Cogent Social Sciences*, 10(1). <https://doi.org/10.1080/23311886.2024.2302217>
- Fivush, R., & Grysman, A. (2022). Narrative and Gender as Mutually Constituted Meaning-Making Systems. *Memory, Mind & Media*, 1, 1–14. <https://doi.org/10.1017/mem.2021.4>
- Galiè, A., & Farnworth, C. R. (2019). Power through: A New Concept in The Empowerment discourse. *Global Food Security*, 21(June), 13–17. <https://doi.org/10.1016/j.gfs.2019.07.001>
- Goetz, A. M. (2020). The politics of preserving gender inequality: de-institutionalisation and re-privatisation. *Oxford Development Studies*, 48(1), 2–17. <https://doi.org/10.1080/13600818.2019.1672144>
- Halisçelik, E., & Soytaş, M. A. (2019). Sustainable development from millennium 2015 to Sustainable Development Goals 2030. *Sustainable Development*, 27(4), 545–572. <https://doi.org/10.1002/sd.1921>
- Koeswahyono, I., Maharani, D. P., & Liemanto, A. (2022). Legal breakthrough of the Indonesian job creation law for ease, protection, and empowerment of MSMEs during the COVID-19 pandemic. *Cogent Social Sciences*, 8(1). <https://doi.org/10.1080/23311886.2022.2084895>
- Lorber, J. (2018). The Social Construction of Gender. In D. B. Grusky & J. Hill (Eds.), *Inequality in the 21st Century* (1st ed., pp. 347–351). New York, USA: Routledge. Retrieved from <https://www.taylorfrancis.com/chapters/edit/10.4324/9780429499821-61/social-construction-gender-judith-lorber?context=ubx&refId=a023bab8-d650-401d-bb13-4ebda46f36bc>
- Majdawati, A., & Brahmana, I. B. (2022). The Empowerment of Health Cadres in Assisting Pregnant Women during the Covid-19 Pandemic. *Jurnal Pemberdayaan: Publikasi Hasil Pengabdian Kepada Masyarakat*, 6(2), 37–44.
- Mazda, G. (2021). UMKM Meroket: Wujudkan SDGs 2030. Retrieved 3 April 2023, from <https://tugujatim.id/umkm-meroket-wujudkan-sdgs-2030/?amp>
- Pemerintah Kabupaten Batu Bara. (2022). Dukung Upaya Peningkatan Literasi Digital Pelaku UMKM. Retrieved 15 March 2023, from <https://batubarakab.go.id/post/dukung-upaya-peningkatan-literasi-digital-pelaku-umkm>
- Phillips, R. (2015). How ‘Empowerment’ May Miss Its Mark: Gender Equality Policies and How They are Understood in Women’s NGOs. *International Journal of Voluntary and Nonprofit Organizations*, 26, 1122–1142. Retrieved from <https://link.springer.com/article/10.1007/s11266-015-9586-y>
- Salih, A. A., Alsalhi, L., & Abou-Moghli, A. (2024). Entrepreneurial Orientation and Digital Transformation as Drivers of High Organizational Performance: Evidence from Iraqi Private banks. *Uncertain Supply Chain Management*, 12(1), 9–18. <https://doi.org/10.5267/j.uscm.2023.10.022>
- Stibbe, D., & Prescott, D. (2020). *The SDG partnership guidebook : a practical guide to building high impact multi-stakeholder partnerships for the Sustainable Development Goals*. Retrieved from [https://sdgs.un.org/sites/default/files/2020-10/SDG\\_Partnership\\_Guidebook\\_1.01\\_web.pdf](https://sdgs.un.org/sites/default/files/2020-10/SDG_Partnership_Guidebook_1.01_web.pdf)
- Suyanto, B., Sugihartati, R., Egalita, N., Mas’udah, S., Singgih, D. S., & Sudarso. (2023). Digital Literacy and Survival Mechanism of Micro-Small Enterprises in Practicing Sharing Economy. *Cogent Social Sciences*, 9(2). <https://doi.org/10.1080/23311886.2023.2245691>
- UNWomen. (2022). In focus: Sustainable Development Goal 5. <https://doi.org/10.5860/choice.190794>
- Wasik, Z., & Handriana, T. (2023). Strategy for Sustainability of The Fishery Industry during The COVID-19 Pandemic in Indonesia. *Cogent Social Sciences*, 9(1). <https://doi.org/10.1080/23311886.2023.2218723>
- Wibowo, A., Alawiyah, W., & Azriadi. (2024). The Importance of Personal Data Protection in Indonesia’s Economic Development. *Cogent Social Sciences*, 10(1). <https://doi.org/10.1080/23311886.2024.2306751>
- Woodward, A. E. (2015). Travels, Triangles and Transformations Implications for New Agendas in Gender Equality Policy. *Tvgn*, 18(1), 5–18. Retrieved from <https://www.ingentaconnect.com/contentone/aup/tgen/2015/00000018/00000001/art00002?crawler=true&mime-type=application/pdf>
- Yanto, H., Ismail, N., Kiswanto, K., Rahim, N. M., & Baroroh, N. (2021). The Roles of Peers and Social Media in Building Financial Literacy among The Millennial Generation: A Case of Indonesian Economics and business Students. *Cogent Social Sciences*, 7(1). <https://doi.org/10.1080/23311886.2021.1947579>





# Cultural branding: Development of culture-based tourism village towards sustainable tourism

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ARTICLE INFO	ABSTRACT
<p><b>Article history</b>            Received: 2023-08-01            Revised: 2023-10-10            Accepted: 2023-10-20            Published: 2024-03-04</p> <p><b>Keywords</b>            Cultural branding            Tourism village            Sustainable tourism</p>	<p><i>Kamal Village in Arjasa District, Jember Regency, East Java, has cultural and historical tourism potential through the Duplang Site, Klanceng Site, Ta' Butaan folk art, and Kadisah traditional rituals. This great tourism potential can be developed to promote Kamal Village as a culture-based tourism village. Through a participatory rural appraisal approach involving village-owned businesses, the Tourism Appreciation and Tourism Awareness Group, the Youth Organization of Kamal Village, and collaboration with the Jember Regency Tourism and Culture Office, the community service team assisted in the form of organizational assistance (institutional strengthening), event management training, and strengthening the promotion and branding activities. The results of this community service are expected to strengthen the cultural branding of Kamal Village towards sustainable tourism to realize sustainable and positive economic, social, and environmental impacts for related stakeholders.</i></p>
<p><b>Kata Kunci</b>            Cultural branding            Desa wisata            Pariwisata berkelanjutan</p>	<p><b>Cultural branding: Pengembangan desa wisata berbasis budaya menuju pariwisata berkelanjutan.</b>            Desa Kamal Kecamatan Arjasa, Kabupaten Jember, Jawa Timur, merupakan suatu desa yang mempunyai potensi wisata budaya dan sejarah berupa Situs Duplang, Situs Klanceng, kesenian rakyat Ta' Butaan, dan ritual adat Kadisah. Potensi-potensi wisata yang besar tersebut dapat dikembangkan untuk memajukan Desa Kamal sebagai desa wisata berbasis budaya. Melalui pendekatan penilaian pedesaan partisipatif yang melibatkan badan usaha milik desa, Kelompok Sadar Wisata, Karang Taruna Desa Kamal, dan kerjasama dengan Dinas Pariwisata dan Kebudayaan Kabupaten Jember, tim pengabdian memberikan bantuan berupa bantuan organisasi (penguatan kelembagaan), pelatihan manajemen acara, dan penguatan kegiatan promosi dan branding. Hasil dari pengabdian masyarakat ini diharapkan dapat memperkuat branding budaya Desa Kamal menuju pariwisata berkelanjutan untuk mewujudkan dampak ekonomi, sosial, dan lingkungan yang berkelanjutan dan positif bagi pemangku kepentingan terkait.</p> <p style="text-align: right;">Copyright © 2024, Nugraha, et al            This is an open access article under the CC-BY-SA license</p> <div style="text-align: right;">  </div>

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## INTRODUCTION

Kamal Village is in Arjasa District, Jember Regency, East Java Province. The contours of Kamal Village are hills and valleys, with a population of 5,726 people—the majority of the population work as farmers (BPS Kabupaten Jember, 2022). Kamal Village has an area of 3.59 km<sup>2</sup> or around 8.97% of the total area of Arjasa District, which is also the village with the smallest area in Arjasa District. Kamal Village has extraordinary tourism potential, namely a village with a high historical value which has an intangible cultural heritage that has been stipulated by the Ministry of Education, Culture, Research, and Technology of the Republic of Indonesia with Designation Number 202101503 of 2021 (Kementerian Pendidikan Kebudayaan Riset dan Teknologi, 2022).

The high historical value in Kamal Village can be seen from several prehistoric remains of the megalithic era, including kenong stones, menhirs, and dolmens found at the Duplang Site and Klanceng Site which are scattered at several locations in the village. According to information from the local community, in ancient times, the Duplang Site was a place of ancient human habitation, or it can be said that an ancient settlement was familiar with the concept of divinity, namely animism, and developed into a cultural heritage that we can see today. The Duplang site is located on a hill surrounded by beautiful natural scenery. This site is guarded and cared for by Mr. Abdur Rohim as a caretaker. Apart from the Duplang site, a Klanceng site was also found in the middle of a residential area in Kamal Village. In the area of the Klanceng Site, there are historical relics in the form of megalithic rocks made of andesite rock called kenong stones because of their shape, which resembles the traditional keno musical instrument.

In addition to ancient sites, Kamal Village has an intangible cultural heritage in the form of the "Ta' Butaan" art. Ta'Butaan comes from the Madurese language, which, if translated into Javanese, means "Butho" or giant in Indonesian. This art form is a giant doll that is physically similar to ondel-ondel from Betawi and is believed to be the oldest art from Jember Regency, which authentically originates from Kamal Village, Arjasa District, and then developed into the surrounding area. However, what is very unfortunate is that there needs to be official written documentation regarding the history of the emergence of this art. Like the Klanceng Site and the Duplang Site, the existence of Ta' Butaan has yet to be widely known.

Another tourist attraction of Kamal Village is holding the Kadisah cultural event, a traditional ritual carried out by the village community once a year. The Kadisah ritual is a village cleanliness that aims to ask God to grant safety to all village residents. The Kadisah ritual contains a procession of agricultural products and is interspersed with local arts, including Ta Butaan. This ritual begins with making a sangghar, or large offering container made of bamboo and terraced, in the yard of the village head's house. This sangghar is then filled with various kinds of offerings. The Kadisah and Ta'Butaan rituals are an essential part of the culture of Kamal Village and are one of the cultural tourist attractions in the village. The Kadisah ritual is also an example of how the people of Kamal Village maintain and preserve the traditions and culture of their ancestral heritage.

The diversity of potential and attractions possessed by Kamal Village is the main element in developing culture-based tourism to preserve traditional and historical values and socio-cultural life by offering various unique cultures packaged in the form of festivals or tour packages with several festival agendas or activities. Kadisah appointed Ta'Butaan as the main icon and a vehicle for promoting the intangible cultural heritage of the Jember Regency. The Jember Regency Government, through the Tourism and Culture Office, has made efforts to develop tourist attractions in Kamal Village by assisting the village government and local community so that the management of village potential can collaborate to increase regional tourism and economic development of Kamal Village in particular and Jember Regency in general. However, until now, various activities in Kamal Village that can attract tourist visits, such as the Kadisah ritual, are only running at a modest level without any more targeted and commercial managerial and marketing touches. This causes the income obtained by the village from the tourism sector to be not optimal and does not make a significant contribution to Jember Regency's Original Regional Income because cultural tourism management is still carried out independently and simply by the local community.

Based on the existing conditions and problems related to the Duplang Site tourism object, Klanceng Site, Ta'Butaan art, and Kadisah traditional ritual, it can be concluded that the general public does not widely know the existence of these tourist objects in Jember Regency and its surroundings due to the lack of marketing activities, especially promotion, and branding, especially those based on culture as the main strength. Positioning using the concept of cultural branding is considered very suitable for Kamal Village. Tourism objects in Kamal Village still need to be better developed due to limited resources, both related to human resources and supporting infrastructure.

Organizing the Ta'Butaan arts and the Kadisah festival still requires a special touch and professional event management, considering the principles of sustainable tourism. Sustainable tourism is an industry that tries to make a minimal impact on the environment and local culture while helping generate income, jobs and conserve local ecosystems (Amerta et al., 2018; Streimikiene et al., 2021). Liburd (2010) and Alvin (2021) asserts that sustainable tourism is centered on the viability of tourism and balancing the industry with environmental impacts. Tourism as a business is intended to provide pleasure for tourists, benefit residents, and become a source of local income. Paradoxically, conservation efforts to maintain balance are absolute, which means that the environment, including social and cultural aspects, must be kept intact for present and future generations.

Sustainable tourism views that the needs of tourists and communities in tourist destination areas can be met without neglecting future generations (Aznar & Hoefnagels, 2019). Another problem is related to cooperation and collaboration between interested parties, which needs to be stronger, so the management of existing tourism potential needs to be optimally directed and integrated. The sustainable tourism approach aligns with the SDGs' spirit, which carries the theme of empowerment and sustainability (Linggarwati et al., 2022). Sustainability is not a purely static and theoretical concept but comes from application in the field by collaborating several aspects and has a broad impact on society. Sustainable tourism carries many missions, namely empowering the local economy where tourist villages can help achieve SDGs goals related to alleviating poverty and increasing economic prosperity; environmental preservation by helping to protect the natural environment and local biodiversity (SDGs goals number 1, 8, and 11), especially looking at the potential of Kamal Village and the various megalithic relics and cultural heritage it has. Apart from that, the development of human resources and physical infrastructure is also one of the development programs because these two things are essential to sustainable development (Karlan et al., 2022; Kementerian Desa, 2022)

Based on the existing problems, the community service team proposed several alternative solutions, namely raising the big theme of cultural branding in the context of developing a culture-based tourism village through organizational assistance (institutional strengthening) and event management towards sustainable tourism in Kamal Village, Arjasa District, Jember Regency. Kotler & Keller (2016) emphasized that any efforts carried out by marketing activities, especially promotions and branding, must be carried out to improve performance.

The cultural branding approach is based on the assumption that existing cultural and historical capital can become capital that plays a role in the village economy while also supporting the original livelihood of the local population, most of whom are farmers (Esu & Arrey, 2009; Št' Astná et al., 2020). The attractiveness of an area for the development of cultural tourism does not depend so much on its natural beauty but rather lies on the history and cultural intersections in an area (Št' Astná et al., 2020). There are many aspects related to cultural tourism, including the attractiveness of an area for cultural tourism, appropriate infrastructure, the readiness of an area and its people, and the role of local government, from village sub-district governments to related agencies. Apart from that, from a technical perspective, comprehensive and synergistic information, marketing, and advertising are needed.

The service team found that there had never been any training on event management related to cultural branding in Kamal Village, and there was still minimal promotional activity due to limited interest and tools used. Referring to the limited knowledge and skills of Kamal village managers regarding Kadisah event management training with the Ta'Butaan icon and as an Ancient Village in Jember Regency, the solution offered is to hold training that suits the problems and needs, namely event management training and increasing sustainable promotion and branding. in Kamal Village, Arjasa District, Jember Regency. It is hoped that the results of community service activities with the assisted village scheme in Kamal Village, Arjasa District, Jember Regency, will be valid for the development of local tourism, which can be used as a source of village income to improve the standard of living and economy of the population.

## METHOD

Kamal Village is one of the agriculture-based villages in Arjasa District, Jember Regency. The distance from the city center to Kamal village is around 12 km, and has adequate infrastructure, including asphalt roads across villages and village roads. The leading commodities in Kamal village include rice, corn, and tobacco. Ethnically, the majority of the people in Kamal village are Madurese and active speakers of the Madurese language, including the habits and culture of the Madurese community.

Based on rationality and looking at geographical, sociological conditions and potential mapping, the method used in the Kamal Village, Arjasa District service program is Participatory Rural Appraisal (PRA). This method can be understood as an assessment of a village, which includes aspects of community life depending on needs and the development of operational programs intended to develop the community or village (Muhsin et al., 2018). The results of studies using the participatory rural appraisal approach generally consist of 3 things, namely obtaining comprehensive information regarding the existing conditions of the village and life in the village, obtaining information regarding problems and obstacles it is faced, and obtaining information regarding the potential of villages that can be developed for the prosperity and welfare of village communities.

Through this method, the village community and the PRA team, now the facilitator, created a framework for producing a comprehensive village map (Muhsin et al., 2018). This method allows members of the village apparatus as well as Village-Owned Enterprises (BUMDES) institutions, Kelompok Sadar Wisata (Pokdarwis), and representatives of villagers in Kamal Village to increase their knowledge and skills with the implementing team as external facilitators, share information, make plans and real action. All community group members are expected to be actively involved in this activity. With community empowerment through outreach and assistance in the management of BUMDES in the marketing activities of Culture-based Tourism Villages in Kamal Village, it is hoped that this will help improve the welfare of the village community.

Based on the problems previously described, the implementation team offers solutions to partners in Kamal Village, Arjasa District, and Jember Regency in the form of outreach, increased knowledge in the form of counseling, increased skills with training on empowerment and restructuring of BUMDES, community awareness assistance, event management training, as well as optimizing social media as a means of tourism marketing delivered in various forms of implementation.

The first activity is the socialization of the program. At the beginning of the activity, the implementation team will survey the partner's location to discuss again and see the field conditions directly. The implementing team and partners will also coordinate regarding the community service program, which will be implemented soon. Furthermore, training and mentoring activities are carried out through brainstorming and discussion by providing material about the organization and optimizing organizational structure, given that collaboration is an effective solution to developing a community (Andini, 2013; Susyanti & Latianingsih, 2013). Other core activities are assisting in preparing standard operating procedures to strengthen BUMDES institutional governance in Kamal village. Event management training related to organizing local cultural events to be better known and selling cultural tourism products in local, national, and international markets with sustainable tourism, photography training and management of social media for commercial purposes, particularly related to cultural branding.

Essential and fundamental activities carried out are education regarding the concept of Community Based Tourism and awareness of the surrounding community about the aesthetics of tourist attractions by providing counseling about the role and benefits of Kamal Village's tourism potential in making an economic contribution to village development. Because actual tourism activity is not just satisfying travelers, but also prospering society and within the framework guarding culture and the environment (Mayuzumi, 2022; Ngoc et al., 2023).

In addition to training and mentoring activities, it is necessary to conduct evaluation activities through joint discussions between the proposing team and partners. All activities that have been carried out are evaluated, starting from program socialization to mentoring. In addition, an evaluation will be carried out on creating social media pages and providing the equipment needed to support tourism activities in Kamal village. At the end of the activity, an agreement will be made between the proposing team and partners regarding plans for further activities, primarily related to the continuity of the equipment provided and social media pages to improve the quality and quantity of tourism products. At certain times the proposing team can come to the partner's place to find out about the development of tourism activities and empowerment activities that have been carried out.

## RESULTS AND DISCUSSION

The assisted village service program in Kamal Village, Arjasa Jember District, has been implemented well and smoothly by the activity plans and targets that have been determined. The following is a series of activities carried out for community service in Kamal Village, Arjasa District, Jember Regency.

### Preliminary Survey and Observation

This service activity begins with a survey and preliminary observations—an initial survey at the partner location by meeting directly with the partner, Kamal Village Secretary (Figure 1). Partners received the service team well and responded positively to the program plans related to efforts to develop culture-based tourism villages, especially those that highlight the Duplang Site and the Klanceng Site. In this survey stage, it was mutually agreed regarding the roles, along with the rights and obligations of each party in the assisted village service program.



Figure 1. Initial survey with Kamal village officials

### Focus Group Discussion

Focus Group Discussion (FGD) is a medium for collaboration by coordinating between institutions, especially partners. FGD activities were carried out at the Duplang Site in Kamal Village. The service team consisting of lecturers and students visited Kamal Village to brainstorm on the FGD scheme with representatives of Pokdarwis and BUMDES as the leading managers of the Duplang and Klanceng Sites and Kamal village officials. The FGD was also attended by the Jember Regency Tourism and Culture Office, which, in this case, was represented by the Secretary of Jember Regency Tourism and Culture Office and the Head of the Creative Economy Division (Figure 2).



Through the FGD, the parties agreed to jointly develop the Duplang and Klanceng sites as unique history and culture-based tourist destinations in the Jember Regency. The service team will help provide equipment to document the beauty of the Duplang Site, Klanceng Site, and the surrounding environment. This is important as a first step in creating commercial documentation as promotional material, which will be distributed via social media and the official website owned by Kamal Village and the Jember Regency Tourism and Culture Office. The service team will also assist in the procurement/addition of direction signs and information boards. The focus of promotional and branding activities is the creation of cultural branding, namely, how to highlight the strengths of local culture to position tourism products that differentiate them from other tourism products.



Figure 2. FGD with partners and stakeholders

### Revitalize Social Media Accounts

The next activity is revitalizing the Instagram social media account. The Duplang site has an official Instagram social media account created in February 2022, namely [@situsduplang\\_official](#). However, this account is no longer active in promoting existing tourism potential. The last post is July 2022, as shown in Figure 3. The account management administration is also handled by someone other than Pokdarwis/BUMDES. The photos and information provided are still limited and poorly designed, so it gives the impression that the site management still needs to be more professional. This is one of the obstacles due to limited human resources, especially in designing social media marketing communications. Promotion via social media can be an effective and affordable medium to promote existing tourism potential so that tourists better know it at the local and national levels. As a follow-up to the initial FGD, Kamal Village has an Instagram account named [@desawisatakamal](#) and a blog with the Kamal Megalithic Tourism Village, as seen in Figure 4. This social media account was created and updated with an attractive appearance to increase information about the Kamal tourist village and its rich culture and historical heritage.

### Basic Photography Training

Documentation skills are needed to support the event management program, in this case, basic photography training. Basic photography training to support the event management program launched in service activities. Basic photography training involves the Pokdarwis and Karang Taruna of Kamal Village with the aim that tourism managers have documentation facilities and can document events professionally and independently use them to enrich existing social media content. Apart from that, in photography training, a set of DSLR cameras was also given to the Pokdarwis to maintain business continuity and as a training medium for managers (Figure 5).



Figure 3. Duplang Site's old Instagram account



Figure 4. New Instagram account and blog for the megalithic tourist village of Kamal Village



Figure 5. Camera delivery and basic photography training

### Kadisah Event Assistance

The next activity is assistance related to event management. Even though it was stopped for two years due to COVID-19, in 2022, the community intends to hold a Kadisah event. This activity was carried out considering that the implementation of the Ta' Butaan art and the Kadisah traditional ritual is still consistently held annually and has become a mainstay cultural event that is eagerly awaited by the local village community and several surrounding communities from other villages and sub-districts. However, this event has yet to be widely known, and the organization and implementation of the event still need to be more optimal, so a more serious and professional form of management is needed through good event management based on the concept of sustainable tourism. Event management is an activity organized to commemorate important things throughout human life, either individually or in groups related to custom, culture, tradition, and religion, organized for a specific purpose, and involving the community environment, held at a particular time. The Kadisah event has the potential growth to be "event tourism" in which tourists constitute a potential market for planned events (Pivac, 2011). The Kadisah event was held on October 16, 2022, involving all elements of Kamal Village residents. The role of the servant at this event is as a companion to direct how to prepare a higher quality event in the future. Considering that the Kadisah event was on hiatus due to COVID-19, when it was held in 2022, public interest was very high, and every neighborhood (RT) wanted to display a parade as a form of enthusiasm and gratitude for the Kadisah event (Figure 6). While implementing the 2022 Kadisah event, many evaluation improvements could still be used



as information for planning and managing the next event. A complete view of the Kadisah event can be seen on the following YouTube link: <https://www.youtube.com/watch?v=qCJ7zUxeGIs>.



Figure 6. Kadisah Event

### Activity Evaluation

As a vehicle for evaluation in community service activities carried out. The service team and partners from Kamal, Pokdarwis village officials, and related agencies also reinforced the form of assistance regarding the importance of managing cultural and history-based tourist villages as special interest tourism and educational tourism. Apart from that, it is worth noting in this evaluation that professional tourism management requires Standard Operational Procedures (SOP), which until now have yet to be owned by tourism managers. Therefore, written documentation is needed regarding service and maintenance SOPs so that existing human resources can manage and maintain tourist objects and supporting infrastructure well and provide excellent tourism services to visiting visitors. Discussions were held at the home of the Duplang Site Maintenance Officer, and sample applications were carried out at the Klanceng site (Figure 7).



Figure 7. Supporting the importance of culture-based tourism villages to support cultural branding.

The community service carried out in Kamal village has impacted the management of the tourist village. However, there is still a record of improvement for the program's continuation in the future. The main note is the mindset of village managers and officials, where the culture-based particular interest tourism Pokdarwis differs from tourist destinations because the Kamal destination has high historical and cultural value. The positive impact of service activities is that managers are also more sensitive and capable of promoting and documenting existing activities or events. From the village apparatus side, the service team pushed for standard operational procedures to be immediately developed that were discussed and made into village regulations. They remembered that one of the critical concepts in managing tourist villages using the SDGs approach is the participation of village officials and long-term commitment.

As a village with a megalithic heritage and unique culture, Kamal village is one of the potential villages in Jember Regency. A village that has a high cultural and historical capital but is starting to be eroded by time and is largely forgotten, especially by the current generation. Initiating and building a culture-based tourism village is joint work and collaboration involving various sectors (Nurlena et al., 2021). Obstacles often come, sometimes not from outside the village but from the community (Bennett & Dearden, 2014). A culture-based tourist village is a strategic step taken to develop the area while also having a conservation perspective so that the sustainable aspect becomes a spirit that means tourism is not just about having fun and tending to hedonistic behavior (Chen et al., 2020), but also leaves an impression and is educational (Agustine & Dwinugraha, 2021; Nugraha et al., 2021) so that tourists not only enjoy but also succeed in learning something and understanding something from the tour they undertake (Suryaningsih et al., 2020).

## CONCLUSION

Based on the results of community service activities in the assisted villages in Kamal Village, Arjasa Jember District, it can be concluded that Kamal Village, with its historical heritage of the Duplang Site and Kancleng Site as well as the local arts of Ta' Butaan and Kadisah, has excellent potential to become one of the culture-based tourist attractions of Jember Regency. Strengthening cultural branding, carried out by the community service team from the University of Jember in the form of institutional assistance, event management training, promotion, and branding by providing physical assistance in the form of several supporting infrastructures, has had an impact. It can make the tourist attraction in Kamal Village increasingly well known, not only by local communities but also on a national scale.

Community service activities carried out in Kamal village can bring about changes, including being more sensitive to the needs of tourists and understanding the differences related to culture-based particular interest tourism so that the treatment of tourists will also be different. Internally, the site custodian not only plays the custodian role but can also act as a tour guide, considering the high historical value and strong cultural heritage.

Another hope is that the Duplang Site and Klanceng Site can maintain their authenticity and historical value as part of human culture and civilization and that the Ta' Butaan arts and Kadisah traditional rituals can continue to develop with more professional event management. It is also hoped that these tourist attractions can be sustainable by the central concept of sustainable tourism, namely, how to adapt to current developments and have positive, sustainable economic, social, and environmental impacts, especially for local communities, the government, and other relevant stakeholders.

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## REFERENCES

- Agustine, A. D., & Dwinugraha, A. P. (2021). Strategi pengembangan Desa Wisata Osing dalam upaya pemulihan ekonomi pada masa pandemi Covid-19. *Publisia: Jurnal Ilmu Administrasi Publik*, 6(2), 156–164. <https://doi.org/10.26905/pjiap.v6i2.6467>
- Alvin, L. (2021). Sustainable tourism practices: Balancing economic growth and environmental conservation. *International Journal of Business Management and Visuals*, ISSN: 3006-2705, 4(2), 1–6.
- Amerta, I. M. S., Sara, I. M., & Bagiada, K. (2018). Sustainable tourism development. *International Research Journal of Management, IT and Social Sciences*, 5(2), 248–254.
- Andini, N. (2013). Pengorganisasian komunitas dalam pengembangan agrowisata di desa wisata studi kasus: Desa Wisata Kembangarum, Kabupaten Sleman. *Journal of Regional and City Planning*, 24(3), 173–188.
- Aznar, M., & Hoefnagels, H. (2019). Empowering small rural communities through heritage tourism. *Bridging Tourism Theory and Practice*, 11, 49–60. <https://doi.org/10.1108/S2042-144320190000011005>
- Bennett, N. J., & Dearden, P. (2014). Why local people do not support conservation: Community perceptions of marine protected area livelihood impacts, governance and management in Thailand. *Marine Policy*, 44, 107–116. <https://doi.org/10.1016/j.marpol.2013.08.017>
- BPS Kabupaten Jember. (2022). *Statistik Daerah Kabupaten Jember*.
- Chen, X., Cheng, Z. feng, & Kim, G. B. (2020). Make it memorable: Tourism experience, fun, recommendation and revisit intentions of Chinese outbound tourists. *Sustainability (Switzerland)*, 12(5), 1–24. <https://doi.org/10.3390/su12051904>
- Esu, B. B., & Arrey, V. M.-E. (2009). Branding cultural festival as a destination attraction: A case study of Calabar Carnival Festival. *International Business Research*, 2(3), 182–192. <https://doi.org/10.5539/ibr.v2n3p182>
- Karlan, L. O., Djafar, N., & Ohi, R. (2022). Pemberdayaan seni budaya bagi masyarakat untuk menuju pembangunan SDGs yang berkualitas. *Jurnal Sibermas (Sinergi Pemberdayaan Masyarakat)*, 11(4), 868–891. <https://doi.org/http://dx.doi.org/10.37905/sibermas.v11i4.12349>
- Direktorat Pengembangan Sosial Budaya dan Lingkungan Desa dan Perdesaan & Direktorat Jenderal Pembangunan Desa dan Perdesaan. (2022). *Buku panduan desa peduli penghidupan berkelanjutan*. Kementerian Desa, Pembangunan Daerah Tertinggal dan Transmigrasi Republik Indonesia.
- Kementerian Pendidikan, Kebudayaan, Riset, dan Teknologi (2022, February 2). *Ta'Butaan Jember*. Warisan Budaya Takbenda Indonesia. Retrieved June 1, 2023, from <https://warisanbudaya.kemdikbud.go.id/?newdetail&detailTetap=2884>
- Kotler, P., & Keller, K. L. (2016). Marketing management. In *Pearson Education Limited* (15e ed., Vol. 15E, Issue 4). Pearson. <https://doi.org/10.1080/08911760903022556>
- Liburd, J. (2010). Introduction to sustainable tourism development. *Understanding the Sustainable Development of*

*Tourism*, 1–18.

- Linggarwati, T., Haryanto, A., & Darmawan, R. M. A. B. (2022). Implementasi SDGs di Desa Pandak, Kecamatan Baturraden, Kabupaten Banyumas. *Prosiding Seminar Nasional LPPM Unsoed*, 11(1).
- Mayuzumi, Y. (2022). Is meeting the needs of tourists through ethnic tourism sustainable? Focus on Bali, Indonesia. *Asia-Pacific Journal of Regional Science*, 6(1), 423–451. <https://doi.org/10.1007/s41685-021-00198-4>
- Muhsin, A., Nafisah, L., & Siswanti, Y. (2018). *Participatory Rural Appraisal (PRA) for corporate social responsibility (CSR)* (1st ed.). Deepublish.
- Ngoc, N. M., Tien, N. H., Hieu, V. M., & Trang, T. T. T. (2023). Sustainable integration in Vietnam's tourism industry. *World review of entrepreneurship management and sustainable development*, 3, 1-16.
- Nugraha, K. W. S., Suryaningsih, I. B., & Cahyanti, I. D. (2021). Destination quality, experience involvement And memorable tourism experience: is it relevant for rural tourism? *Management & Marketing. Challenges for the Knowledge Society*, 16(1), 69–85. <https://doi.org/10.2478/mmcks-2021-0005>
- Nurlena, N., Taufiq, R., & Musadad, M. (2021). The socio-cultural impacts of rural tourism development: A case study of Tanjung Tourist Village in Sleman Regency. *Jurnal Kawistara*, 11(1), 62. <https://doi.org/10.22146/kawistara.62263>
- Pivac, T. (2011). Event management and consumer satisfaction in tourism industry. *African Journal of Business Management*, 5(34), 13240–13248. <https://doi.org/10.5897/ajbm11.1641>
- Št'astná, M., Vaishar, A., Brychta, J., Tuzová, K., Zloch, J., & Stodolová, V. (2020). Cultural tourism as a driver of rural development. Case study: Southern Moravia. *Sustainability*, 12(21), 1–16. <https://doi.org/10.3390/su12219064>
- Streimikiene, D., Svagzdiene, B., Jasinskas, E., & Simanavicius, A. (2021). Sustainable tourism development and competitiveness: The systematic literature review. *Sustainable Development*, 29(1), 259–271. <https://doi.org/10.1002/sd.2133>
- Suryaningsih, I. B., Sularso, A., & Handriana, T. (2020). *Manajemen pemasaran pariwisata dan indikator pengukuran* (I. Fadah & K. W. S. Nugraha (eds.)). Samudra Biru.
- Susyanti, D. W., & Latianingsih, N. (2013). Potensi desa melalui pariwisata pedesaan. *Ekonomi Dan Bisnis*, 12(1), 33–36.



# Outreach and education of children on the 2023 hybrid solar eclipse in Southwest Papua

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ARTICLE INFO	ABSTRACT
<p><b>Article history</b>            Received: 2024-01-02            Revised: 2024-02-05            Accepted: 2024-03-26            Published: 2024-03-27</p> <p><b>Keywords</b>            Astronomy            Observation            Outreach            Solar Eclipse            Southwest Papua</p>	<p>On April 20, 2023, the Southwest Papua region was the areas crossed by a hybrid solar eclipse. This outreach aims to enhance the community's understanding and awareness regarding the safety of solar eclipse observation by conducting observations at several locations in Southwest Papua. The solar eclipse education and observation Program was successfully implemented in 6 Regencies/Cities in Southwest Papua. This activity was carried out using mini-lectures, pinhole training, and joint eclipse observations. In general, this program can increase public understanding and awareness regarding the safety of observing solar eclipses, with the training participants' response score being 79.92% in the good category. Apart from that, this program has succeeded in touching and opening people's insight into this fascinating natural phenomenon through widespread publication in the mass media, both regional and national.</p>
<p><b>Kata Kunci</b>            Astronomi            Gerhana matahari            Papua Barat Daya            Pengabdian Masyarakat            Pengamatan</p>	<p><b>Sosialisasi dan edukasi anak mengenai gerhana matahari hybrid 2023 di Papua Barat Daya.</b> Pada tanggal 20 April 2023, wilayah Barat Daya Papua menjadi wilayah yang dilintasi gerhana matahari hibrida. Sosialisasi ini bertujuan untuk meningkatkan pemahaman dan kesadaran masyarakat mengenai keamanan pengamatan gerhana matahari dengan melakukan observasi di beberapa lokasi di Papua Barat Daya. Program Edukasi dan Observasi Solar Gerhana berhasil dilaksanakan di 6 Kabupaten/Kota di Papua Barat Daya. Kegiatan ini dilakukan dengan menggunakan kuliah singkat, pelatihan lubang jarum, dan observasi gerhana bersama. Secara umum program ini dapat meningkatkan pemahaman dan kesadaran masyarakat mengenai keselamatan pengamatan gerhana matahari, dengan skor respon peserta pelatihan sebesar 79,92% dengan kategori baik. Selain itu, program ini berhasil menyentuh dan membuka wawasan masyarakat terhadap fenomena alam yang menakjubkan tersebut melalui publikasi luas di media massa, baik daerah maupun nasional..</p> <p style="text-align: right;">Copyright © 2024, Raharja, et al            This is an open access article under the CC-BY-SA license</p> <div style="text-align: right;">  </div>

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## INTRODUCTION

One of the approaches to implementing the SDGs related to education can be identified in Sustainable Development Goal number 4. This goal directs efforts toward ensuring universal access to inclusive quality education and supports lifelong learning opportunities for all individuals (Safitri et al., 2022). In Indonesia, implementing the Sustainable Development Goals (SDGs) Program is a part of the effort to enhance and promote the well-being of society. One critical aspect is improving the quality of the education sector (Humaida et al., 2020).

Currently, the depiction of education in Indonesia indicates that the quality of education in this country still needs to catch up to the targets set in the SDGs. Education in urban areas performs better than in rural, remote, and economically disadvantaged regions (3T), including Papua (Nurfatimah et al., 2022). The challenges of education in Papua are not only limited to the lack of infrastructure in the region but also encompass issues related to the quality of education. Quality aspects, including teaching standards and student capabilities, have yet to reach the expected levels (Pribadi, 2017).

Being the largest island in Indonesia, Papua currently encompasses six provinces, one of which is Southwest Papua. This province is the result of the division of the West Papua province and officially became the 38th province in Indonesia in 2022. With a total area of 39,167 km<sup>2</sup>, the section is divided into five districts and one city (Kemendagri, 2023). However, the region still faces challenges in terms of remote accessibility and limited educational infrastructure, hindering the provision of equitable education for all children in Southwest Papua.

On April 20, 2023, the Papua region was the areas crossed by a hybrid solar eclipse. This type of eclipse consists of two types: partial solar eclipse and total solar eclipse (BMKG, 2023). In Southwest Papua, a hybrid solar eclipse will not occur, but there will be a partial solar eclipse with approximately 90.58% coverage of the Sun and a Magnitude of 0.9228. The eclipse duration will be 3 hours, 7 minutes, and 35 seconds, starting at 12:10:59 and reaching its peak at 13:47:11 before ending at 15:18:34 (Time And Date, 2023). This solar eclipse phenomenon presents a significant opportunity to enhance the scientific interest of children in Southwest Papua, thus contributing to improving the quality of education in this region.

Knowledge about natural phenomena, such as solar eclipses, still needs to be improved among the communities in Southwest Papua. Therefore, an educational program on eclipse observation is necessary to help enhance understanding of science and cultivate interest in the field, particularly among children and adolescents. Students' grasp of the solar eclipse is predominantly shaped by scientific explanations and Islamic religious perspectives, which have been part of their learning since elementary school (Haristiani, 2017). Solar eclipse education can also contribute to improving the scientific literacy of the community, teaching practical scientific concepts, and involving the public in observing natural phenomena, thus aiding in the development of critical and analytical thinking skills (Buxner et al., 2021) (Haristiani et al., 2018)(Kurniawan et al., 2020) (Amartiwi, 2023). Hands-on experiences with natural phenomena could greatly enhance the interest of young learners in pursuing fields related to science (Fatima, 2016).

Furthermore, providing guidance on the safety of solar eclipse observation is crucial. Directly looking at the Sun during an eclipse without proper eye protection can lead to permanent eye damage (Mujab, 2014). Education about the correct eye protection equipment and safe methods for observing an eclipse is vital to prevent injuries and health issues (Mardiani & Boediman, 2021). Another potential avenue for development is utilizing solar eclipses as a tourist attraction for regions within the eclipse path (Haristiani et al., 2016). Solar eclipse educational programs can offer local communities the opportunity to promote their culture and the natural tourism potential of the area.

Based on the background of the issue, the researcher is interested in conducting outreach activities through the education and observation of the 2023 hybrid solar eclipse in Southwest Papua. This outreach aims to enhance the community's understanding and awareness regarding the safety of solar eclipse observation by conducting observations at several locations in Southwest Papua. The expectation is that this engagement will stimulate the community's interest to delve deeper into the universe and expand their knowledge about the world of astronomy.

Previous research aims to increase awareness of the 2016 solar eclipse among school students in Sorong. This activity took place in several schools in Sorong Regency and involved various activities such as mini lectures, pinhole training, and observing using sun glasses. The results of the research show the enthusiasm of students and teachers, at least one school held solar eclipse observations on the day of the eclipse (Raharja & Pramudya, 2016). Another study aims to correct misunderstanding by educating the public about how to safely enjoy partial and total solar eclipses. The research was carried out by educating about the solar eclipse at six Palu high schools, while another observatory at Ma Chung University, Malang, provided a filtered telescope for viewing (Rachmadian et al., 2016). Based on two previous studies, this research focuses on education, pinhole training, and collaborative observation with residents at various points throughout districts and cities in Southwest Papua. Different from previous research, this research has a wider scope. This is done when an actual eclipse occurs, so that residents can make direct observations immediately after being given pinhole education and training.

## METHOD

In general, the design of the Education and Observation of the 2023 Hybrid Solar Eclipse in Southwest Papua is as follows is shown in Figure 1.



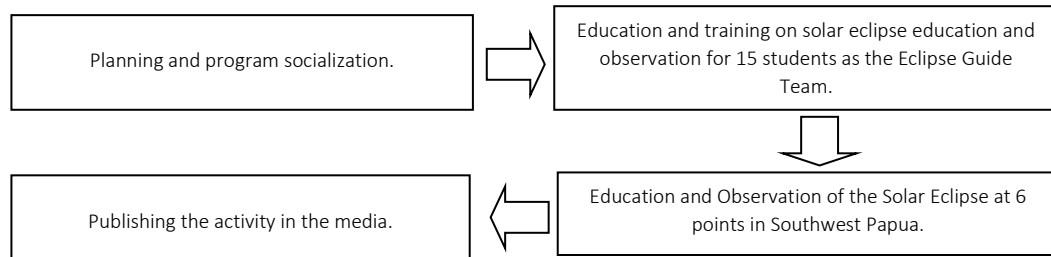


Figure 1. Design of the Education and Observation Process of the 2023 Hybrid Solar Eclipse.

The respondents of this program are children from Southwest Papua covering Sorong Regency, Sorong City, Tambraw Regency, South Sorong Regency, Maybrat Regency and Raja Ampat Regency. The audience comes from elementary school age children. Before conducting the education and observation activities, an eclipse guide team of 15 UNIMUDA Sorong students will be formed and provided with training, including: a) eclipse education, b) pinhole device creation, and 3) eclipse observation. Subsequently, these 15 students will be distributed to the six designated areas of observation as shown in Figure 2 below:

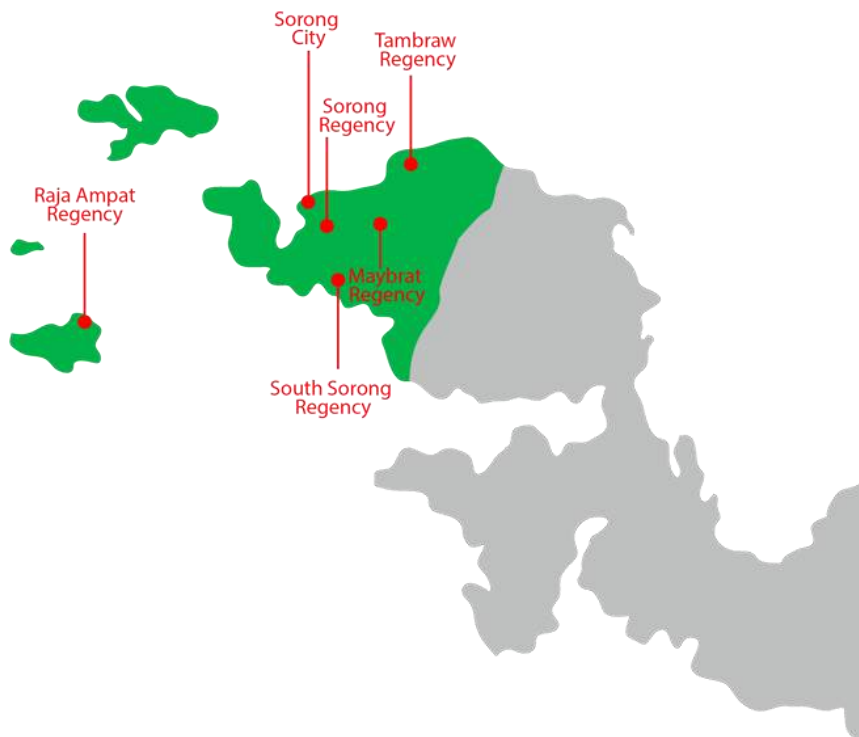


Figure 2. Six locations for observing the eclipse in Southwest Papua

From these observed areas, the team will conduct outreach to the residents and children of Southwest Papua from various backgrounds. This outreach will have several approaches, including mini-lectures, pinhole workshops, and field observations. These approaches ensure that the community gains practical experience learning astronomy, particularly about solar eclipses.

#### Mini Lecture

The Mini Lecture session will provide participants with essential knowledge about solar eclipses, including their causes, types, and the significance of the upcoming hybrid solar eclipse. This segment will serve as a foundational understanding for the subsequent activities.

#### Pinhole Workshop

In the Pinhole Workshop, participants will have the opportunity to create pinhole viewing devices, which are simple but effective tools for safely observing the solar eclipse (Maithong & Pancharoen, 2020). The eclipse workshop served as

an opportunity to enhance education in astronomy (Sebben, 2019). Experts will guide participants through the process, explaining how the pinhole works and how to use it for observation correctly.

### Field Observation

During the Field Observation, participants will gather at selected observation points across districts and cities in Southwest Papua. Equipped with the pinhole devices they created, they will directly observe the solar eclipse. Experts will be present to provide guidance, ensuring safe and accurate observations. This hands-on experience will allow participants to witness the unique phenomenon firsthand and apply the knowledge gained from the Mini Lecture.

The data collected in this program includes documentation of activities, photos of the eclipse using a pinhole, and participant training responsiveness questionnaires. The indicators and statements provided in the questionnaire are indicated in Table 1.

Table 1. Participant Training Responsiveness Questionnaire

Indicators	Statements
Understanding of Solar Eclipse	1. My understanding of the solar eclipse phenomenon has increased after attending this training.
	2. I feel more knowledgeable about the types of solar eclipses after attending this training.
	3. This training helped me understand the factors that influence the occurrence of a solar eclipse.
	4. The content presented in this training provided clear explanations about the process of a solar eclipse.
	5. After attending this training, I am more confident in explaining the concept of a solar eclipse to others.
Awareness of Safety in Solar Eclipse Observation	6. This training provided important information on safely observing a solar eclipse.
	7. After attending this training, I feel more cautious about the health risks of observing a solar eclipse.
	8. The material presented in this training helped me understand the importance of eye protection when observing a solar eclipse.
	9. After attending this training, I feel more prepared and know how to observe a solar eclipse safely.
Personal Benefits of the Training	10. This training provided adequate explanations on how to avoid health risks while observing a solar eclipse.
	11. This training has increased my interest in further understanding astronomy.
	12. I am motivated to seek more information about natural phenomena, including solar eclipses.
	13. After attending this training, I have gained new helpful knowledge in everyday life.
Training Quality	14. This training makes me feel closer to astronomy and science.
	15. The instructor in this training provided explanations in an easily understandable language.
	16. The duration of this training was sufficient to cover all the presented materials.
	17. This training provided ample opportunities for interaction and asking the instructor questions.
	18. I am satisfied with the content provided in this training.
	19. I recommend this training to friends or family interested in solar eclipses.
	20. Overall, I am satisfied with my experience attending this solar eclipse education and observation training.

Scores for each questionnaire are obtained using the Likert scale formula as follows:

$$P = \frac{S}{N} \times 100 \quad (1)$$

where,

- $P$  = Percentage
- $S$  = Total obtained score
- $N$  = Total maximum possible score

The scores is then converted into interval categories as shown in Table 2.

Table 2. Likert Scale Index

Percentage (%)	Definitions
80 – 100	Excellent
60 – 79	Good
40 – 59	Uncertain
20 – 39	Fair
0 – 19	Poor

## RESULTS AND DISCUSSION

### Planning and program socialization

This stage will be carried out in March 2023 by setting program goals and objectives. This involves identifying the program's primary purposes, such as increasing understanding of solar eclipses, and determining the intended audience, such as children or the general public. Furthermore, mini-lecture and pinhole training materials will also be developed and

delivered to the community (Figure 3). This stage also determines the schedule and location of observations, equipment, technology required, security measures, and permits. Apart from planning, the team also carried out program outreach, which involved creating effective promotional materials, making announcements on social media as in Figure 3, and sending invitations to potential participants.



Figure 3. Announcement poster on social media

### Eclipse Guide Team Observation Training

The eclipse guide team observation training was held on April 11, 2023, at the Malak Building, UNIMUDA Sorong Campus (Figure 4). It was attended by 15 students from the Science Education Study Program, PGSD, and PAI. This training aims to equip participants with skills as competent guides in disseminating information and awareness about solar eclipses to the public. The activity contained material about the 2023 Hybrid Solar Eclipse, followed by training in making pinholes as a simple eclipse observation tool which are illustrated in Figure 4. Afterward, participants received material on observing an eclipse properly and correctly. At the end of the session, the participants were given sunglasses and a grant from the Center for Astronomical Studies (PASTRON) of Ahmad Dahlan University, which will be used at the location during the solar eclipse.



Figure 4. Eclipse Guide Team Observation Training

### Education and Observation of the Solar Eclipse at 6 points in Southwest Papua

This activity was held simultaneously on April 20, 2023, involving the community in 6 districts and cities in Southwest Papua, as in Figure 5.



Figure 5. Implementation of the program at several points in Southwest Papua

The students in each observed areas are guided by students who have been given eclipse guide training. The team takes three approaches: mini workshop, pinhole training, and field observations. The results of activities in this are summarized in Table 3.

Table 3. Program Implementation Results

No.	Location	Pinhole Education and Training	Number of participants	Results Participant Responses (%)	Solar Eclipse Observation
1.	Mariat Pantai, Aimas, Kabupaten Sorong	implemented	20	78.50	implemented
2.	Rufei, Sorong Barat, Kota Sorong	implemented	12	79.17	implemented
3.	Mega, Moraid, Kabupaten Tambrauw	implemented	13	78.85	implemented
4.	Arne, Ayamaru Utara, Kabupaten Maybrat	implemented	14	80.36	implemented
5.	Sira, Saifi, Sorong Selatan	implemented	13	80.38	implemented
6.	Fafanlap, Misool Selata, Raja Ampat	implemented	11	82.27	Not implemented, due to rainy weather

Based on Table 3, pinhole education and training can be implemented well with 83 participants involved who are residents and children at the observation location. However, as the eclipse observation time approached, there was 1 location, namely in Raja Ampat Regency, which experienced rainy weather, so direct observation of the solar eclipse could not be carried out. In the response questionnaire scored 79.92% in the good category. The questionnaire results indicate a highly successful solar eclipse education and observation training. Participants showed significant improvement in understanding the solar eclipse phenomenon and types, with enhanced confidence in explaining these concepts. The training effectively addressed safety concerns, leading to increased awareness of health risks and the importance of eye protection during observations. The program not only sparked a greater interest in astronomy but also motivated participants to seek additional knowledge about natural phenomena

The questionnaire responses were carried out after participants had observed the solar eclipse. The distribution of response and location indicator assessments can be seen in Figure 6 below:

Based on Figure 6, on the understanding of the solar eclipse indicator, the average score is 82.98 in the very good category. In the Awareness of Safety in Solar Eclipse Observation indicator, 78.76% was obtained in the good category. In the Personal Benefits of the Training indicator, the average score was 78.89% in the good category. Meanwhile, the training quality indicator obtained a score of 79.05% in the good category. For the final assessment score, the training participants' response score was 79.92% in the good category. The assessment results indicate positive feedback for the solar eclipse observation and education training. Participants demonstrated a strong understanding of the solar eclipse phenomenon, while safety awareness during observation and personal benefits of the training were also rated positively. The overall quality of the training received satisfactory evaluations. The final assessment, based on participants' responses, confirms the training's effectiveness in enhancing understanding, safety awareness, and personal benefits.

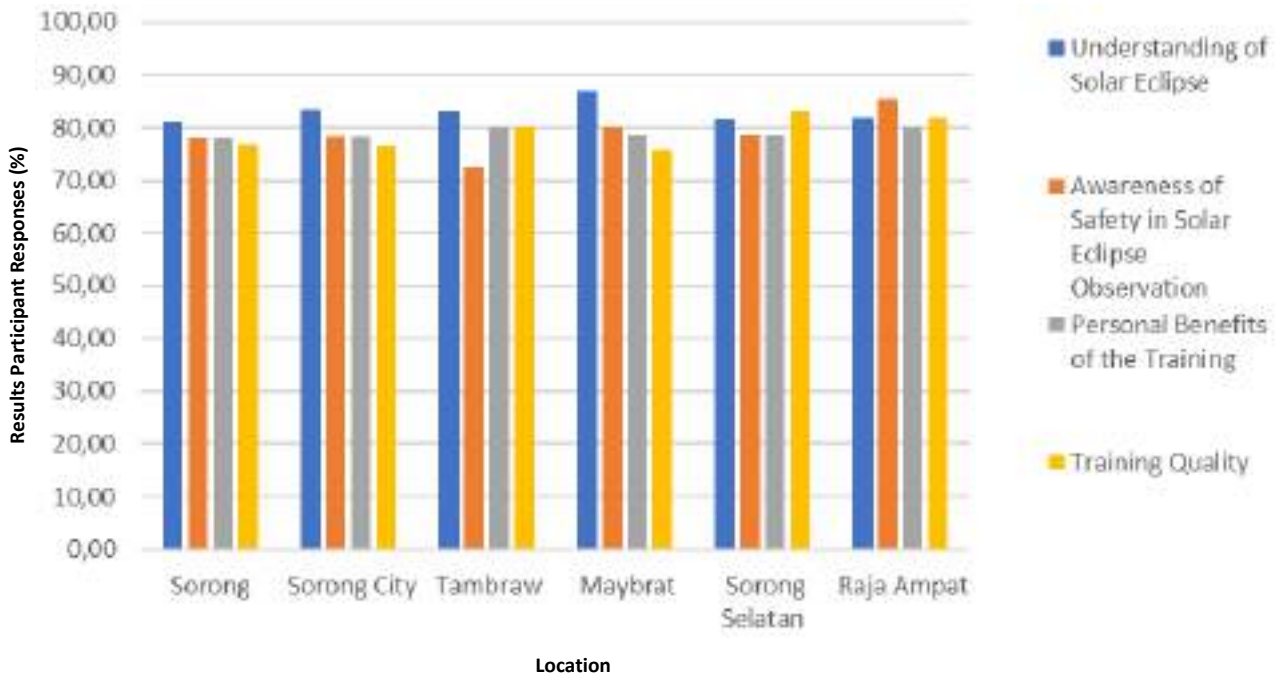


Figure 6. Results of scoring four indicators at six observation locations

#### Publishing the activity in the media

The solar eclipse observation activity succeeded in touching and opening people's insight into this fascinating natural phenomenon through widespread publication in the mass media, both regional and national. Media coverage helps increase public interest and participation in observing solar eclipses safely and correctly and strengthens awareness of the importance of scientific education about natural phenomena. This activity was successfully published in 5 mass media at national and regional levels. The results of media publications at this stage are shown in Table 4.

Table 4. List of mass media publications

Media	Type	Levels	Link
Detik.com	Electronic	National	<a href="https://www.detik.com/susel/berita/d-6682880/mahasiswa-unimuda-sorong-pantau-gerhana-matahari-dengan-alat-sederhana">https://www.detik.com/susel/berita/d-6682880/mahasiswa-unimuda-sorong-pantau-gerhana-matahari-dengan-alat-sederhana</a>
Suara muhammadiyah	Electronic	National	<a href="https://suaramuhammadiyah.id/2023/04/20/unimuda-sorong-dan-uad-kolaborasi-pengamatan-gerhana-matahari-di-papua-barat-daya/">https://suaramuhammadiyah.id/2023/04/20/unimuda-sorong-dan-uad-kolaborasi-pengamatan-gerhana-matahari-di-papua-barat-daya/</a>
Metro TV	Television	National	<a href="https://www.metrotvnews.com/play/NrWCZBxB-mahasiswa-unimuda-sorong-buat-alat-dari-kardus-untuk-amati-gerhana-matahari">https://www.metrotvnews.com/play/NrWCZBxB-mahasiswa-unimuda-sorong-buat-alat-dari-kardus-untuk-amati-gerhana-matahari</a>
TribunSorong	Electronic	Regional	<a href="https://sorong.tribunnews.com/amp/2023/04/20/gunakan-alat-seadanya-unimuda-sorong-buka-10-titik-pemantauan-gerhana-matahari">https://sorong.tribunnews.com/amp/2023/04/20/gunakan-alat-seadanya-unimuda-sorong-buka-10-titik-pemantauan-gerhana-matahari</a>
Radar Sorong	Electronic	Regional	<a href="https://www.radarsorong.id/gunakan-alat-sederhana-unimuda-sorong-ajak-masyarakat-amati-gerhana-matahari/">https://www.radarsorong.id/gunakan-alat-sederhana-unimuda-sorong-ajak-masyarakat-amati-gerhana-matahari/</a>



## CONCLUSION

The Solar Gehana Education and Observation Program was successfully implemented in 6 Regencies/Cities in Southwest Papua. This activity was carried out using mini-lectures, pinhole training, and joint eclipse observations. In general, this program can increase public understanding and awareness regarding the safety of observing solar eclipses, with the training participants' response score being 79.92% in the good category. Apart from that, this program has succeeded in touching and opening people's insight into this interesting natural phenomenon through widespread publication in the mass media, both regional and national. The success of this program shows the importance of scientific education about solar eclipses and contributes to increasing public awareness and interest in this rare and interesting natural phenomenon. This program is also a good example of similar activities that can be done in the future to increase public understanding of other natural phenomena.

## ACKNOWLEDGEMENT

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## REFERENCES

- Amartiwi, U. (2023). Edukasi anak-anak tentang fenomena gerhana dan halo matahari di Kota Pekanbaru. *EMPOWERMENT: Jurnal Pengabdian Masyarakat*, 2, 155–162.
- BMKG. (2023). *Gerhana matahari hibrid 20 April 2023*.  
[https://cdn.bmkg.go.id/web/Gerhana\\_Matahari\\_Hibrid\\_20\\_April\\_2023.pdf](https://cdn.bmkg.go.id/web/Gerhana_Matahari_Hibrid_20_April_2023.pdf)
- Buxner, S. R., Fitzgerald, M. T., & Freed, R. M. (2021). Amateur astronomy: Engaging the public in astronomy through exploration, outreach, and research. *Space Science and Public Engagement*, 143–168. Elsevier.  
<https://doi.org/10.1016/B978-0-12-817390-9.00002-6>
- Fatima, S. (2016). Total solar eclipse education for young generation at Palangkaraya, Central Kalimantan. *Journal of Physics: Conference Series*, 771(1). <https://doi.org/10.1088/1742-6596/771/1/012044>
- Haristiani, N. (2017). Myths, Islamic view, and science concepts: The constructed education and knowledge of solar eclipse in Indonesia. *Journal of Turkish Science Education*, 14(4), 35–47. <https://doi.org/10.12973/tused.10211a>
- Haristiani, N., Wiryani, A., Rusli, A., Nandiyanto, A., Permatasari, N., Sucahya, T., Purnamasari, A., Sofiani, D., Isma, W., Abdullah, A., Ana, Mrs., & Hurriyati, R. (2016). Did the solar eclipse of 9 March 2016 attract tourist to come to Indonesia? *Proceedings of the Asia Tourism Forum*. 2016 - the 12th Biennial Conference of Hospitality and Tourism Industry in Asia, March, 432–436. <https://doi.org/10.2991/atf-16.2016.66>
- Haristiani, N., Zaen, R., Nandiyanto, A. B. D., Rusmana, A. N., Azis, F., Danuwijaya, A. A., & Abdullah, A. G. (2018). Solar eclipse: Concept of “science” and “language” Literacy. *IOP Conference Series: Materials Science and Engineering*, 306(1). <https://doi.org/10.1088/1757-899X/306/1/012093>
- Humaida, N., Aula Sa'adah, M., Huriyah, H., & Hasanatun Nida, N. (2020). Pembangunan berkelanjutan berwawasan lingkungan (sustainable development goals) dalam perspektif Islam. *Khazanah: Jurnal Studi Islam dan Humaniora*, 18(1), 131. <https://doi.org/10.18592/khazanah.v18i1.3483>
- Kemendagri. (2023). *Visualisasi data kependudukan*. <https://gis.dukcapil.kemendagri.go.id/peta/>
- Kurniawan, D. T., Santi, D. P. D., & Maryanti, S. (2020). Program edukasi astronomi melalui kegiatan stream untuk siswa sekolah dasar dalam upaya peningkatan kesadaran keamanan pengamatan peristiwa gerhana matahari. *Al-Khidmat*, 3(1), 70–78. <https://doi.org/10.15575/jak.v3i1.7651>
- Maithong, W., & Pancharoen, W. (2020). Creation of pinhole camera for solar eclipse using STEM education. *2020 5th International STEM Education Conference (ISTEM-Ed)*, 131–133. <https://doi.org/10.1109/ISTEM-Ed50324.2020.9332718>
- Mardiani, R. A., & Boediman, E. P. (2021). Strategi hubungan masyarakat Himpunan Astronomi Amatir Jakarta (HAAJ) dalam membangun kesadaran ilmu astronomi di masyarakat. *PANTAREI*, 5(2).
- Mujab, S. (2014). Gerhana antara mitos, sains, dan Islam. *YUDISIA : Jurnal Pemikiran Hukum dan Hukum Islam*, 5(1), 83–101. <https://doi.org/http://dx.doi.org/10.21043/yudisia.v5i1.700>
- Nurfatimah, S. A., Hasna, S., & Rostika, D. (2022). Membangun kualitas pendidikan di Indonesia dalam mewujudkan program sustainable development goals (SDGs). *Jurnal Basicedu*, 6(4), 6145–6154. <https://doi.org/10.31004/basicedu.v6i4.3183>
- Pribadi, R. E. (2017). Implementasi sustainable development goals (SDGs) dalam meningkatkan kualitas pendidikan di Papua. *Journal Ilmu Hubungan Internasional*, 5(3), 917–932.

- Rachmadian, A. P., Kunjaya, C., Wahono, W., & Anugrah, A. A. (2016). Public outreach and education during the 2016 total solar eclipse in Palu and Malang. *Journal of Physics: Conference Series*, 771(1). <https://doi.org/10.1088/1742-6596/771/1/012023>
- Raharja, E. P., & Pramudya, Y. (2016). Outreach activities in anticipation of the 2016 solar eclipse in Sorong. *Journal of Physics: Conference Series*, 771(1). <https://doi.org/10.1088/1742-6596/771/1/012024>
- Safitri, A. O., Yuniarti, V. D., & Rostika, D. (2022). Upaya peningkatan pendidikan berkualitas di Indonesia: Analisis pencapaian sustainable development goals (SDGs). *Jurnal Basicedu*, 6(4), 7096–7106. <https://doi.org/10.31004/basicedu.v6i4.3296>
- Sebben, V. (2019). Solar Eclipse: A didactic alternative for education in Astronomy. *Proceedings of the International Astronomical Union*, 15(367), 400–401. <https://doi.org/10.1017/S1743921321000338>
- Time And Date. (2023). 20 April 2023 total solar eclipse. <https://www.timeanddate.com/eclipse/solar/2023-april-20>



# Strengthening values in the Mentari Sehat Indonesia community in empowerment practices


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ARTICLE INFO	ABSTRACT
<p><b>Article history</b> Received: 2023-07-10 Revised: 2024-02-09 Accepted: 2024-02-09 Published: 2024-03-28</p> <p><b>Keywords</b> Community empowerment Empowerment practices Value improvement</p>	<p><i>In the present era, the concept of community empowerment, highlighted in the SDGs, has gained traction as a prevailing phenomenon on the global social landscape. Mentari Sehat Indonesia (MSI) implements a community empowerment practice based on noble values. To describe the noble values that exist in the MSI community in community empowerment practices and the stages of their internalization, the universal noble values category developed by Kluckhohn is used. This research is a single case study with data sourcing from informant, library study, written document and archive, and visual data collected through interview, observation and documentation. 12 people informant was selected purposively based on sex, leadership for regional subsidiary organization, and education level. Data was analyzed using an interactive model of analysis including data reduction, data display, and conclusion drawing as well as verification. Data validation was conducted using source triangulation technique. The study discovered several important values within the MSI Community, including views on life, work, ethics, nature, time, and relationships among people. The internalization of noble values was conducted by MSI community through value transformation, value transaction, and trans-internalization stages. These three stages seem to be a good strategy in forming work character for an organization or community.</i></p>
<p><b>Kata Kunci</b> Pemberdayaan masyarakat Peningkatan nilai Praktik pemberdayaan</p>	<p><b>Penguatan nilai-nilai pada komunitas Mentari Sehat Indonesia dalam praktik pemberdayaan.</b> Pemberdayaan masyarakat sebagaimana disebutkan dalam SDGs saat ini menjadi trend di kancah dunia sosial. Mentari Sehat Indonesia (MSI) menerapkan praktik pemberdayaan masyarakat yang berlandaskan nilai-nilai luhur. Untuk menggambarkan nilai-nilai luhur yang ada pada komunitas MSI dalam praktik pemberdayaan masyarakat dan tahapan internalisasinya, digunakan kategori nilai luhur universal yang dikembangkan oleh Kluckhohn. Penelitian ini merupakan penelitian studi kasus tunggal dengan sumber data dari informan, studi kepustakaan, dokumen tertulis dan arsip, serta data visual yang dikumpulkan melalui wawancara, observasi dan dokumentasi. Informan yang berjumlah 12 orang dipilih secara purposif berdasarkan jenis kelamin, kepemimpinan organisasi anak daerah, dan tingkat pendidikan. Analisis data menggunakan model analisis interaktif yang meliputi reduksi data, penyajian data, dan penarikan kesimpulan serta verifikasi. Validasi data dilakukan dengan teknik triangulasi sumber. Penelitian ini menemukan berbagai nilai luhur yang ada dalam Komunitas MSI: hakikat hidup, hakikat kerja, dan etos kerja, hubungan manusia dengan alam, persepsi terhadap waktu, dan hubungan manusia dengan sesamanya. Internalisasi nilai-nilai luhur dilakukan komunitas MSI melalui tahapan transformasi nilai, transaksi nilai, dan transinternalisasi. Ketiga tahapan tersebut nampaknya merupakan strategi yang baik dalam membentuk karakter kerja suatu organisasi atau komunitas.</p> <p>Copyright © 2024, Naredia, et al This is an open access article under the CC-BY-SA license</p> 
<p><b>How to cite:</b> Naredia, S. P., &amp; Supriyanto, S. (2024). Strengthening values in the Mentari Sehat Indonesia community in empowerment practices. <i>Journal of Community Service and Empowerment</i>, 5(1), 191-198. <a href="https://doi.org/10.22219/jcse.v5i1.27841">https://doi.org/10.22219/jcse.v5i1.27841</a></p>	

## INTRODUCTION

Within the rapid flow of modernity, communities, as supportive entities for urban/regional development, adapt dynamically to the pace of modernization across various domains. The swift modernity stream increasingly suppresses the existence of values in a city/a region's community. Giddens in his book entitled *The Consequences of Modernity* presupposes that modernity is often said to come up along with globalization (Powell, 2014). Such condition is viewed to represent the condition of community recently due to several external threats, globalized world and modernity itself. Furthermore, community empowerment in the scheme of modernity appears to be a new pillar of development, particularly in the attempt of creating city and sustainable community as the Sustainable Development Goals (SDGs) (Bartniczak & Raszkowski, 2022; del Arco et al., 2021; Khair et al., 2020). The Sustainable Development Goals (SDGs) consist of 17 points (Cheshmehzangi & Dawodu, 2019). The eleventh goal emphasizes the creation of inclusive, safe, resilient, and sustainable cities and settlements by 2030, along with the establishment of 10 national targets to achieve this aim (Arajärvi, 2018). The targets include, among others, integrated city and community development, infrastructure and urban service, and disaster risk and climate change in urban areas (Rahmadi et al., 2021). The attempts taken to achieve the targets are elaborated in policy, program, and activities to be implemented by government and non-government organization.

Community empowerment emerges as a response to the challenges posed by modernity, aiming to sustain growth and development, foster independence, promote self-sufficiency, and address social class disparities due to globalization exposure. It is because community empowerment is viewed as a process of developing, making self-sufficient, and strengthening bargaining power of lower-class society against the suppressing power in any life sectors and fields (Sari & Irawan, 2021). The urgency of society as the most important entity composing a region/city is inevitable from modernity challenge; therefore, they are forced to keep fighting for maintaining self-identity as the society with the empowerment it has entirely.

The community empowerment process in Indonesia seems to be done commonly by two actors: the bureaucrat (government) and the community itself (Prihanta et al., 2020). The bureaucrats with all their institutions and rules carry out a community empowerment strategy by assuming society as an object where their needs are aggregated in a work program. Meanwhile, on the other hand members of society (people) grow and develop themselves into various social communities with diverse interests as an attempt of finding solution to the need they define. It is in this perspective that the community-based empowerment assumes the community to be the subject.

As time goes by, community empowerment grows as a jargon for the contestation of development recently. Bureaucrat groups and community engage in the trend development, and so do they in Central Java region. As one of Indonesian provinces with the high population mobility rate, Central Java is replete with many society groups differentiating themselves into various communities. Community, as a group of people sharing the same values and interests, supporting and helping each other (Svaida & Tsysyk, 2022). It is intended to maintain social unity, structure, and certain norms. Value is a belief system within society that influences individuals' actions and perceptions of right and wrong (Gayen, 2023; Hinshelwood, 2022). Values are important to a society because they function as an orientation in interpreting something believed to be true (Hills, 2002). The wrong meaning of values is certainly a problem in supporting SDG development, this is proof that accelerating SDS needs to be supported by human resources with character. As an effort, values are needed as basic guidelines (Sukitman, 2016).

Mentari Sehat Indonesia (thereafter called MSI), as one of community-empowerment based communities in Central Java, in its existence in the Tuberculosis (TBC) eliminating program operates along with 34 network branches in all regencies/cities existing in Central Java. As the society-based community supporting public participation in health, social and education sectors in Indonesia, MSI keeps moving to optimize the non-governmental health infrastructure and to maintain the social group dynamics in order to independently solve the health, social, and education problems existing in the society. For example, in 2023, Mentari Sehat Indonesia, a collaborative partner of the Bakrie Center Foundation, which is domiciled in Semarang, Central Java, held a commemoration of the 59th National Health Day (HKN) with the theme Health Transformation for Advanced Indonesia. The 34 networks distributed in Central Java region are filled in by the community groups called community cadres. In undertaking their role and function in doing some activities, the community cadres are motivated with diverse interests that is consequently vulnerable to disunity. MSI, as their main community, of course has a strategy of maintaining the social integration of its internal unit, one of which is through value internalization as the foundation of its movement.

Some articles explaining value internalization in group/organization (Ahmadi et al., 2020; Harnanto, 2022; Kusumaningrum & Sulistyaningsih, 2021; Mesterjon et al., 2021; Nursyamsiah, 2014; Sul-toni et al., 2018; Tambak et al., 2021). All of the articles revealed that the internalization of values is done through formal education realm from senior high school to university. Those articles also did not explain the procedure of internalization specifically. Only Mesterjon et al. (2021) and Harnanto (2022) articles did explain the internalization model through exploratory study and BMT Garuda and Bupanca Media. Meanwhile, Kusumaningrum and Sulistyaningsih (2021) article discussed more the internalization of Pancasila values in adolescents through digital literacy education program. From existing previous

studies, there have been no studies that discuss communities or organizations with a large number of branches such as Mentari Sehat Indonesia. Hence, it is intriguing to observe the practices carried out by Mentari Sehat Indonesia as a community with a large number of branches in carrying out character building for its members in all branches. Therefore, the objective of article is to give a description about the process of internalization and the noble values existing in a community based on community empowerment, particularly MSI community, using Kluckhohn's framework of noble values. This article is expected to provide additional references to other researchers or other disciplines, particularly related to its implementation in educational world.

## METHOD

This research is single case study, a procedure of research directed to one characteristic, meaning that this research is conducted on one general target/location only. The location used in this study is of course the Mentari Sehat Indonesia Community in Semarang City involving 34 branches (Banjarnegara Regency, Banyumas Regency, Batang Regency, Blora Regency, Boyolali Regency, Brebes Regency, Cilacap Regency, Demak Regency, Grobogan Regency, Jepara Regency, Karanganyar Regency, Kebumen Regency, Kendal Regency, Klaten Regency, Kudus Regency, Magelang Regency, Regency Pati, Pekalongan Regency, Pemasang Regency, Purbalingga Regency, Purworejo Regency, Rembang Regency, Semarang Regency, Sragen Regency, Sukoharjo Regency, Tegal Regency, Temanggung Regency, Wonogiri Regency, Wonosobo Regency, Magelang City, Pekalongan City, Semarang City, Surakarta City, and Tegal City). Case study was selected in this case because it is considered as more explanatory and leading more to the use of case study strategies. This research used cross sectional study technique. Cross sectional study is a method allowing the research period to be shortened to just few months, rather than in long period of time. This research used an approached integrated into theory and sociology and education disciplines, and therefore it belongs to a multidisciplinary approach. This method is intended to analyze and to interpret precisely, because the phenomenon is so complex that difficult to find out using one research approach.

Data sourced from information obtained from informants, library study, written document and archive, and visual data. In addition, empirical data obtained from the field is necessary to understand comprehensively the object of study investigated, because basically research is an individual's attempt of approaching, understanding, analyzing, and explaining the phenomenon related to certain object. Techniques of collecting data used were interview, observation, and documentation. Informants were selected purposively. In this case, 12 people informants were selected based on sex, leadership of local-branch organization, and education level. Purposive technique is the one used to select informants intentionally. Data was analyzed using an interactive model of analysis with three basic components: data reduction, data display and conclusion drawing or verification (Rijali, 2019). Data validation was carried out using source triangulation technique, by cross-checking and comparing the confidence level of information obtained through different times and different instruments.

## RESULTS AND DISCUSSION

Value is an integral part of each object whether it is in its activity, shape, or function. Value is inherent to each element of life, from society relation to activity practice as a social fact. The discussion about value orientation, particularly noble value, as social fact, can use a framework that has ever been developed by Kluckhohn (Hills, 2002). The framework universally divides cultural values as the noble values of all nations in the world into five categories based on five important matters in human life: (a) nature of life, (b) nature of work and work ethos, (c) relation between human and nature, (d) perception on time, and (e) relation between humans and their fellows. The classification of values within the MSI community will be elucidated in the subsequent paragraph.

The nature of life serves as the foundation for the MSI community's program activities. This value guides the community's approach, ensuring that its endeavors align with principles of community empowerment. Specifically, in the fight against tuberculosis (TBC), the MSI community operates on the ethos of altruism, driven by the belief in being of service to others. The nature of life intended is a view of living to work or working to live. Through such view, individuals rearticulate the life choice to undertake and to fill in with anything, for the benefit of fellow human beings, by helping TBC patient or being ordinary individual without benefit for others (fellows). This value is very important to internalize into the members of MSI community, recalling that the activities they undertake are social ones, participating actively in the program of eliminating TBC through searching for the TBC cases with such strategies as contact investigation, illumination, and education for TBC patients who undertake treatment completely, making the people aware of maintaining clean and healthy life style (Indonesian: pola hidup bersih dan sehat, thereafter called PHBS) and giving enabler aid (social aid) to the needy TBC patients. All of activities, if not based on such nature of life, can foster new value orientation such as self-interest, wish to take advantage, and calculation of interest either individual or group. The nature of life value should, of course, be transformed into the members of MSI community as the foundation of their activities in defining the movement in community empowerment stage and to control and prevent them from being drunk in the swift modernity stream and losing humanity orientation in completing the TBC elimination acceleration program, particularly in Central Java and generally in Indonesia, through a community-based approach.



The next value is the nature of work and work ethics. This value on the value transformation stage conducted by MSI coach is always manifested into an advice that human beings should leave (work) trace in their life, and to do so they need good work ethos. Therefore, jargons like work hard, being smart, sincere, and thorough are always implanted into all members of MSI in all activities attended by the Coach of MSI community. Maintaining work ethos in such a way that anything done will expectedly be the trace of work as human beings throughout life. In other words, the interpretation of these nature of work and work ethos values confirms the previous value such as the nature of life. Ethos is interpreted by the members of MSI as attitude, personality, predisposition, character, and belief in something. This attitude belongs not only to individual but also group and even community, including MSI community. Thus, ethos pertains to life spirit, including the spirit of working, learning knowledge (science) and improving skill in order to build better life in the future. Person cannot enhance their quality of life without possessing a strong work ethic, relevant knowledge, and proficient skills related to their respective occupations (Kaur, 2020). In line with that, work ethos is the people's attitude to the definition of work as the factor supporting successful business and development (Setiani et al., 2022). Work ethic is an important part of carrying out work activities (Rabinowitz, 2017; Satar, 2022). Figure 1 illustrates the challenges faced by members of the Mentari Sehat Indonesia Community in conducting health education while maintaining a strong work ethic.



Figure 1. The challenges in carrying out health education armed with a high work ethic by members of the Mentari Sehat Indonesia Community

The next value is relation of human beings to nature. The perception on nature can also apparently be defined as environment, the place where individuals live. Through educating the people about the Clean and Healthy lifestyle, the members of MSI community in their operation try to transform and transact this value to the community. It is always done to maintain the good living environmental ecosystem in the society, particularly in the environment where the TBC patients reside. Simple assumption can always be seen from the activities done by MSI members routinely, from social service action to responsive action to natural disaster occurring in Central Java. The response is taken not merely through humanity donation, but also through environmental care in the region affected by natural disaster. The members of community understand the importance of ecological as the part of sustainable community development. In this transformation stage, the value is related to the relation of human-to-nature, Coach and Supervisor of MSI community always teach the importance of environment as the room of living. It means that through participating in maintaining the environmental preservation, the MSI community indirectly contributes to maintaining the spirit of humanizing human. It is because human beings can keep having productivity if they are in healthy and good environment. In addition to assuming the mission to educate the people, the transformation and transaction of value concerning the relation of human to nature also can strengthen the existence of value concerning the nature of life and the nature of work and work ethos, because human can be more creative if they are supported with work ethos that is affected by healthy environment. The consciousness of this importance of relation gives a distinctive challenge to MSI community recalling that any practices of managing TBC patients often involve mask wearing as the important part of standard governance for TBC elimination. The waste of used mask seems to need special attention in order not to be in contradiction with the values transacted to the people. Therefore, MSI community in this situation does reconciliation by burning the mask waste correctly in the appropriate place.

Next value is human's perception on time. To explain this value, MSI community consists of the members that transact the value in the TBC eliminating activity through work system with indicator target and variant analysis to support its performance. The achievement of target is of course done by measurable planning as scheduled. The reporting system that should be made monthly is also a form of value transaction conducted by the members of MSI. Time is an important

part of program implementation, because the presence of duration enables the aggregated achievement of process that has been carried out. It is important to see the growth and the development of program activity implementation, on the other hand the fulfillment of punctuality target, for example from the reporting side can be used as the material to project the next strategy. The projection is an important part, because the projection can represent the beginning of simulated program implementation in order to minimize the weakness of activity undertaken before. Appreciating time means appreciating the commitment of work ethos that has been transformed before into the value believed to be true and used as the guidelines of procedure to be taken by the members of MSI. Even to accustom and even to force the members to appreciate time, the Coach and the Supervisor of MSI often imposed sanction to those not maintaining their time commitment or their commitment to the time approved particularly in the activity reporting and implementing mechanism.

The relation of Humans to their Fellows. This value is the universal one understood by MSI community. The interpretation on the relation of humans-to-their fellows indicates that MSI members as the social creatures, of course, cannot live alone. They need cooperation with other individuals or groups such as work partner and network branch existing in each region. As the social group, MSI community operates by making socialization and communicating with other communities in the implementation of TBC elimination activities, for example with Health Department, *Puskesmas* (Public Health Center), Hospital, and other TBC survivor to synergy to build collaborative scheme of massive participation. This presence of value transaction enables each of MSI members to have their own social world to grow, develop, and move in the context of public participation. It, of course, ends up with the form of community-based community empowerment in the TBC elimination acceleration in Central Java.

Mentari Sehat Indonesia (MSI) has a unique strategy of internalizing value in maintaining the movement values for all of its members. These values are important in the process of developing the community's identity. Identity is important as the communicating function to confirm a certain typical characteristic to reveal the existence of an individual or a group of individuals amid society. Communication is an archetype to attract others to contribute to the togetherness (Buceniece, 2005; Finneran, 2019). Communication encompasses connection, dialogue, expression, information dissemination, persuasion, and symbolic interaction among individuals, constituting processes, symbolic activities, and exchanges of meaning (Ozcetin, 2023). Etymologically, internalization indicates a process, so that the internalization can be defined as a process. Internalization entails individuals personally accepting and embracing prevailing societal norms, ideals, or attitudes, which subsequently influence their behavior and self-perception (Viederman, 2021). MSI seems to understand the importance of internalization through viewing it as an individual's understanding or interpretation on subjective event as the disclosure of meaning. In this process, the individuals in group/community identifies themselves with various social institutions or social organizations in which the individuals become their members. The value internalizing stage existing in MSI community basically can be seen through the perspective of internalization stage through three stages: value transformation, value transaction, and trans internalization.

The first stage is transformation stage. This stage is a process of informing good and less good values. In this stage, verbal communication occurs. In the MSI community's activity practice, this stage can be seen in various forms: periodical coordination, monitoring and evaluation activity, capacity improvement, and *halal-bi-halal* (gathering to ask for forgiveness) activity. These varying activities enable all members of MSI community to meet face to face other factors such as the Community's coach and supervisor. It is in these activities that the values begin to be transformed through some methods: advice, tip, reprimand, and sanction to start transforming the values in all activities existing in the MSI Community.

Transaction stage is a value education stage by means of two-way communication, or reciprocal interaction. This stage, can be said as a stage of trialing the value transformation stage as aforementioned. In this stage, MSI Community starts to transact values received before in such activities as: networking with work partner, taking care of the members of network branch, and undertaking the TBC eliminating program activity, of course, pertaining directly to people/TBC patients. With the transformation of values received, all members of MSI community start to transact the values in their daily practice of program activity. The individuals capable of transacting values well will, of course, be acceptable to their social environment and get some convenience in the form of communication acceptance. Meanwhile, those who can transact values inadequately and fail in doing so in their social environment also find difficulty in communicating with their social environment and even worse, it can generate friction and social sanction.

Trans internalization stage; this stage is more in-depth than transaction stage. This stage is conducted not only through verbal communication but also mentality and personality. Thus, in this stage, personal communication plays an active role. trans internalization stage is the one used by individuals in interpreting the processes of transforming and transacting values that have been surpassed. Through conscious mentality and personality, the members of MSI community reflect themselves on action and values that have been transacted in their daily action. Varying response of other individuals, as the beneficiary of value transaction, will later plays considerable role in the process of trans internalizing values in the members of MSI community. The individuals successfully transforming and transacting the values will of course interpret those values more quickly as the form of value internalization into themselves. Meanwhile, those doing so poorly or failing need value trans internalization that runs more slowly but has more in-depth interpretation due to direct contact with value trial in value transaction stage.

The three stages can be exemplified as follows: a member of MSI community has gotten a variety of value transformations from various activities undertaken in the value transformation practice as aforementioned in TBC eliminating program. Individuals or members of MSI group or community then begin to transact the values in their program activities by involving other actors such as work partner and other community undertaking the similar program. The individuals successfully transact the value will easily run the program activities from organizing the people to treat TBC to fulfilling the target of program indicator. Meanwhile, the ones receiving the transformation value poorly and failing in value transaction will undertake the TBC eliminating program more slowly and even should face frictions with their work group or partner due to different interpretation on the values underlying the operation. At the same time or thereafter, the individuals affiliated with MSI Community reflect themselves on whatever having happened. They begin to re-find, re-articulate, and in turn reinterpret the values transacted to know whether or not they have been consistent with the values transformed before or even they bias and deviate far from the values they have received earlier.

Transformation, transaction, and trans internalization stages work incessantly to become dialectic of value interpretation from the value internalization process. The more the value transformation received, the more the values transacted as the form of trial and then reinterpreted as the part of value internalization. Even, the trans internalization process done often begins to be transacted again as the form of value trial over the transformation of values received by individual members of MSI community. It is because value internalization takes a long time as value transaction should be carried out repeatedly to get significant action that is done to represent the interpretation of value from the experience of value transformation the individuals had or received. At the same time, when individuals do value transaction, they also carry out value transaction into the articulation of other varying action in their own social environment.

## CONCLUSION

Several values develop in MSI: nature of life, nature of work, and work ethos, relation of humans to nature, perception on time, and relation of humans to the fellows. All of these values are internalized through the activities carried out by MSI community in some stages: value transformation (process of finding value), value transaction (process of implementing value into action), and trans internalization (process of crystalizing value). In the value transformation stage, only verbal communication does occur. This stage is carried out through some activities: periodical coordination, monitoring and evaluation, capacity improvement, and halal-bi-halal (gathering to ask for forgiveness). Then, in Value Transaction stage, value education occurs by means of two-way communication or reciprocal interaction. This stage can be said as the trial of value transformation stage. This stage is characterized with the transaction of values in various activities like networking with work partner, taking care of the members of network branch, and undertaking the activity of TBC eliminating program pertaining directly to people/TBC patient. The last stage is trans internalization; this stage is more in-depth than transaction stage. In this stage is carried out not only using verbal communication but also mentality and personality. Thus, in this stage, personal communication plays an active role. Trans internalization stage is the one used by individuals in interpreting the process of value transformation and transaction surpassed. Through conscious mentality and personality, the members of MSI community reflect themselves on the action and reinterpret the values that have been transacted in their daily action.

Considering the elaboration above, the capacity improvement is important to be carried out periodically by National Unity and Politics Agency of Central Java Province to organizations or communities (social groups) existing in Central Java. It is important because the activity can be used to implant Pancasila values to strengthen the society and to maintain social integrity.

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## REFERENCES

- Ahmadi, A., Basuki, B., & Irawan, E. (2020). The internalization of attitude and values: comparison study in PTKIN and PTKIS. *Cendekia: Jurnal Kependidikan Dan Kemasyarakatan*, 18(1), 17–32.  
<https://doi.org/10.21154/cendekia.v1i1.1761>
- Arajärvi, N. (2018). Including cities in the 2030 agenda – A review of the post-2015 process. In H. P. Aust & A. du Plessis (Eds.), *The Globalisation of Urban Governance*. Routledge. <https://doi.org/10.4324/9781351049269>
- Bartniczak, B., & Raszkowski, A. (2022). Implementation of the Sustainable Cities and Communities Sustainable Development Goal (SDG) in the European Union. *Sustainability*, 14(24), 16808.  
<https://doi.org/10.3390/su142416808>

- Buceniece, E. (2005). How can we be together: Intersubjectivity and communication. In *Phenomenology of Life. Meeting the Challenges of the Present-Day World* (pp. 119–128). Springer Netherlands. [https://doi.org/10.1007/1-4020-3065-7\\_9](https://doi.org/10.1007/1-4020-3065-7_9)
- Cheshmehzangi, A., & Dawodu, A. (2019). The review of Sustainable Development Goals (SDGs): People, perspective and planning. In *Sustainable Urban Development in the Age of Climate Change* (pp. 133–156). Springer Singapore. [https://doi.org/10.1007/978-981-13-1388-2\\_4](https://doi.org/10.1007/978-981-13-1388-2_4)
- del Arco, I., Ramos-Pla, A., Zsembinszki, G., de Gracia, A., & Cabeza, L. F. (2021). Implementing SDGs to a sustainable rural village development from community empowerment: Linking energy, education, innovation, and research. *Sustainability*, 13(23), 12946. <https://doi.org/10.3390/su132312946>
- Finneran, M. (2019). On cooperation and togetherness. *Research in Drama Education: The Journal of Applied Theatre and Performance*, 24(2), 115–117. <https://doi.org/10.1080/13569783.2019.1583718>
- Gayen, P. (2023). Values and morals in contemporary society: Role in various domains. *Galore International Journal of Applied Sciences and Humanities*, 7(2), 1–6. <https://doi.org/10.52403/gijash.20230201>
- Harnanto, H. (2022). Internalization of Pancasila values through school cultivation during the Covid-19 pandemic. *JED (Jurnal Etika Demokrasi)*, 7(1), 1–13. <https://doi.org/10.26618/jed.v7i1.6111>
- Hills, M. D. (2002). Kluckhohn and Strodtbeck's values orientation theory. *Online Readings in Psychology and Culture*, 4(4). <https://doi.org/10.9707/2307-0919.1040>
- Hinshelwood, R. D. (2022). Value: Inner and outer. In *Psychoanalysis, Science and Power*. Routledge Taylor & Francis Group. <https://www.taylorfrancis.com/chapters/edit/10.4324/9781003204244-16/values-hinshelwood>
- Kaur, S. (2020). Meaningful employment contributes to an improved quality of life. *International Journal of Applied Research*, 6(3), 152–154. <https://www.allresearchjournal.com/archives/2020/vol6issue3/PartC/6-3-5-617.pdf>
- Khair, N. K. M., Lee, K. E., & Mokhtar, M. (2020). Sustainable city and community empowerment through the implementation of Community-based monitoring: A conceptual approach. *Sustainability*, 12(22), 9583. <https://doi.org/10.3390/su12229583>
- Kusumaningrum, D. N., & Sulistyarningsih, T. (2021). The internalization of nationalism and Pancasila for teenager as the value to living in the era of digital transformation. *Journal of Community Service and Empowerment*, 3(2), 77–87. <https://doi.org/10.22219/jcse.v3i2.20595>
- Mesterjon, M., Suwarni, S., & Selviani, D. (2021). Exploratory study on internalization of character values through educational profession course. *Budapest International Research and Critics Institute (BIRCI-Journal): Humanities and Social Sciences*, 4(1), 58–65. <https://doi.org/10.33258/birci.v4i1.1536>
- Nursyamsiah, N. (2014). Moral values internalization through problem-based learning. *International Journal of Education*, 7(2). <https://ejournal.upi.edu/index.php/ije/article/view/5312/pdf>
- Ozcetin, B. (2023). What's in a name? Defining communication and communication theory. *European Journal of Communication*, 38(3), 307–313. <https://doi.org/10.1177/02673231231175300>
- Powell, J. L. (2014). Globalization and modernity. *International Letters of Social and Humanistic Sciences*, 28, 1–60. <https://doi.org/10.18052/www.scipress.com/ILSHS.28.1>
- Prihanta, W., Zainuri, A. M., Hartini, R., Syarifuddin, A., & Patma, T. S. (2020). Pantai Taman-Pacitan ecotourism development: Conservation and community empowerment orientation. *Journal of Community Service and Empowerment*, 1(1). <https://doi.org/10.22219/jcse.v1i1.11515>
- Rabinowitz, P. (2017). Work upon work. *American Literary History*, ajw063. <https://doi.org/10.1093/alh/ajw063>
- Rahmadi, A., Ad'hani, H., & Wulandari, K. (2021). An analysis of the 11th SDGs: Sustainable cities and communities in surakarta under the dpsir framework. *Global Environmental Science*, 2(3), 1–5. <https://jurnal.uns.ac.id/jged/article/view/54141/33565>
- Rijali, A. (2019). Analisis data kualitatif. *Alhadharah: Jurnal Ilmu Dakwah*, 17(33), 81. <https://doi.org/10.18592/alhadharah.v17i33.2374>
- Sari, D. S., & Irawan, I. (2021). Empowering community in creating business opportunities in Pahlawan Village, Batu Bara Regency. *Journal of Community Service and Empowerment*, 2(2), 83–88. <https://doi.org/10.22219/jcse.v2i2.16590>
- Satar, M. (2022). Penerapan etos kerja islami dalam meningkatkan produktivitas karyawan pada Bank Syariah Mandiri Kantor Cabang Parepare. *BALANCA : Jurnal Ekonomi Dan Bisnis Islam*, 3(2), 1–8. <https://doi.org/10.35905/balanca.v3i02.2633>
- Setiani, S., Sari, R. K., Munfarikha, A., & Safitri, R. (2022). Work ethos as mediator of the influence of human relations and physical work environment on employee performance. *Asian Journal of Economics, Business and Accounting*, 297–304. <https://doi.org/10.9734/ajeba/2022/v22i23874>
- Sukitman, T. (2016). Internalisasi pendidikan nilai dalam pembelajaran (upaya menciptakan sumber daya manusia yang berkarakter). *JURNAL JPSD (Jurnal Pendidikan Sekolah Dasar)*, 2(2), 85. <https://doi.org/10.26555/jpsd.v2i2.a5559>
- Sultoni, Gunawan, I., & Sari, D. N. (2018). The internalization of character values to students: A descriptive study. *Proceedings of the International Conference on Education and Technology (ICET 2018)*. <https://doi.org/10.2991/icet-18.2018.32>

- Svaida, O., & Tsysyk, O. (2022). Community as an element of forming a transitive society. *Slovo of the National School of Judges of Ukraine, 1-2(38-39)*, 83–94. [https://doi.org/10.37566/2707-6849-2022-1-2\(38-39\)-8](https://doi.org/10.37566/2707-6849-2022-1-2(38-39)-8)
- Tambak, S., Hamzah, H., Sukenti, D., & Sabdin, M. (2021). Internalization of islamic values in developing students' actual morals. *JPI (Jurnal Pendidikan Indonesia)*, 10(4). <https://doi.org/10.23887/jpi-undiksha.v10i4.30328>
- Viederman, M. (2021). The internalization of a representation of the therapist as an element in psychotherapeutic gain. *Psychiatry*, 84(1), 46–56. <https://doi.org/10.1080/00332747.2020.1843325>





# Adolescents and reproductive health: Promoting healthy habits for reproductive well-being

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ARTICLE INFO	ABSTRACT
<p><b>Article history</b>            Received: 2023-07-05            Revised: 2024-02-05            Accepted: 2024-03-26            Published: 2024-03-28</p> <p><b>Keywords</b>            Early adolescent            Health education            Reproductive health</p>	<p>Adolescence is characterized by rapid physical, psychological, cognitive, emotional, and reproductive changes. Providing accurate and sufficient information is crucial in preparing young individuals to face these changes. This program aims to improve the understanding of reproductive health, namely puberty, among early adolescents in grades IV and V (aged 10-14 years) at Banyuurip Elementary School. The design utilized is a quasi-experimental method including pre-test and post-test assessments. Thirty-eight students were chosen for this study by purposive sampling. The program's effectiveness is evaluated by a questionnaire, and the data is analyzed using a paired t-test. The data shows a notable difference in knowledge levels before and after obtaining health education through lectures and chats. Prior to health education implementation, most students demonstrated low knowledge levels (52.6%), followed by moderate levels (42.3%), while a tiny proportion had high knowledge levels (5.1%). After health education interventions, students' knowledge levels showed considerable improvement: 29% high, 71% sufficient, and 0% low. The average score increased from 76.58 before therapy to 83.16 after treatment. The median values were 80 and 90. The paired t-test yielded a p-value of 0.049, suggesting that reproductive health education significantly improved students' knowledge at Banyuurip Elementary School. The study indicates that health education could improve students' understanding of puberty and the maintenance of reproductive health.</p>
<p><b>Kata Kunci</b>            Awal Remaja            Kesehatan Reproduksi            Pendidikan Kesehatan</p>	<p><b>Remaja dan kesehatan reproduksi: Mempromosikan kebiasaan sehat untuk kesejahteraan reproduksi.</b> Masa remaja, terjadi perubahan fisik, psikologis, kognitif, afektif, dan reproduksi dengan pesat. Untuk mempersiapkan remaja awal menghadapi perubahan tersebut, perlu diberikan informasi yang akurat dan memadai. Program ini bertujuan untuk meningkatkan pemahaman remaja awal yang merupakan siswa kelas IV dan V (usia 10-14 tahun) di Sekolah Dasar Banyuurip mengenai kesehatan reproduksi termasuk kajian tentang pubertas. Desain yang digunakan adalah kuasi eksperimen dengan pendekatan <i>pre-pos test</i>. Partisipan dalam kegiatan ini berjumlah 38 siswa yang dipilih melalui <i>purposive sampling</i>. Keberhasilan program diukur dengan menggunakan kuesioner. Analisa data menggunakan uji t berpasangan. Hasil analisis menunjukkan adanya perbedaan yang signifikan antara tingkat pengetahuan sebelum dan sesudah diberikan intervensi berupa pendidikan kesehatan melalui ceramah dan diskusi. Hasil pengukuran Tingkat pengetahuan sebelum dilaksanakannya pendidikan kesehatan, Sebagian besar siswa memiliki tingkat pengetahuan rendah (52,6%), sedang (42,3%), dan tinggi (5,1%). Adapun setelah diberikan intervensi pendidikan kesehatan, tingkat pengetahuan siswa menjadi lebih baik yaitu kategori tinggi 29%, cukup 71%, dan tidak ada siswa yang memiliki pengetahuan rendah (0%). Skor rata-rata atau <i>mean</i> sebelum perlakuan adalah 76,58 dan <i>mean</i> pasca perlakuan adalah 83,16, dengan nilai median masing-masing 80 dan 90. Uji t berpasangan menghasikan p-value sebesar 0,049 yang menunjukkan bahwa pendidikan kesehatan reproduksi berpengaruh signifikan terhadap peningkatan pengetahuan siswa di Sekolah Dasar Banyuurip. Studi ini menyimpulkan bahwa Pendidikan kesehatan mampu meningkatkan pemahaman siswa tentang pubertas dan pemeliharaan kesehatan reproduksi.</p>

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## INTRODUCTION

According to the World Health Organization (WHO), individuals aged between 10 and 19 are classified as adolescents. Globally, there are approximately 1.2 billion adolescents within this age group. Notably, in low- and middle-income countries (LMICs), the proportion of adolescents is expected to rise until 2050 (Engel et al., 2019). The Central Bureau of Statistics reports that there are 69.82 million adolescents out of a total population of 270.20 million in Indonesia. 23.75 million are 10 to 14 years old, 23.1 million are 15 to 19 years old, and 22.95 million are 20 to 24 years old. Current and prospective adolescent population size will have a substantial impact on social, economic, and demographic development (Badan Pusat Statistik, 2021).

Previous research findings highlight two primary issues concerning adolescent reproductive health in Indonesia: insufficient knowledge about reproductive health and the prevalence of shifting sexual behavior among adolescents. These findings are supported by prior research which indicates that the majority of respondents possess adequate to moderate knowledge of adolescent reproductive health. The same study reveals that knowledge of reproductive health among junior high school students tends to be limited, with around 57.58 percent for male students and 62.85 percent for female students (Widiyastuti & Hakiki, 2022). The Indonesian Demographic and Health Survey (Kementerian Kesehatan Republik Indonesia, 2020) indicates that the level of reproductive health knowledge among adolescents remains low, with 73.46 percent of male adolescents and 75.66 percent of female adolescents aged 15 to 19 lacking adequate reproductive health knowledge. Based on an initial survey, it was determined that Banyuurip Elementary School falls within the jurisdiction of the Dlingo II Health Center, which operates under the Kapanewon Dlingo Bantul. Kapanewon Dlingo is among the districts in the Bantul Regency with the highest rates of early childbearing and youth marriage. Bantul Regency comprises seventeen districts or Kapanewon. In 2019, there were 544 early marriages and youth marriages in Kapanewon Dlingo, Kasihan, and Banguntapan, accounting for 36.7% of the total 1525. In 2020, there were 459 such marriages, comprising 32% of the total 1433, and in 2021, there were 372 marriages, representing 32.4% of the total 1147.

All issues related to adolescent reproductive health stem from a lack of information, understanding, and awareness regarding reproductive health. Knowledge and cognitive ability play a crucial role in guiding individuals' actions. Therefore, expanding adolescents' knowledge is vital. There are various methods to increase adolescents' knowledge, starting with early education from parents and continuing through counseling activities (Jones et al. 2015). These efforts enable adolescents to better comprehend and apply acquired knowledge to real-life situations (Amalia et al., Carapia-Fierros, P., Tapia-Pancardo, 2021). Knowledge about reproductive health can be acquired through health education, counseling, personal experiences, reading materials such as magazines, pamphlets, health-related books, and electronic media, as well as through education at school and within the family. The majority of human knowledge is obtained through visual and auditory means. The lack of knowledge may be attributed to a lack of information about reproductive health, particularly regarding the provision and maintenance of reproductive organs. Many individuals rely solely on information from their peers, whose perceptions may not necessarily be accurate. This lack of comprehension arises from several factors, including customs, culture, religion, and a lack of information from reliable sources. Consequently, various negative consequences may arise for adolescent groups and their families (Asni & Dwihestie, 2018, Allen et al. 2016). In fact, many adolescents are hesitant to discuss reproductive health issues with their parents due to embarrassment, fear of reprimand or punishment, or both. Additionally, numerous adolescents are unaware of their reproductive health conditions and are reluctant to undergo examinations at healthcare facilities.

Therefore, it is essential to provide adolescents with precise reproductive health information. The need for education on reproductive health among adolescents has become a national issue requiring attention. Reproductive health education will aid adolescents in acquiring accurate knowledge about their bodies and various reproduction and sexuality-related topics (Yuri et al., 2022, Maslowski et al. 2023). Therefore, the role of educational institutions and health agencies in educating adolescents about early reproductive health will be extremely beneficial in preparing them for current global developments. Effective reproductive health and sexuality education must be tailored to the age, culture, and context of young people's lives to ensure that the information is properly understood and promotes positive relationships in the modern era. This community service activity seeks to provide students with information about reproductive health in order to enhance their knowledge of this subject. In the context of sustainable development, this approach is expected to make a positive contribution to some of the Sustainable Development Goals (SDGs), in term of quality health and education. The programme also supports the achievement of gender equality since it provides knowledge to male and female students equally about reproductive health is an important step towards achieving gender equality at level of primary education.

## METHOD

This study employs a quasi-experimental methodology with a one-group pre- and post-test design. The population of interest consists of students in the fourth and fifth grades at Banyuurip Elementary School in Yogyakarta. The sample size for the study was 38 students, selected using purposive sampling technique with the inclusion criterion of minors aged between 10 and 14 who were present during the research. As part of the program implementation, a needs analysis was conducted through surveys and focus group discussions involving teachers, students, and parents. The program was executed in stages. The program started by conducting a thorough evaluation of issues and requirements using focus group discussion. Subsequently, teaching resources were created and a timeline for implementation was set up. Based on the assessment of requirements, an educational health program focusing on puberty was developed for the students at

Banyuurip Elementary School to facilitate knowledge transfer. The methods employed for health education implementation included lectures and discussions. Data were collected using a questionnaire as the data instrument. The effectiveness of the program was evaluated by comparing pre- and post-test scores on a questionnaire. Data analysis was conducted using the paired t-test. The success of the program was further assessed by interviewing representative participants to gain insights into their perspective on the program's impact.

## RESULTS AND DISCUSSION

Initial qualifications for participation in this investigation were met by a total of 42 individuals. However, only 38 students, or 90.1% of the eligible participants, participated actively in our study. There were 21 males, or 55.3% of the sample, and 17 girls, or 44.7%. The characteristics of respondents are summarized in Table 1.

Table 1. The characteristics of respondents

Characteristics	Number	Frequency
<b>Gender</b>		
Female	17	44,7%
Male	21	55,3%
<b>Puberty status</b>		
Not yet	24	63,2%
Yes	14	36,8%

The study collected data on respondents' knowledge before and after receiving reproductive health education is the derived. The results are shown in Table 2. The results of categorization on the level of reproductive health knowledge shows that before getting reproductive education respondents had knowledge of reproductive health in minimum score was 50, maximum score was 100, mean was 76.58 and standard deviation score was 13.209. After providing reproductive health education, the scores ranged from 60 to 100, with a mean score of 83.16 and a standard deviation of 11.415. This indicates the need for efforts to increase knowledge of reproductive health for students at Banyuurip Elementary School in Yogyakarta.

Table 2. Distribution of minimum, maximum, mean and standar deviation of knowledge pre and post health education

Knowledge	N	Minimum	Maximum	Mean	Std. Deviation
Pre test	38	50	100	76.58	13.209
Pos test	38	60	100	83.16	11.415

According to the findings of the study, the majority of respondents' prior knowledge of reproductive health fell into three categories: insufficient (52%), sufficient (42%), and competent (5%) (shown in Table 3). Following education on reproductive health, 71% of students had adequate knowledge, 29% had sufficient knowledge, and none had insufficient knowledge. This suggests that reproductive health education has a positive effect on the knowledge of adolescents. Before and after receiving reproductive health education, the mean knowledge score of adolescents was 76.58 (SD 13.209) and 83.58 (SD 11.58), respectively. These results are consistent with those of another study which also reported an increase in mean score before and after receiving sexual and reproductive health education, with a mean difference of 3.83 and SD 2.57 (Hastuti et al., 2023).

Table 3. The impact of reproductive health education on elementary school students

Knowledge	Pretest		Post test		Pvalue
	Number	Frequency	Number	Frequency	
High/Good	2	5,3%	27	71%	
Moderate/Average	16	42,1%	11	29%	
Low/Deficient	20	52,6%	0	0%	0,049
<b>Total</b>	<b>38</b>	<b>100%</b>	<b>38</b>	<b>100%</b>	

Adolescence is a distinct developmental stage between childhood and adulthood, encompassing the ages of 10 to 19. It is a crucial time for establishing healthy habits and requires age-appropriate sexual education. It is essential that adolescents develop life skills in a secure and supportive environment and receive equitable, appropriate, and effective healthcare. Teenagers should have meaningful opportunities to participate in the design and delivery of health promotion and maintenance interventions (Morris & Rushwan, 2015, Lassi et al., 2022). This period of transition to maturity is marked by physical, psychological, and social transformations. Teenagers, who are still figuring out their identities, are prone to impulsive behavior, and reproductive health issues, such as sexuality, become prevalent obstacles for them (Leekuan et al., 2022). Given the significance of reproductive health knowledge, it is essential that adolescents receive accurate information, so they can make informed decisions and avoid negative outcomes (Amalia et al., 2021).

Previous research has demonstrated that adolescents have a limited understanding of reproductive health, particularly with regard to menarche, menstruation, and menstrual hygiene (Eghbal et al., 2023). In the absence of accurate knowledge, negative attitudes and misconceptions about these topics can have negative effects on reproductive health. Inadequate preparation, knowledge, and practices regarding these matters can impede education, self-confidence, and personal development (Sanghirun et al., 2021; Sunarsih et al., 2020). In addition, the stigma and prohibition surrounding reproduction can limit the amount of information provided by families to young women, thereby preventing them from acquiring accurate reproductive health knowledge (Amalia et al., 2021, Baigry et al. 2023). In contrast, providing accurate information can improve adolescents' comprehension of reproductive system changes. Physically and psychologically preparing adolescents requires early provision of reproductive health education (Chandra-Mouli et al., 2019; Kohan et al., 2021). This approach focuses on improving early adolescents' understanding of reproductive health through early education. It not only improves individual knowledge but also aligns with the pursuit of many Sustainable Development Goals (SDGs). This program can help achieve excellent health and gender equality. Early education on topics such as reproductive health for students is a crucial step in achieving Sustainable Development Goals (SDGs).

This investigation focused on students in the fourth and fifth grades at Banyuurip Elementary School, with an average age of 10 to 11 years. According to the World Health Organization, puberty and the advent of menstruation typically occur between 10 and 19 years of age, during early to late adolescence. At this age, adolescents require reproductive health education and counseling, including age- and culturally appropriate information about puberty (World Health Organization, 2018). Providing adolescents with information during puberty is essential for enhancing their knowledge. Without sufficient information, adolescents may find it difficult to fathom reproductive health and develop a positive attitude toward it. Therefore, it is necessary to provide information and education on reproductive health in schools in order to increase adolescents' knowledge and encourage preventative actions. Early education on sexual and reproductive health is of the utmost importance (Lehtimaki et al., 2019).

The findings of the study indicate that students' knowledge of reproductive health increased both before and after receiving education on the topic. Previous research has demonstrated that adolescents who receive education regarding sexual and reproductive health are more likely to practice personal hygiene and maintain sanitation during menstruation (Djunaedi & Sulistyorini, 2021). The function of reproductive health education in assisting adolescents in acquiring knowledge, awareness, attitudes, and healthy and responsible lifestyle behaviors is crucial. In terms of reproductive health, adolescent knowledge of healthful behaviors can affect their actions and choices. Successful reproductive health education programs increase reproductive health knowledge and encourage positive behaviors (Eghbal et al., 2023; Pasay-an et al., 2020).

Students with adequate knowledge of reproductive health require special attention as they near the conclusion of their social preparation for adulthood, according to a notable finding of this study. The increase in reproductive health knowledge is influenced not only by education but also by parental involvement in preparing children for maturity, according to previous research (Eghbal et al., 2023). Age is also regarded as a predictor of a person's level of maturity and comprehension of their sexual orientation. In this study, respondents' sexuality and reproductive health knowledge increased linearly with age, indicating that age influences the quantity and type of information they acquire. The development of appropriate attitudes results from adolescents' increasing awareness of how others perceive them and the expected behaviors in various roles or contexts as they mature (Asni & Dwihestie, 2018).

## CONCLUSION

Following reproductive health education, the majority of students demonstrated a significant increase in knowledge, according to this study. Based on the reproductive health education, there was increasing the level of student knowledge according to mean score level from 76.58 to 83.16. It means that reproductive health education can improve knowledge and comprehension of reproductive health among fourth- and fifth-grade students at Banyuurip Elementary School. This is evident from the pre-test and post-test questionnaires that the dedicated team distributed. Effective reproductive health education is provided in order to increase students' knowledge. This study's findings can also be applied to the creation of a reproductive health promotion model.

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## REFERENCES

- Allen, D.F., Allen-Carroll, M., Ingraham, J., Roberts, A., Bethell, K. (2016). Re-socialization through the Adolescent Family Group Process. *General Internal Medicine and Clinical Innovations*, 1(1), 1-5.  
<https://doi.org/10.15761/GIMCI.1000101>
- Amalia, R. B., Wittiarika, I. D., & Jayanti, R. D. (2021). Strategies to improve the adolescent's reproductive health knowledge in the traditional Islamic Boarding School in Sidoarjo, Indonesia. *Journal of Midwifery*, 5(1), 14.  
<https://doi.org/10.25077/jom.5.2.14-21.2020>

- Asni, A., & Dwihestie, L. H. (2018). The effect of reproductive health counseling on readiness of managing menarche. *Journal of Health Technology Assessment in Midwifery*, 1(1), 35–39. <https://doi.org/10.31101/jhtam.445>
- Badan Pusat Statistik. (2021). *Hasil Sensus Penduduk 2020*. Retrieved from <https://www.bps.go.id/pressrelease/2021/01/21/1854/hasil-sensus-penduduk-2020.html>
- Baigry, M., Ray, R., Lindsay, D., Kelly-Hanku, A., Redman-MaLaren, M. (2023). Barriers and enablers to young people accessing sexual and reproductive health services in Pacific Island Countries and Territories: A scoping review. *PLOS ONE*, 18(1):e0280667-e0280667. doi: 10.1371/journal.pone.0280667
- Carapia-Fierros, P., Tapia-Pancardo, D.C. (2021). Innovative Techniques to Develop Educative Competitiveness in Adolescents' Mental Health: Importance in Nursing Training. *Health*, 13(09):903-909. doi: 10.4236/HEALTH.2021.139069
- Chandra-Mouli, V., Ferguson, B. J., Plesons, M., Paul, M., Chalasani, S., Amin, A., ... Engel, D. M. C. (2019). The Political, Research, Programmatic, and Social Responses to Adolescent Sexual and Reproductive Health and Rights in the 25 Years Since the International Conference on Population and Development. *Journal of Adolescent Health*, 65(6), S16–S40. <https://doi.org/10.1016/j.jadohealth.2019.09.011>
- Djunaedi, N., & Sulistyorini, Y. (2021). Personal Hygiene And Reproductive Health Knowledge Among Adolescents At Kampung Belajar, Surabaya. *Jurnal Biometrika Dan Kependudukan*, 10(2), 181. <https://doi.org/10.20473/jbk.v10i2.2021.181-190>
- Eghbal, S. B., Kenari, Z. A., Ashouri, A., Rouhani-Tonekaboni, N., Kasmaei, P., Mehrabian, F., ... Fattahi, E. (2023). The effectiveness of educational program based on health belief model on promotion of puberty health concepts among teen girls: A cross-sectional study in north of Iran. *BMC Women's Health*, 23(1), 239. <https://doi.org/10.1186/s12905-023-02391-3>
- Engel, D. M. C., Paul, M., Chalasani, S., Gonsalves, L., Ross, D. A., Chandra-Mouli, V., ... Ferguson, B. J. (2019). A Package of Sexual and Reproductive Health and Rights Interventions—What Does It Mean for Adolescents? *Journal of Adolescent Health*, 65(6), S41–S50. <https://doi.org/10.1016/j.jadohealth.2019.09.014>
- Hastuti, L., Wahyuni, T., Mardiyani, R., & Rahmawati, A. (2023). School-Based Sexual Health and Reproduction Education in Early Adolescents at Muhammadiyah Junior High School. *ABDIMAS: Jurnal Pengabdian Masyarakat*, 6(2), 3871–3876.
- Jones, J.D., Ehrlich, K.B., Lejuez, C.W., Cassidy, J. (2015). Parental knowledge of adolescent activities: links with parental attachment style and adolescent substance use. *Journal of Family Psychology*, 29(2):191-200. doi: 10.1037/FAM0000070
- Kementerian Kesehatan Republik Indonesia. (2020). *Profil Kesehatan Indonesia Tahun 2020*. Retrieved from <https://www.kemkes.go.id/downloads/resources/download/pusdatin/profil-kesehatan-indonesia/Profil-Kesehatan-Indonesia-Tahun-2020.pdf>
- Kohan, K., Allahverdizadeh, S., Farajzadegan, Z., Ghojazadeh, M., Boroumandfar, Z. (2021). Transition into the sexual and reproductive role: a qualitative exploration of Iranian married adolescent girls' needs and experiences.. *Reproductive Health*, 18(1):157-. doi: 10.1186/S12978-021-01208-6
- Lassi, Z.S., Neideck, E.G., Aylward, B.M., Andraweera, P.H., Meherali, S. (2022). Participatory Action Research for Adolescent Sexual and Reproductive Health: A Scoping Review. *Sexes*, 3(1):189-208. doi: 10.3390/sexes3010015
- Leekuan, P., Kane, R., Sukwong, P., & Kulnitichai, W. (2022). Understanding sexual and reproductive health from the perspective of late adolescents in Northern Thailand: A phenomenological study. *Reproductive Health*, 19(1), 230. <https://doi.org/10.1186/s12978-022-01528-1>
- Lehtimäki, S., Schwalbe, N., & Solis, L. (2019). *Adolescent health: The missing population in universal health coverage*. Plan International UK.
- Maslowski, K., Reiss, M., Biswakarma, R., Harper, J. (2023). Reproductive health education in the schools of the four UK nations: is it falling through the gap?. *Human Fertility*, 1-13. doi: 10.1080/14647273.2023.2216395
- Morris, J. L., & Rushwan, H. (2015). Adolescent sexual and reproductive health: The global challenges. *International Journal of Gynecology & Obstetrics*, 131, S40–S42. <https://doi.org/10.1016/j.ijgo.2015.02.006>
- Pasay-an, E., Magwilang, O. G., & Pangket, P. (2020). Knowledge, attitudes, and practices of adolescents regarding sexuality and reproductive issues in the Cordillera administrative region of the Philippines. *Makara Journal of Health Research*. <https://doi.org/10.7454/msk.v24i3.1245>
- Sanghirun, K., Fongkaew, W., Viseskul, N., & Lirtmunlikaporn, S. (2021). Perspectives of parents regarding sexual and reproductive health in early adolescents: A qualitative descriptive study. *Pacific Rim International Journal of Nursing Research*, 25(1), 60–74.
- Sunarsih, T., Astuti, E. P., Ari Shanti, E. F., & Ambarwati, E. R. (2020). Health Promotion Model for Adolescent Reproductive Health. *Electronic Journal of General Medicine*, 17(3), em212. <https://doi.org/10.29333/ejgm/7873>
- Widiyastuti, N. E., & Hakiki, M. (2022). Impact Of Reproductive Health Education On Adolescent Knowledge And Attitude About Healthy Reproductive Health. *Jurnal Kebidanan Malahayati*, 8(2), 349–357. <https://doi.org/10.33024/jkm.v8i2.6328>

- World Health Organization. (2018). *WHO recommendations on adolescent sexual and reproductive health and rights*. Retrieved from <https://apps.who.int/iris/bitstream/handle/10665/275374/9789241514606-eng.pdf>
- Yuri, S., Madeni, F., Shishido, E., & Horiuchi, S. (2022). Early adolescents' knowledge of anatomy, sexual characteristics and contraception from reproductive health education in Bagamoyo, Tanzania: A cross-sectional study. *African Journal of Midwifery and Women's Health*, 16(4), 1–11. <https://doi.org/10.12968/ajmw.2021.0033>





# Subject-based lesson study supporting Merdeka Curriculum enactment: Findings from Malang City science teachers

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ARTICLE INFO	ABSTRACT
<p><b>Article history</b> Received: 2023-09-28 Revised: 2024-02-14 Accepted: 2024-02-18 Published: 2024-03-28</p> <p><b>Keywords</b> Lesson study Merdeka Curriculum Professional development Subject teacher community</p>	<p><i>Developing teacher capability in implementing the Merdeka curriculum can take advantage of the activity of sustainable lesson study. Lesson study conducted at the subject teacher community provides a place for teachers to learn collaboratively to improve their professionalism. This study aims at present the findings of the implementation of a subject-based lesson study carried out among junior high school science teachers in Malang City, Indonesia, and expose their responses regarding the impact of this activity on their professional development in supporting the Merdeka Curriculum enactment. Teachers are actively involved and enthusiastic in participating in lesson study activities. The teacher stated that the implementation of subject-based lesson study was a forum for mutual learning and improving teaching skills so that it supported the implementation of the Merdeka Curriculum. Even so, continuous implementation accompanied by strengthening the principles of lesson study and learning principles that emphasize student involvement as well as developing students' thinking skills is needed. Finally, the constraints and expectations expressed by the teacher can be considered for designing a subject-based lesson study implementation model to form sustainable lesson study for learning communities in the future.</i></p>
<p><b>Kata Kunci</b> Kurikulum Merdeka Lesson study MGMP Pengembangan Profesional</p>	<p><b>Lesson study berbasis MGMP pada pemberlakuan Kurikulum Merdeka: Temuan dari Guru IPA Kota Malang.</b> Pengembangan kemampuan guru dalam penerapan Kurikulum Merdeka dapat memanfaatkan aktivitas lesson study yang berkelanjutan. Lesson study yang dilakukan pada komunitas guru mata pelajaran memberikan wadah bagi guru untuk belajar secara kolaboratif dalam meningkatkan profesionalismenya. Kajian ini bertujuan untuk menyajikan temuan pelaksanaan lesson study berbasis MGMP yang dilakukan pada guru IPA SMP di Kota Malang, Indonesia, dan memaparkan tanggapan guru mengenai dampak kegiatan tersebut terhadap pengembangan profesional mereka dalam mendukung pemberlakuan Kurikulum Merdeka. Guru terlibat aktif dan antusias dalam mengikuti kegiatan lesson study. Guru menyatakan bahwa pelaksanaan lesson study MGMP merupakan wadah untuk saling belajar dan meningkatkan keterampilan mengajar sehingga mendukung implementasi Kurikulum Merdeka. Meski begitu, diperlukan penerapan yang berkesinambungan disertai dengan penguatan prinsip-prinsip lesson study dan prinsip-prinsip pembelajaran yang menekankan pada keterlibatan serta pengembangan kemampuan berpikir siswa. Pada akhirnya, kendala dan harapan yang diungkapkan guru dapat menjadi bahan pertimbangan untuk merancang model pelaksanaan lesson study berbasis MGMP untuk membentuk lesson study yang berkelanjutan bagi komunitas pembelajaran di masa yang akan datang.</p>

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## INTRODUCTION

Merdeka Curriculum has a big vision for transforming education in Indonesia. This curriculum aims at create an innovative and competitive education, liberate students from traditional teaching methods and give them the opportunity to pursue their interests and abilities (Anggraena et al., 2022). With a more adaptive and integrated



approach, students will be encouraged to develop 21st-century skills, such as problem-solving, critical thinking, collaboration, and communication (Mustapa et al., 2024; Sihombing et al., 2021). In addition, this curriculum pays special attention to forming solid character and strong national values to produce individuals with integrity, broad-mindedness, and readiness to face an increasingly complex era of digital transformation (Setiyaningsih & Wiryanto, 2022).

Teachers play a crucial role in implementing the *Merdeka* Curriculum. The teacher takes the primary role in facilitating student-centered learning, allowing students to explore their interests and talents (Azmi & Iswanto, 2021). Teachers must have more adaptive and creative pedagogical skills to present learning that is relevant, interesting, and aligned with student's development (Hasanah et al., 2022; Sari et al., 2021). In addition, teachers also act as guides and mentors, assisting students in identifying and developing their potential (Simamora & Pasaribu, 2023). By respecting individual differences and diversity, teachers in the *Merdeka* Curriculum can build an inclusive environment that fosters high learning enthusiasm (Hasanah et al., 2022; Simamora & Pasaribu, 2023). With commitment and dedication, teachers will play a central role in forming a generation with critical thinking skills, creativity, and social responsibility, ready to face future challenges with confidence and comprehensive abilities (Anggraena et al., 2022). Due to the teacher's vital role in implementing the *Merdeka* Curriculum, efforts to increase competency and continuous professional development are needed to carry out quality learning (Kusanagi, 2022).

Efforts to improve teacher capabilities in implementing the *Merdeka* Curriculum have been carried out in various ways, from government to practitioner organization initiatives. The initiative carried out by the government is through special training called the *Program Guru Penggerak* (Direktorat Jenderal Guru dan Tenaga Pendidikan, 2020), which acts as an agent of change in learning transformation (Purwono, 2021; Satriawan et al., 2021). In addition, a teacher learning and sharing platform (Kemdikbudristek, 2023a), and *Merdeka* Teaching Platform (Kemdikbudristek, 2023b) are also provided, which accessible by all teachers. On the other hand, school initiatives, and professional or practitioners organizations also independently organize in-house training activities (Fauzi, 2022; Irvani et al., 2023), webinars (Rohimat & Najarudin, 2022), and training conducted in subject teacher community (Khery et al., 2022; Lestari et al., 2023).

Subject teacher community (MGMP: *Musyawah Guru Mata Pelajaran*) is an independent teacher organization in Indonesia essential to improving teacher competency and professionalism. Subject teacher community provides a platform for teachers in one subject to collaboratively deepen their understanding of effective curriculum, teaching methods, and evaluation strategies (Sari et al., 2018; Wild et al., 2018). This teacher community has become a forum for several activities to improve teacher competence in implementing the *Merdeka* Curriculum (Camellia et al., 2022; Jannati et al., 2023). These activities are designing lesson plan or teaching modules (Krismiati & Fernandes, 2020; Rosmiati et al., 2023) and university service activities in designing learning strategies (Mahdiannur et al., 2022; Mustika & Hasby, 2022; Ni'mah et al., 2023; Sari et al., 2023), learning media (Aulia et al., 2022), and lesson study (Burhanuddin et al., 2023).

Lesson study is a collaborative approach of professional teacher development originated in Japan. This approach involves teachers working together on an ongoing basis to identify problems in student learning, designing effective learning strategies, carrying out observations of the designed learning implementation, and then conducting in-depth studies and reflections on the learning process that has been carried out to improve and develop the learning (Susilo, 2013). Lesson study activities show an impact on improving teacher skills and student learning quality (Cheung & Wong, 2014; Gómez et al., 2015; Willems & Van den Bossche, 2019) which have been conducted in several curricula since its inception was introduced in Indonesia, especially in junior high school science subjects (Saito et al., 2006; Suratno, 2012).

Two forms of lesson study implementation have been employed in junior high school science subjects. First, a school-based lesson study is one that is conducted by science subject teachers alone or in conjunction with other subject teachers in a single institution (Suratno, 2012; Susilo et al., 2011); and the second, subject-based lesson study that conducted by teachers assembled in the particular subject teacher community, often just includes one subject teacher (Suratno, 2012). In the previous curriculum, school-based lesson study improved teacher performance in implementing science learning (Bungai et al., 2019). Subject-based lesson study also have been proven on increasing science teacher skills in carrying out the learning process, which impacts the quality and process of student learning (Hajar & Hendayana, 2019). Since the *Merdeka* Curriculum was enacted, practitioners have reported school-based lesson study implementation, which show an increase in junior high school students science learning outcomes (Amrilizia et al., 2023) and improve the quality of the science learning process (Chamisijatin & Zaenab, 2022). However, limited practitioners report subject-based lesson study for junior high school science teacher professional development since *Merdeka* Curriculum enacted.

One of the science subject teacher communities that has become a pioneer in implementing lesson study in Indonesia is in Malang City. The preliminary survey that we conducted with those administrators stated that the lesson study had been implemented through university service activities but was in the blended form (online and onsite) due to COVID-19 pandemic circumstance. Furthermore, lesson study was rarely conducted in this community before. Therefore, efforts are needed to reinstate lesson study activities in the junior high school science subject teacher community in Malang City to instill a professional learning culture to support the implementation of the *Merdeka* Curriculum.

Subject-based lesson study activities for science teachers in Malang city align with Sustainable Development Goal (SDG) target 4: quality education and lifelong learning. These activities enhance teachers' capacity to deliver high-quality instruction, thereby positively influencing student learning outcomes (Cheung & Wong, 2014). Additionally, lesson study

activities promote equal student participation, ensuring that every student gains a quality education (Saito & Atencio, 2015; Shanmugam et al., 2020). This aligns with SDG target 4.1, which aims at provide all students with an equitable and high-quality education leading to effective learning outcomes. Furthermore, these activities contribute to achieving SDG target 4.c by improving teacher qualifications by 2030 (Bengtsson et al., 2020; Yoshida, 2020).

The background described leads to the question, "Is the implementation of subject-based lesson study able to support the implementation of the *Merdeka* Curriculum based on the response of science teachers at junior high school in Malang City?". This paper aims at explain the findings of the implementation of subject-based lesson study and reveal the responses felt by teachers regarding its impact on supporting the implementation of the *Merdeka* Curriculum for junior high school science teachers in Malang City.

## METHOD

This study is a case study of the implementation of lesson study, which was conducted at junior high school science subject teacher community in Malang City. Lesson study activities are carried out through collaboration between the junior high school science subject teacher community in Malang City and the Doctoral Study Program in Biology Education, Universitas Negeri Malang. The activity was conducted at SMP Negeri (Sekolah Menengah Pertama Negeri: State Junior High School) 26 Malang City in November 2022. The participants in this activity were teachers gathered in the junior high school science subject teacher community in Malang City.

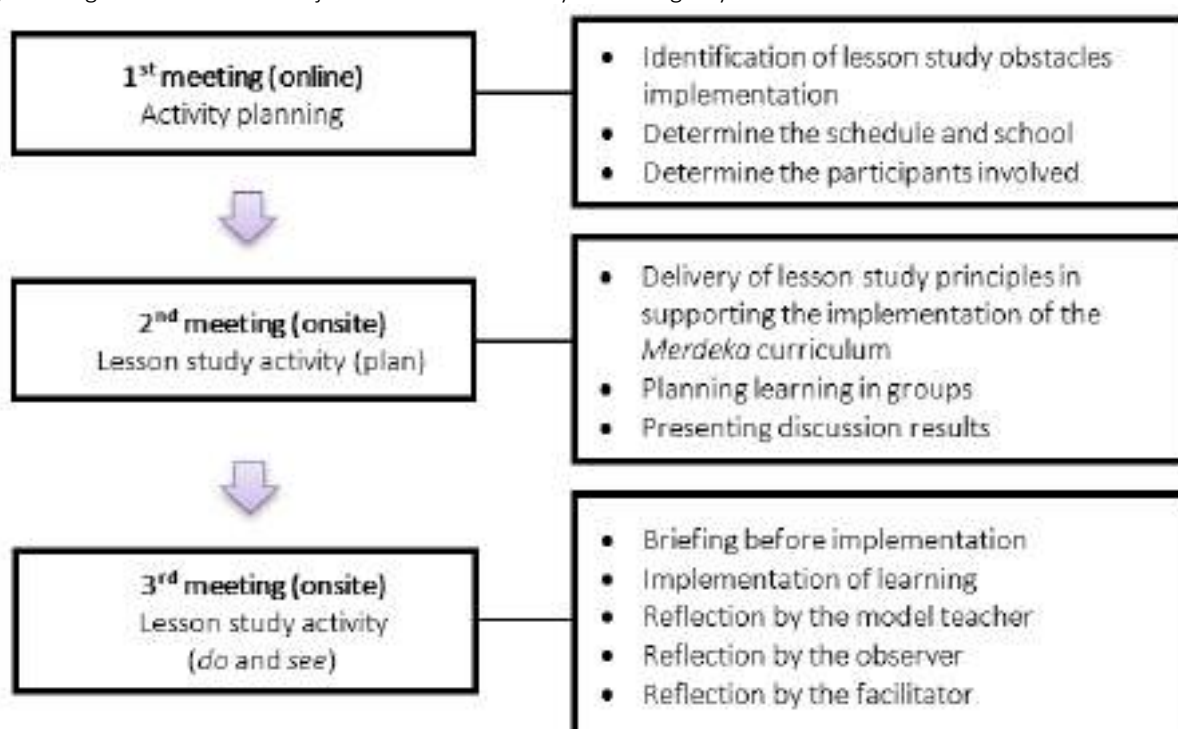


Figure 1. The flow of implementing subject-based lesson study activities

Lesson study activity consists of designing learning (plan) and implementing designed learning or research lesson (do and see) (Figure 1). The designing learning activity (plan) was carried out on November 9<sup>th</sup>, 2022. This activity consisted of conveying lesson study principles and techniques, forming groups of teachers, designing lesson plan in groups, and presenting the designed lesson plans from each group. Research lesson activity occurred on November 16<sup>th</sup>, 2022. This meeting consists of a briefing before the implementation of activities, learning and teaching in each class by each model teacher and observation of learning by each group member, delivery of reflections by the model teacher classically, reflection by observers led by the moderator in each group, and final reflection by the facilitator.

The data for this study were obtained from observations, field notes, and documentation of lesson study activity. The facilitator takes this data, which is distributed to several groups. The facilitator also acts as an observer in each class of learning implementation. At the end of the reflection activity, we gave a reflection questionnaire in the form of five open-ended questions to the teacher. This questionnaire is intended to find out teacher responses, impressions, constraints, and suggestions for implementing lesson study to support the implementation of the *Merdeka* Curriculum.

Data obtained from observations, field notes, and documentation is narrated collaboratively through Google Docs to describe events during the activity. Data interpretation is also carried out collaboratively to obtain valuable findings from implementing activities. In addition, the teacher's response to the questionnaire was coded. This activity is carried out to find the similarity response in the teacher's answers. Coding is done manually, inputted into a spreadsheet program.

## RESULTS AND DISCUSSION

In this section, we initially narrate the implementation of the subject-based lesson study activities and present the findings during the activity. The support for the implementation of the *Merdeka* Curriculum from the MGMP-based lesson study activities felt by the teacher obtained from the coding of the questionnaire results is presented in the reflection section. Finally, we discuss the findings obtained for the development of further studies.

The lesson study activities were implemented after obtaining an agreement on the place and schedule for implementing the activities between the facilitator and subject teacher community administrator as well as Malang City junior high school science teachers. Not all teacher community members can join in activities regarding pandemic condition and limited supported facilities. The teacher fills out an online willingness to participate form in the activities the administrators circulate. Participants in this activity amounted to 42 teachers.

### *Planning stage (plan)*

The implementation of lesson study begins with a planning agenda (plan). The activity began with an opening by the MGMP administrator. The facilitator conveys the purpose of the activity and directs participants to form heterogeneous groups for lesson planning. Four groups were formed with 10-11 members, who were science teachers from several junior high schools in Malang City. Each group, guided by the group leader, discusses determining the topic and lesson plan. The topic of learning is about Heat, adjusting to grade VII lesson which are known from science teacher who teaches at the school where the activity is carried out.

Each group agrees on the learning design and equipment needed. The teachers discuss the learning activities and collaboratively create teaching modules consisting of lesson plans and student worksheets. In addition, the media, tools and materials needed for the practicum were also discussed. Each group share their tasks in preparing learning.

The group representative conveys a designed lesson plan at the forum. Participants from other groups are allowed to respond. After the presentation, the discussion on the lesson plan continued online through the message groups for each group. The facilitator provides the suggestion needed from the lesson plan made by the teachers. Each group determines the materials, models and learning activities agreed upon by group members and the facilitators (**Table 1**). Discussion activities are continued through message groups to complete the learning design.

Table 1. The lesson plan for each group of teachers

Group/ Class	Teacher	Topic	Learning Model
I/7A	SNK, S.Pd.	Temperature, Heat, and Its Changes	<i>Discovery learning</i>
II/7B	VDN, S.Pd.	Heat Changes	<i>Discovery learning</i>
III/7C	FDH, S.Pd.	Heat Changes	Guided Inquiry
IV/7F	A, S.Pd.	Heat	Guided Inquiry

In planning activities (plan), we found some findings. Findings in planning activities emphasize on learning design. Some groups design teaching modules based on documents that have been made before. It causes not all teachers to discuss compiling and providing suggestions on lesson plans in groups. Several groups that designed learning from the beginning showed active discussion among group members. Discussions on improving teaching modules through online platforms have yet to be optimal. Discussions on online platforms focus more on providing tools and materials than on providing input on the design of teaching modules.

The teachers expect a recommended learning model. There are questions from the teacher regarding whether there is a specific learning model that is determined to be designed for learning. The facilitator said there was no specified learning model, but the learning design had to maximize students' thinking abilities to find concepts constructively. Depending on the features of the topic, each group of teachers is allowed to choose its learning model. The facilitator provides some suggestions on the teaching modules prepared by the teacher to carry out two-phase learning. The first phase is sharing tasks; the tasks aim to maximize student collaboration and encourage inclusive engagement, and the second phase is challenging tasks (jumping) to maximize students' thinking skills. The learning topic for each group is Heat. Overall, groups carry out practical learning that requires providing tools and materials. The teacher took the initiative to bring tools from their respective schools because of the limited practicum tools in the learning implementation school.

Not all teachers who participated in this lesson study activity had seen or carried out lesson study before. Therefore, it is essential to remind teachers of the fundamentals of putting lesson study into practice. Some teachers expect a standard observation sheet for learning observations. The facilitator explains that no standard observation sheet is given during the lesson.

### *Implementation stage (do)*

Based on the prepared lesson plan, the model teacher implements learning in a predetermined class. Other group members observing the learning process. Following the learning timetable, each model teacher and their group went into

a specified classroom. The model teacher introduced himself/herself at the beginning of the lesson and continued by giving trigger questions. Learning begins with questions and answers to know students' initial abilities and then continues with conducting experiments to obtain learning concepts (Table 2). The teacher designed the lesson as well as possible, but students had difficulty formulating heat equations based on experiments in class. Based on this finding, it is known that initial studies related to student abilities are critical as a reference in choosing material and emphasizing fundamental material.

Several findings were obtained related to observations made by teachers regarding the learning process. The initial briefing before the implementation of learning aims at refresh the essential principles of observation. It was carried out based on the teacher's request in the previous meeting. The facilitator provides a summary of the principles of implementing observation and reflection by the observer and the principle of conveying reflection by the model teacher. The observer teacher is free to observe student learning but still adheres to the principles of implementing the observations given. Observations emphasized focusing on one to two groups of students to find patterns of student to find patterns of student communication and group collaboration. In this way, the teacher's movements that might interfere with learning can be minimized.

The principle of carrying out observations given to teachers positively impacts the teacher's ability conduct observations. The absence of a standard observation sheet used by the teacher while observing learning makes the teacher more deeply record every student interaction in the learning process. The teacher observes students more deeply because they only make observations focused on target students in certain groups. Some teachers are proficient in making observations, but some still interact with students in learning. Observers were found to assist teachers in giving instructions to students because they saw students being confused after the teacher delivered instructions to students classically.

Table 2. Learning activities carried out by the teacher

Group/ Class	Learning Activity Objective(s)	Experimental Activities Conducted	Pancasila Students Profile
I/7A	Students able to: 1. Explain the relationship between the mass of the heated substance and the required heat. 2. Explain the relationship between changes in temperature and heat required. 3. Explain the relationship between the specific heat of a substance and the required heat.	Measure the temperature of the water and oil heated every minute using a thermometer, and calculate the temperature change.	Critical reasoning Collaboration Independent
II/7B	Learners able to: 1. Investigate the heat transfer by convection. 2. Investigate the heat transfer by conduction. 3. Investigate heat transfer by radiation	1. Observe the movement of the dye in the heated water. 2. Heating a spoon with a Bunsen burner. 3. Bring butter close to a burning Bunsen burner	Critical reasoning Collaboration Independent
III/7C	Learners able to: 1. Explain the concept of conduction. 2. Explain how the concept of heat transfer in conduction	Observe the changes in the plastered plasticine hanging in three positions at the same distance on the heated spoon handle.	Critical reasoning Collaboration Independent
IV/7F	Students can explain and apply the heat formula.	Measure the change in water temperature at the time of boiling and after being left for five minutes with different volumes of water.	Critical reasoning Collaboration Independent

#### Reflection stage (see)

Every model teacher is allowed to reflect of their own learning. Although the model teacher generally expresses that learning is proceeding well, they are not entirely satisfied with the learning that has been accomplished. The instructional

strategy did not successfully encourage students to develop their heat equations from their experimental work. On the other hand, teachers said that the experiments had helped the students comprehend the concept of heat transfer.

The moderator of each group provides an opportunity for group members to convey the results of learning observations that have been carried out. The teacher dares to express his opinion openly and reflects in depth. Some teachers have focused reflection on student learning activities, but some still focus on how the teacher's activities are when carrying out learning.

At the end of the reflection activity, the facilitator gives a questionnaire on the teacher's response to the lesson study activity in supporting the implementation of the *Merdeka* Curriculum, which has been carried out in one cycle. The questionnaire results revealed that all teachers (35 who filled out the questionnaire) who participated in the activity agreed that the lesson study could be conducted sustainably to support the implementation of the *Merdeka* Curriculum in collaboration. The results of the teacher's response to the implementation of the lesson study felt by the teacher are then presented in Table 3.

Table 3. Teacher's reflection on the lesson study activities that have been followed

Aspect of Reflection	Coding	Frequency (n=35)
The teacher's perspective on lesson study supports the <i>Merdeka</i> Curriculum implementation.	<i>Learning spaces</i>	
	New experiences and ideas in learning	23
	Learn through collaboration	6
	Get examples of teaching modules	3
	A valuable lesson in teaching	2
	Alternative learning strategy	1
	Learn from model teachers	1
	<i>Teaching skills improvement</i>	
	Improve teaching skills	16
	Increase engagement	7
Perceived Impression	Confidence	2
	Knowing the quality of learning	2
	Fun and meaningful	18
Perceived constraints	Very impressive	6
	Motivation in teaching	2
	Time length of activity	8
	Student characteristics	7
	Lack of preparation	4
	No constraint	3
	Lack of experiment tools and materials	3
Hope	Lack of class management	2
	School location	2
	Held again in another school	13
	Greater preparation	8
	More efficient activity time	8
	Held every semester	3
	Research lesson (do) in model teacher school	3
	More technical coaching	1
	Held outside of teaching hours	1
More participants	1	
Another model teacher	1	

Implementation of lesson study has been executed at the Malang City science subject teacher community forum to support the implementation of the *Merdeka* Curriculum. In lesson design activities (plan), teachers are allowed to design teaching modules based on documents that have been made or create utterly new teaching modules. This activity was conducted onsite at school and continued online through group messages. Designing learning collaboratively allows for a lot of input and ideas to improve the quality of learning design (Wake et al., 2016). However, there is a tendency for this way of designing learning activities to be dominated by only a few teachers (Rozimela, 2020). Designing through an online platform provides flexibility for lesson study, but the challenge is that not all teachers contribute actively (Weaver et al., 2021). Teachers design the lesson by themselves, and asking for suggestions informally from colleagues at school can be done to streamline planning activities (Saito et al., 2015), but the role of the facilitator remains crucial in emphasizing essential learning principles in teacher designs (Preciado-Babb & Liljedahl, 2012).



The facilitator does not recommend any learning model but still reminds the teachers to adhere to the principles of learning that provide meaningful learning experiences, emphasize empowering thinking skills, and increase active student involvement. Allowing teachers to design their own learning according to the principle of independent learning increases teacher creativity (Sutrisno & Yulia, 2022). The designed lesson plans can be discussed with colleagues and facilitators to ensure that the learning principles are followed (Preciado-Babb & Liljedahl, 2012; Saito et al., 2015). In this way, the teacher's agency is acknowledged (Lieberman, 2009), the teacher's ability to design learning is trained (Preciado-Babb & Liljedahl, 2012), and the learning rights of each student are fulfilled (Schoenfeld et al., 2019).

It is necessary to remind the principles of lesson study when reinitiating the implementation of lesson study to strengthen the principles of implementing lesson study. The principle of lesson study that is done well can provide valuable lessons for improving the quality of learning and student learning outcomes (Klammer & Hanfstingl, 2019). On the other hand, lesson study principles that are not appropriately implemented can disrupt learning activities (Setyawan et al., 2019). Continuous implementation, followed by strengthening the principles of implementing lesson study, provides teachers with an understanding of the practice and essence of lesson study (Budiyanto et al., 2021).

In learning implementation activities (do), the teachers do not use an observation sheet that contains standard questions. Teachers are allowed to make their observation way but still adhere to the principle of carrying out observations. Performing observation with un-predetermined questions and focusing on one to two groups of students allows the teacher to record communication and interactions between students during the learning process (Warwick et al., 2016). In this way, the teacher can investigate students who are less involved in learning and start thinking about why this happens (Schoenfeld et al., 2019). These findings can be used as consideration for in-depth reflection by observers to improve further learning designs (Warwick et al., 2016).

Observers have focused on student learning in reflection, but observers are still found to correct teacher behavior. Reflection focusing on student learning activities in depth will reveal the factors that lead to success or cause student failure in learning (Widjaja et al., 2017). This insight is essential for teachers to know to improve future learning designs. Reflection that corrects teacher behavior causes the teacher to feel pressured and blamed, which can lead to decreased teacher motivation (Myers, 2012). In addition, reflections that tend to judge teachers cause teachers who act as observers to appear more competent and skilled than teachers who have dared to appear to teach in front of the class (Saito et al., 2015).

Teachers state that lesson study can support the implementation of the *Merdeka* curriculum as a forum for teachers to learn from one another and enhance their teaching skills. Evidence from previous studies also shows that the implementation of lesson study can facilitate teachers collaboratively designing learning objectives flow (*Alur Tujuan Pembelajaran*) (Purwasih et al., 2023) and designing and conducting learning (Numertayasa et al., 2023) especially with differentiated approach project-based learning (Amrilizia et al., 2023). Designing learning together, conducting research lessons, and conveying findings during reflection activities allows teachers to gain in-depth insight into the effectiveness of learning designs that have been made to improve student learning (Amrilizia et al., 2023; Susetyarini et al., 2021). In addition, teachers who act as model teachers develop their self-confidence, and open up teaching privatization towards more transparent learning, ultimately improving teaching skills through continuous improvement.

Teachers feel more involved in the community with lesson study activities. It makes some teachers encouraged in doing lesson study at their school. Almost all teachers show a positive impression of the implementation of lesson study. Teachers stated that the lesson study they participated in was fun and meaningful, so it motivated their teaching. Some evidence shows that present community activities tend to be passive, only focusing on completing administrative tasks (Rasuna, 2022). On the other hand, teachers who are members of the subject teacher community need activities that can further improve their skills (Burhanuddin et al., 2023). Lesson study in the subject teacher community allows teachers to actively improve their competence collaboratively (Susetyarini et al., 2021). Lesson study that is carried out continuously forms a professional learning community called lesson study for learning community (Saito et al., 2015). These activities give a meaningful impression to teachers, motivating them to improve their teaching because teachers have a place to learn from each other and share collaboratively (Salasiah et al., 2023).

Teachers reported several obstacles and expectations to be considered in future subject-based lesson study. A standard schedule at the beginning of the semester needs to be set related to dealing with the school of implementation place and the model teacher who acts. In this way, teachers can prepare early even though the learning planning and implementation schedules are close together (Setyawan et al., 2019). We argue that the place for implementing lesson study can be carried out in the teacher's school model and in the teacher model's classroom teaching so that the constraints on the place of implementation, the support of tools and materials, as well as problems related to student characteristics can be overcome.

In addition, it is impossible to facilitate all teacher in the community to participate in lesson study activities at once if there are many members. In this case, it is necessary to determine subgroups based on the closest area between the lesson study implementation school and the observing teacher. Teachers outside the region may become involved voluntarily. In addition, it is necessary to align the teaching schedule at school and the schedule for opening classes to avoid interfering with the teacher's primary task. As suggested Saito et al. (Saito et al., 2015), lesson design can be carried out by the model teacher and her/his colleagues at school so that the observer teacher is only involved in the research

lesson (do and see) sessions. In this way, lesson study activities can be carried out to form a voluntary teacher-professional learning culture towards sustainable lesson study for learning communities.

## CONCLUSION

Junior High School Science teachers in Malang City actively and enthusiastically participated in implementing the subject-based lesson study. Teachers reported on the implementation of lesson study supporting the implementation of the *Merdeka* Curriculum as a forum for mutual learning and improving teaching skills. Implementation on an ongoing basis, accompanied by strengthening the principles of implementing lesson study, and expanding the study is needed. The constraints and expectations expressed by teachers in this study can be considered for designing subject-based lesson study activity models in supporting *Merdeka* Curriculum in the future.

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## REFERENCES

- Amrilizia, N., Dewi, N. K., & Ratnawati, S. (2023). Peningkatan hasil belajar siswa kelas VII menggunakan model project based learning (PjBL) dengan strategi diferensiasi melalui metode lesson study pada topik Bumi dan Tata Surya. *Seminar Nasional Sosial Sains, Pendidikan, Humaniora (SENASSDRA)*, 2(2), 107–120. <http://prosiding.unipma.ac.id/index.php/SENASSDRA/article/view/4206>
- Anggraena, Y., Felicia, N., Ginanto, D. E., Pratiwi, I., Utama, B., Alhapi, L., & Widiawati, D. (2022). *Kajian akademik kurikulum untuk pemulihan pembelajaran* (p. 123). Badan Standar, Kurikulum, dan Asesmen Pendidikan Kemdikbudristek RI. <https://repositori.kemdikbud.go.id/24972/>
- Aulia, E. V., Widodo, W., Subekti, H., Hidayati, S. N., & Sari, D. P. (2022). Pelatihan pembuatan media powerpoint interaktif berbasis project based learning bagi guru IPA SMP. *JMM (Jurnal Masyarakat Mandiri)*, 6(6), 4700–4713. <https://doi.org/10.31764/jmm.v6i6.11076>
- Azmi, F., & Iswanto, J. (2021). Merdeka belajar. *International Journal of Islamic Education, Research and Multiculturalism (IJIERM)*, 3(3), 157–171. <https://doi.org/10.47006/ijierm.v3i3.90>
- Bengtsson, S., Kamanda, M., Ailwood, J., & Barakat, B. (2020). Teachers are more than ‘supply’: Toward meaningful measurement of pedagogy and teachers in SDG 4. In A. Wulff (Ed.), *Grading goal four: Tensions, threats, and opportunities in the sustainable development goal on quality education* (p. 498). <https://library.oapen.org/bitstream/handle/20.500.12657/53875/1/9789004430365.pdf#page=241>
- Budiyanto, M. A. K., Rahardjanto, A., Hadi, S., & Husamah, H. (2021). Sustainability of lesson study on the lesson study for learning community (LSC) program in Batu City East Java Province. *Journal of Education Research and Evaluation*, 5(1), 41. <https://doi.org/10.23887/jere.v5i1.31616>
- Bungai, J., Debora, D., & Haryono, A. (2019). Teacher’s performance in lesson study through experimental method of the lesson on science subject. *Proceedings of the 5th UPI International Conference on Technical and Vocational Education and Training (ICTVET 2018)*, 299(74), 400–404. <https://doi.org/10.2991/ictvet-18.2019.91>
- Burhanuddin, B., Muntari, M., Loka, I. N., Sofia, B. F. D., & Idrus, S. W. Al. (2023). Pendampingan penyusunan perangkat pembelajaran berbasis proyek melalui lesson study. *Jurnal Pengabdian Inovasi Masyarakat Indonesia*, 2(1), 47–52. <https://doi.org/10.29303/jpimi.v2i1.2288>
- Chamisijatin, L., & Zaenab, S. (2022). Penguatan pendidikan karakter berbasis literasi melalui pendampingan lesson study di SMP Muhammadiyah 02 Kota Batu. *Lumbang Inovasi: Jurnal Pengabdian Kepada Masyarakat*, 7(1), 10–24. <https://doi.org/10.36312/linov.v7i1.633>
- Cheung, W. M., & Wong, W. Y. (2014). Does lesson study work? : A systematic review on the effects of lesson study and learning study on teachers and students. *International Journal for Lesson and Learning Studies*, 3(2), 137–149. <https://doi.org/10.1108/IJLLS-05-2013-0024>
- Direktorat Jenderal Guru dan Tenaga Pendidikan. (2020). *Buku pegangan pendidikan guru penggerak*. Kementerian Pendidikan dan Kebudayaan. [https://cdn-gbelajar.simpkb.id/s3/p3k/PGP 2022/Lokakarya/Rencana Moderasi Lokakarya 1.pdf](https://cdn-gbelajar.simpkb.id/s3/p3k/PGP%2022/Lokakarya/Rencana%20Moderasi%20Lokakarya%201.pdf)
- Fauzi, A. (2022). Implementasi Kurikulum Merdeka di sekolah penggerak (studi kasus pada SMAN 1 Pengaron Kabupaten Banjar). *Jurnal Pahlawan*, 18(2), 18–22. <https://doi.org/10.57216/pah.v18i2.480>
- Gómez, E. S., Núñez, M. J. S., Gómez, A. I. P., & Trapero, N. P. T. (2015). Lesson study and the development of teacher’s competences. *International Journal for Lesson and Learning Studies*, 4(3), 209–223. <https://doi.org/10.1108/ijlls-09-2014-0034>
- Hajar, M. U., & Hendayana, S. (2019). Lesson study as a means of transforming classroom discourse and student

- cognitive engagement in science classroom. *Journal of Physics: Conference Series*, 1157(022050).  
<https://doi.org/10.1088/1742-6596/1157/2/022050>
- Hasanah, E., Suyatno, S., Maryani, I., Badar, M. I. Al, Fitria, Y., & Patmasari, L. (2022). Conceptual model of differentiated-instruction (DI) based on teachers' experiences in Indonesia. *Education Sciences*, 12(10), 1–17.  
<https://doi.org/10.3390/educsci12100650>
- Irvani, A. I., Ainissyifa, H., & Anwar, A. K. (2023). In house training (IHT) implementasi Kurikulum Merdeka di komite pembelajaran sebagai komunitas praktisi sekolah penggerak. *JPM: Jurnal Pengabdian Masyarakat*, 2(1), 160–166.  
<https://doi.org/10.52434/jpm.v2i1.2481>
- Kemdikbudristek. (2023a). *Guru belajar & berbagi: Semangat guru belajar & berbagi, semangat guru Indonesia*.  
<https://gtk.kemdikbud.go.id/read-news/semangat-guru-belajar-berbagi-semangat-guru-indonesia>
- Kemdikbudristek. (2023b). *Platform merdeka mengajar*. <https://guru.kemdikbud.go.id/>
- Khery, Y., Nufidaa, B. A., Ahzan, S., Efendi, I., Megapratwi, F. I., Dasna, I. W., & Hidayati, Y. (2022). Pelatihan PTK dengan model pembelajaran proyek dan blended learning untuk percepatan implementasi Kurikulum Merdeka dan peningkatan kinerja guru. *Lambung Inovasi: Jurnal Pengabdian Kepada Masyarakat*, 7(4), 681–689.  
<https://doi.org/10.36312/linov.v7i4.914>
- Klammer, S., & Hanfstingl, B. (2019). A first time lesson study that turned into a learning study. *International Journal for Lesson and Learning Studies*, 8(4), 305–319. <https://doi.org/10.1108/IJLLS-04-2019-0029>
- Krismiati, N., & Fernandes, R. (2020). Peran MGMP dalam pengembangan desain pembelajaran di era revolusi industri 4.0. *Jurnal Perspektif: Kajian Sosiologi Dan Pendidikan*, 3(2), 287–294.  
<https://doi.org/10.24036/perspektif.v3i2.252>
- Kusanagi, K. N. (2022). Teacher professional development in Indonesia: issues and challenges. In *Lesson study as pedagogic transfer, education in the Asia-Pacific Region: issues, concerns and prospects 69* (pp. 67–80). Springer.  
[https://doi.org/10.1007/978-981-19-5928-8\\_4](https://doi.org/10.1007/978-981-19-5928-8_4)
- Lestari, N., Permatasari, R., Evelin, E., Haryadi, E. F., & Apsari, N. (2023). Kepuasan peserta pelatihan implementasi Kurikulum Merdeka pada mata pelajaran IPA/FISIKA. *Community Development Journal*, 4(2), 3903–3908.  
<https://doi.org/https://doi.org/10.31004/cdj.v4i2.15017>
- Lieberman, J. (2009). Reinventing teacher professional norms and identities: The role of lesson study and learning communities. *Professional Development in Education*, 35(1), 83–99.  
<https://doi.org/10.1080/13674580802264688>
- Mahdiannur, M. A., Erman, E., Martini, M., Nurita, T., Rosdiana, L., & Qosyim, Q. (2022). Pendampingan pengembangan modul ajar berdiferensiasi untuk guru mata pelajaran IPA SMP-sederajat berorientasi ESD. *BERNAS: Jurnal Pengabdian Kepada Masyarakat*, Vol. 3 No.(4), 801–808. <https://doi.org/10.31949/jb.v3i4.3409>
- Mustapa, K., Suciati, I., Nursupiamin, N., Mailili, W. H., & Hajerina, H. (2024). Impact of implementing the competency-based Merdeka Curriculum in secondary education on enhancing 21st century skills and meeting the demands of the competitive job market. *International Journal of Teaching and Learning (INJOTEL)*, 2(1), 165–178.  
<https://injotel.org/index.php/12/article/view/58/85>
- Mustika, D., & Hasby, H. (2022). Pelatihan integrasi STEM dalam pembelajaran pada kelompok MGMP Fisika SMA Kota Langsa. *Abdi: Jurnal Pengabdian Dan Pengabdian Masyarakat*, 4(2013), 426–432.  
<https://doi.org/10.24036/abdi.v4i2.350>
- Myers, J. (2012). The effects of lesson study on classroom observations and perceptions of lesson effectiveness. *The Journal of Effective Teaching*, 12(3), 94–104. <https://files.eric.ed.gov/fulltext/EJ1092112.pdf>
- Ni'mah, F., Syarpin, S., Fatah, A. H., Alda, A., & Pasha, M. N. (2023). Pembelajaran kimia berbasis proyek melalui pemanfaatan sumber daya lokal sebagai upaya implementasi Kurikulum Merdeka bagi guru MGMP Kimia Kota Palangka Raya. *Bubungan Tinggi: Jurnal Pengabdian Masyarakat*, 5(2), 736–743.  
<https://doi.org/10.20527/btjpm.v5i2.7305>
- Numertayasa, I. W., Kusuma, I. K. N., & Rediasa, I. G. A. (2023). Persepsi guru terhadap pelaksanaan lesson study di SD Negeri 6 Pempatan. *Pendas: Jurnal Ilmiah Pendidikan Dasar*, 8(1), 4738–4747.  
<https://doi.org/10.23969/jp.v8i1.7580>
- Preciado-Babb, A. P., & Liljedahl, P. (2012). Three cases of teachers' collaborative design: perspectives from those involved. *Canadian Journal of Science, Mathematics and Technology Education*, 12(1), 22–35.  
<https://doi.org/10.1080/14926156.2012.649052>
- Purwasih, J. H. G., Pratiwi, S. S., & Meiji, N. H. P. (2023). Pelatihan penguatan materi esensial Kurikulum Merdeka untuk MGMP Sosiologi Madrasah Aliyah Se-Kabupaten Malang. *GERVASI: Jurnal Pengabdian Kepada Masyarakat*, 7(2), 718–730. <https://doi.org/10.31571/gervasi.v7i2.5776>
- Purwono, H. (2021). *Rekam jejak guru penggerak* (p. 6).  
[https://www.ninikpsmalang.net/download/file/REKAM\\_JEJAK\\_GURU\\_PENGGERAK\\_12\\_EDISI\\_BUKU.pdf](https://www.ninikpsmalang.net/download/file/REKAM_JEJAK_GURU_PENGGERAK_12_EDISI_BUKU.pdf)
- Rasuna, R. (2022). Pembinaan guru melalui kegiatan musyawarah guru mata pelajaran untuk meningkatkan mutu pembelajaran SMP Negeri di Kota Banjarmasin tahun pelajaran 2021/2022. *Jurnal JUMPED (Jurnal Manajemen Pendidikan)*, 10(2), 161–171. <https://doi.org/10.31258/jmp.10.2.p.161-172>

- Rohimat, S., & Najarudin, N. (2022). Webinar strategi penyelesaian pelatihan mandiri Kurikulum Merdeka pada platform Merdeka Mengajar. *Jurnal Abdimas Kartika Wijayakusuma*, 3(2), 94–102. <https://doi.org/10.26874/jakw.v3i2.251>
- Rosmiati, R., Anwar, C., & Firdos, H. (2023). Implementasi Kurikulum Merdeka dalam pembelajaran matematika di kelas VII SMP Negeri 3 Kota Serang. *Proximal: Jurnal Penelitian Matematika Dan Pendidikan Matematika*, 6(2), 132–140. <https://doi.org/10.30605/proximal.v6i2.2752>
- Rozimela, Y. (2020). Developing teachers' professionalism through school initiative-based lesson study. *European Journal of Educational Research*, 9(4), 1513–1526. <https://doi.org/10.12973/eu-jer.9.4.1513>
- Saito, E., & Atencio, M. (2015). Lesson study for learning community (LSLC): Conceptualising teachers' practices within a social justice perspective. *Discourse: Studies in the Cultural Politics of Education*, 36(6), 795–807. <https://doi.org/10.1080/01596306.2014.968095>
- Saito, E., Harun, I., Kuboki, I., & Tachibana, H. (2006). Indonesian lesson study in practice: Case study of Indonesian mathematics and science teacher education project. *Journal of In-Service Education*, 32(2), 171–184. <https://doi.org/10.1080/13674580600650872>
- Saito, E., Murase, M., Tsukui, A., & Yeo, J. (2015). *Lesson study for learning community: A guide to sustainable school reform*. Routledge. <https://www.routledge.com/Lesson-Study-for-Learning-Community-A-guide-to-sustainable-school-reform/Saito-Murase-Tsukui-Yeo/p/book/9780415843171>
- Salasiah, S., Haryono, A., & Supriyati, W. (2023). Pengembangan perangkat pembelajaran IPA berbasis lesson study untuk meningkatkan kolaborasi guru dan kemampuan berpikir. *Jurnal Binomia*, 6(1), 2657–2184. <https://doi.org/10.46918/bn.v6i1.1728>
- Sari, A., Suryadi, D., & Syaodih, E. (2018). A professional learning community model: A case study of primary teachers community in west Bandung. *Journal of Physics: Conference Series*, 1013(1). <https://doi.org/10.1088/1742-6596/1013/1/012122>
- Sari, D. A. P., Fauziah, A. N. M., Astriani, D., Susiyawati, E., & Mursyidah, R. W. (2023). Pelatihan penyusunan lembar kerja peserta didik berbasis project-based learning untuk guru IPA Kabupaten Magetan. *BERNAS: Jurnal Pengabdian Kepada Masyarakat*, 4(1), 647–658. <https://doi.org/10.31949/jb.v4i1.4192>
- Sari, D. M., Maulida, F., Puspita, J., & Khoirunnisa, N. (2021). A literature review of the implementation of differentiated learning in Indonesian education units. *Jurnal Ilmiah Pendidikan Fisika*, 7(2), 250–264. <https://doi.org/10.20527/jjpf.v7i2.8429>
- Satriawan, W., Santika, I. D., & Naim, A. (2021). Guru penggerak dan transformasi sekolah. *Al-Idarah: Jurnal Kependidikan Islam*, 11(1), 1–12. <https://doi.org/10.24042/alidarrah.v11i1.7633>
- Schoenfeld, A., Dosalmas, A., Fink, H., Sayavedra, A., Tran, K., Weltman, A., Zarkh, A., & Zuniga-Ruiz, S. (2019). Teaching for robust understanding with lesson study. In R. Huang, A. Takahashi, & J. P. da Ponte (Eds.), *Theory and Practice of Lesson Study in Mathematics. Advances in Mathematics Education* (pp. 135–159). Springer, Cham. [https://doi.org/10.1007/978-3-030-04031-4\\_7](https://doi.org/10.1007/978-3-030-04031-4_7)
- Setiyaningsih, S., & Wiryanto, W. (2022). Peran guru sebagai aplikator Profil Pelajar Pancasila dalam Kurikulum Merdeka Belajar. *Jurnal Ilmiah Mandala Education*, 8(4), 3041–3052. <https://doi.org/10.58258/jime.v8i4.4095>
- Setyawan, D., Permana, T., & Latifa, R. (2019). Lesson study for learning community: A way of collegial participation of teachers and lecturers. *Bioedukatika*, 7(1), 1–10. <https://doi.org/10.26555/bioedukatika.v7i1.11936>
- Shanmugam, S. K. S., Chinnappan, M., & Leong, K. E. (2020). Action research in examining the enquiry approach of lesson study in mathematics. *Pertanika Journal of Social Sciences and Humanities*, 28(3), 1675–1693. [http://www.pertanika.upm.edu.my/resources/files/Pertanika PAPERS/JSSH Vol. 28 \(3\) Sep. 2020/05 JSSH-4813-2019.pdf](http://www.pertanika.upm.edu.my/resources/files/Pertanika%20PAPERS/JSSH%20Vol.%2028%20(3)%20Sep.%202020/05%20JSSH-4813-2019.pdf)
- Sihombing, A. A., Anugrahsari, S., Parlina, N., & Kusumastuti, Y. S. (2021). Merdeka belajar in an online learning during the Covid-19 outbreak: Concept and implementation. *Asian Journal of University Education*, 17(4), 35–48. <https://doi.org/10.24191/ajue.v17i4.16207>
- Simamora, R. M., & Pasaribu, D. (2023). Education should embrace all potential: students' reflective essays on the meaning of Merdeka Belajar. *Studies in Learning and Teaching*, 4(1), 68–87. <https://doi.org/10.46627/silet.v4i1.200>
- Suratno, T. (2012). Lesson study in Indonesia: An Indonesia University of Education experience. *International Journal for Lesson and Learning Studies*, 1(3), 196–215. <https://doi.org/10.1108/20468251211256410>
- Susetyarini, E., Rofieq, A., & Latifa, R. (2021). Pendampingan lesson study for learning community sebagai perwujudan merdeka belajar di SMA Muhammadiyah Kepanjen Kabupaten Malang. *Jurnal Abdimas (Journal of Community Service): Sasambo*, 3(3), 138–148. <https://doi.org/10.36312/sasambo.v3i3.535>
- Susilo, H. (2013). Lesson study sebagai sarana meningkatkan kompetensi pendidik. *Seminar Dan Lokakarya PLEASE*, 1–32. <https://sttaetheia.ac.id/wp-content/uploads/2013/07/Lesson-Study-Sebagai-Sarana-Meningkatkan-Kompetensi-Pendidik-herawati.pdf>
- Susilo, H., Chotimah, H., Joharmawan, R., Jumiati, J., Sari, Y. D., & Sunarjo, S. (2011). *Lesson study berbasis sekolah: (guru konservatif menuju guru inovatif)* (S. Wahyudi (ed.); 3rd ed.). Bayumedia Publishing. [https://books.google.co.id/books/about/Lesson\\_Study\\_Berbasis\\_Sekolah.html?id=LapZEAAAQBAJ&redir\\_esc=y](https://books.google.co.id/books/about/Lesson_Study_Berbasis_Sekolah.html?id=LapZEAAAQBAJ&redir_esc=y)

- Sutrisno, S., & Yulia, N. M. (2022). Pengembangan kompetensi guru dalam mendesain pembelajaran pada Kurikulum Merdeka. *Journal AL-MUDARRIS*, 5(1), 30. <https://doi.org/10.32478/al-mudarris.v5i1.954>
- Wake, G., Swan, M., & Foster, C. (2016). Professional learning through the collaborative design of problem-solving lessons. *Journal of Mathematics Teacher Education*, 19(2–3), 243–260. <https://doi.org/10.1007/s10857-015-9332-9>
- Warwick, P., Vrikki, M., Vermunt, J. D., Mercer, N., & van Halem, N. (2016). Connecting observations of student and teacher learning: An examination of dialogic processes in lesson study discussions in mathematics. *ZDM*, 48(4), 555–569. <https://doi.org/10.1007/s11858-015-0750-z>
- Weaver, J. C., Matney, G., Goedde, A. M., Nadler, J. R., & Patterson, N. (2021). Digital tools to promote remote lesson study. *International Journal for Lesson & Learning Studies*, 10(2), 187–201. <https://doi.org/10.1108/IJLLS-09-2020-0072>
- Widjaja, W., Vale, C., Groves, S., & Doig, B. (2017). Teachers' professional growth through engagement with lesson study. *Journal of Mathematics Teacher Education*, 20(4), 357–383. <https://doi.org/10.1007/s10857-015-9341-8>
- Wild, A., Galosy, J., Kagle, M., Gillespie, N., & Rozelle, J. (2018). Teacher agency over curriculum and professional learning: lock-step. *Journal of Professional Capital and Community*, 3(4), 306–320. <https://doi.org/10.1108/JPC-12-2017-0034>
- Willems, I., & Van den Bossche, P. (2019). Lesson study effectiveness for teachers' professional learning: A best evidence synthesis. *International Journal for Lesson and Learning Studies*, 8(4), 257–271. <https://doi.org/10.1108/IJLLS-04-2019-0031>
- Yoshida, K. (2020). Roles of teachers in the SDG4 age: An introductory note. *Journal of International Cooperation in Education*, 22(2), 7–14. <https://teachertaskforce.org/sites/default/files/2021-02/2.Yoshida.pdf>



# Effectiveness of the implementation of service retribution collection at the Parungkuda semi-modern market, Sukabumi Regency

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ARTICLE INFO	ABSTRACT
<p><b>Article history</b> Received: 2024-02-15 Revised: 2024-02-18 Accepted: 2024-03-18 Published: 2024-03-28</p> <p><b>Keywords</b> Effectiveness of implementation Service retribution collection Semi-Modern Market</p>	<p><i>Parungkuda Semi Modern Market is one of the government facilities used by traders. There are 600 traders who use the market facilities, and are obliged to pay market levies. The aim of this research is to prove the effectiveness of the implementation of collecting market service levies in the Parungkuda semi-modern market, Sukabumi Regency. This research uses descriptive qualitative methods. Parungkuda Semi-Modern Market is a market that is used as the unit of analysis and researchers determine key informants, including the Parungkuda Market UPT coordinator, assistant treasurer, collectors and market traders. The data collection techniques used in this research are through participant observation, interviews and documentation. To test the validation of the information data that has been collected, researchers use a credibility test through a triangulation process. The results of this research indicate that the implementation of service levy collection at the Parungkuda Semi-Modern Market, Sukabumi Regency, has a high level of effectiveness. Several factors that support this effectiveness include a good management system, active participation from traders and market visitors, as well as strict supervision of the levy collection process. Thus, it can be concluded that the implementation of service levy collection in the market is running well and effectively.</i></p>
<p><b>Kata kunci</b> Efektivitas Pelaksanaan, Pemungutan Retribusi Pelayanan, Pasar Semi Moderen</p>	<p><b>Efektivitas pelaksanaan pemungutan retribusi pelayanan di pasar semi modern Parungkuda Kabupaten Sukabumi.</b> Pasar Semi Modern Parungkuda merupakan salah satu fasilitas pemerintah yang digunakan oleh pedagang. Terdapat 600 pedagang yang menggunakan fasilitas pasar tersebut, dan berkewajiban membayar retribusi pasar.. Tujuan yang ingin dibuktikan dari penelitian ini yaitu bagaimana efektivitas pelaksanaan pemungutan retribusi pelayanan pasar di pasar semi moderen Parungkuda Kabupaten Sukabumi. Penelitian ini menggunakan metode kualitatif deskriptif. Pasar Semi Modern Parungkuda merupakan pasar yang dijadikan sebagai unit analisis dan peneliti menentukan informan kunci (key informan) antara lain koordinator UPT Pasar Parungkuda, bendahara pembantu, petugas pemungut, dan pedagang pasar. Teknik pengumpulan data yang digunakan dalam penelitian ini adalah melalui observasi partisipatif, wawancara, dan dokumentasi. Untuk menguji validasi data informasi yang sudah terkumpul peneliti melakukan dengan menggunakan uji kredibilitas melalui proses triangulasi. Hasil penelitian ini menunjukkan bahwa pelaksanaan pemungutan retribusi pelayanan di Pasar Semi Modern Parungkuda, Kabupaten Sukabumi, memiliki tingkat efektivitas yang tinggi. Beberapa faktor yang mendukung efektivitas tersebut antara lain adalah sistem pengelolaan yang baik, partisipasi aktif dari para pedagang dan pengunjung pasar, serta adanya pengawasan yang ketat terhadap proses pemungutan retribusi. Dengan demikian, dapat disimpulkan bahwa pelaksanaan pemungutan retribusi pelayanan di pasar tersebut berjalan dengan baik dan efektif.</p>

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## INTRODUCTION

The market is one of the tangible manifestations of community economic activity in an area. In simple terms, a market is a physical place where buying and selling transactions carried out by sellers and buyers occur at a certain time and place (Qolbi et al., 2023); (Hakim et al., 2023); (Artanti et al., 2022). The market is a forum for community activities in conducting trade (Ratnasabapathy et al., 2021); (Guha et al., 2021); (Hoekman & Sabel, 2021). Until now, the market is considered the basic foundation of the economy in a region and is a reflection of the people's economy (Suryokumoro & Ula, 2020); (Zhang et al., 2021); (Williams, 2021); (Saleh et al., 2020); (Velenturf & Purnell, 2021).

The Semi-Modern Market of Parungkuda, situated in Sukabumi Regency, West Java Province, Indonesia is one of the government facilities used by traders. According to data, there are 600 traders utilizing the market facilities, meaning that traders using these facilities are obliged to pay market levies. In the implementation of market levy collection, there are inevitably factors and problems that affect the effectiveness of the collection, which in turn impacts the collection results and the achievement of the market levies submitted.

The Semi-Modern Market of Parungkuda conducts levy collection every day, managed by 6 personnel. The collection is divided into 6 blocks, namely: the first officer handles blocks A-B, the second officer handles blocks C-D, the third officer handles blocks E-F, the fourth officer handles blocks G-H, the fifth officer handles blocks I-J, and the sixth officer handles blocks K-L.

These collection officers are non-governmental employees employed because the number of civil servants in the Parungkuda Market Implementing Technical Unit is limited. In assessing the effectiveness of levy collection carried out by collection officers, it's necessary to consider whether the collection process runs effectively or not. Effectiveness can be measured by examining the results achieved by an organization. It can be measured by whether or not an organization achieves its goals. If an organization successfully achieves its goals, it can be said to be operating effectively.

Effectiveness is the relationship between output and goals or can also be seen as a measure of how far an organization's output, policies, and procedures align with its objectives (Abadi et al., 2021). Effectiveness is also related to the degree of success of an operation in the public sector, so an activity is considered effective if it significantly impacts the ability to provide services to the community, which is the predefined target (Kumpangpune et al., 2019); (Bruno et al., 2020); (Ali AlShehail et al., 2022).

The research findings presented data regarding the extent of levy collection conducted by designated officers and aimed to pinpoint the various challenges prevailing in the field. Through direct observation and interviews with multiple officers, traders, as well as market leaders or managers, the author gathered precise information and data. Ultimately, comprehensive data on the actualization of market levy collections carried out by officers and remitted to the local treasury from 2017 to 2021 were acquired. The data revealed a fluctuating trend, with collection rates reaching 88% in 2017, 93.33% in 2018, 84.66% in 2019, 85.21% in 2020, and 92.66% in 2021. Analyzing the market levy collection achievements, it becomes evident that the implementation of levy collection by officers falls short of the predetermined targets. Initial observations uncovered issues related to the effectiveness of market levy collection services, including traders paying for one stall despite owning three, leading to suboptimal revenue collection and unmet targets. Additionally, officers face challenges in managing collection timing, as some traders delay selling goods until late afternoon, thereby affecting overall collection outcomes (Author, 2024).

To improve the effectiveness of levy collection, collection officers need to optimize their collection practices to ensure that the objectives of market levy collection are achieved. Considering the factors affecting the effectiveness of levy collection mentioned above, the author is interested in conducting research with the title "The Effectiveness of Semi-Modern Market Levy Collection Implementation".

Judging from the focus of research and the main research questions above, the objectives to be proven from this research are to find out how the Effectiveness of the Implementation of Collecting Market Service Levies at the Parungkuda Semi-Modern Market, Sukabumi Regency.

The market serves as a vital arena for economic activity within communities, facilitating trade and commerce. However, challenges persist in the effectiveness of levy collection at the Parungkuda Semi-Modern Market in Sukabumi Regency. To address these challenges and enhance levy collection effectiveness, this research endeavors to investigate "The Effectiveness of Semi-Modern Market Levy Collection Implementation." Reflecting on previous studies related to public service fee collection, key insights emerge. Hariandja & Suphia (2019) explored social security assurance for the impoverished, emphasizing the need for proactive measures to enhance healthcare accessibility. Lamia et al., (2015) assessed the efficacy of restaurant taxes, advertising taxes, and street lighting taxes, highlighting revenue diversification's significance. Harahap & Wicaksono (2016) investigated market service fee collection policies, revealing operational challenges and the need for strategic policy adjustments. Building upon these insights, this research aims to pioneer a nuanced understanding of levy collection dynamics at the Parungkuda Semi-Modern Market. By elucidating existing limitations and proposing innovative strategies, this study seeks to contribute to the advancement of effective market levy collection practices. In conclusion, this paper endeavors to bridge the gap between theoretical insights and practical challenges in market levy collection, fostering a more efficient and responsive revenue collection framework. The aim of

this research is to find out how effective the implementation of market service levy collection is at the Parungkuda Semi-Modern Market, Sukabumi Regency.

Furthermore, the research aims to align with the Sustainable Development Goals (SDGs) by ensuring its activities have measurable results and impacts on society. By linking each aspect of the research to specific SDG goals and targets, the study aims to support the broader global action plan to end poverty, reduce inequality, and protect the environment (Kementerian PPN/ Bappenas, 2020).

## METHOD

This research uses a qualitative research approach, in a qualitative approach has several approaches so that in this study researchers used descriptive methods. In this study, the Parungkuda Semi-Modern Market is a market that is used as a unit of analysis with a study of the Effectiveness of Collecting Market Service Levies at the Parungkuda Semi-Modern Market, Sukabumi Regency. Based on the information provided, a total of 6 informants were interviewed for the research. Each informant belonged to a specific category within the context of the research. The research involved interviews with six key informants representing various roles within the context of the Parungkuda Semi-Modern Market in Sukabumi Regency. These informants comprised the Head of the Parungkuda Market Technical Implementation Unit, an Assistant Treasurer, two Collection Officers, and two Market Traders. Each informant provided unique perspectives and insights relevant to the study's focus on assessing the effectiveness of levy collection practices at the market. These interviews served as valuable sources of firsthand information and contributed to the comprehensive analysis conducted by the research team. The interviews were conducted once.

The draft questions appear to have been formulated by the research team themselves, drawing from the context of the study and aiming to gather relevant information about the effectiveness of levy collection practices at the Parungkuda Semi-Modern Market.

There are a total of 18 questions across three sets: (1) Set 1: Quality and Responsibilities of Collection Officers (6 questions); (2) Set 2: Quantity and Infrastructure of Collection Activities (4 questions); and (3) Set 3: Discipline, Accuracy, and Timeliness of Collection Officers (4 questions). Therefore, there were 6 interviews conducted, and the research team prepared 18 questions in total for the interviews.

The data collection techniques used in this research are participatory observation, interviews, and documentation. To test the validation of information data that has been collected, the researcher uses a credibility test through a triangulation process (Triangulation of sources, Triangulation of techniques, and Triangulation of time). data analysis used is data reduction, data display, and conclusion drawing/verification (Sugiyono, 2022).

## RESULTS AND DISCUSSION

The Effectiveness of Market Service Levy Collection Implementation in Parungkuda Semi-Modern Market, Sukabumi Regency. The implementation of market service levy collection in Parungkuda Semi-Modern Market, Sukabumi Regency, based on Law Number 28 of 2009 as follows: (a) Levies are collected using coupons, tickets, and subscription cards based on SKRD (Regional Levy Determination Letter) or equivalent documents; (b) Those who underpay or do not pay on time are subject to a 2% administrative sanction per month using STRD (Regional Levy Billing Letter); and (c) Regional head regulations determine the procedures for levy collection.

Undang-undang Number 18 of 1997 article 26 states that levy collection cannot be subcontracted. This means that the entire process of levy collection cannot be entrusted to third parties. According to Peraturan Daerah Kabupaten Sukabumi Number 8 of 2018 concerning amendments to Regional Regulation Number 31 of 2012 concerning Market Service Levies and Wholesale Market and/or Shop Levies, market service levy is a regional levy as payment for services provided by traditional/simple market facilities such as yards, stalls, and kiosks managed by the Regional Government and specifically provided for traders.

Effectiveness is a measure of the level of success in achieving set goals (Alhadabi & Karpinski, 2020). Effectiveness is related to the relationship between expected outcomes and actual results. Effectiveness is the relationship between output and goals (Iram et al., 2020). The greater the contribution of output to goal achievement, the more effective a program/activity is (Abolhallaj et al., 2021).

Effectiveness can be understood as the degree of success of a program in its effort to achieve program goals (Rafiola et al., 2020). A program can be considered effective if its goals and targets are achieved within the targeted time frame regardless of the costs incurred (Calvanese Strinati & Barbarossa, 2021). Effectiveness is used as a benchmark for comparing planned activities and processes with the results achieved, thus determining whether a program/activity is effective or not requires measures of effectiveness (Laili & Citra Mulya Sari, 2022).

In this study, the Effectiveness of Market Service Levy Collection Implementation in Parungkuda Semi-Modern Market, Sukabumi Regency, the researcher used Saxena's theory as cited in Indrawijaya (2014:176), which consists of three concepts of Effectiveness measurement: Quality, Quantity, and Time. The following are the results of the study regarding the Effectiveness.

### **The Effectiveness of the Implementation of Market Service Retribution Collection**

Effectiveness has an important influence on the success of an organization in achieving its goals, this can be achieved if there are efforts and efforts made. So in this case the researcher also asked the informant about the effectiveness of the implementation of the collection of market service fees at the Parungkuda market.

In this study, researchers used the theory of effectiveness according to Saxena in (Indrawijaya, 2010). The effectiveness of the implementation of market service levy collection will be measured using indicators of effectiveness according to Saxena in Indrawijaya (2014: 176) which include quality, quantity, and time. If it meets the three indicators, the implementation of market service levy collection will be effective.

### **The Quality of Implementation of Market Service Retribution Collection**

Properly implemented quality will affect the level of effectiveness of a program or activity in achieving objectives. Quality is the volume of work produced under normal conditions. This can be seen from the amount of workload and conditions obtained or experienced during work. Every company always tries to improve the work effectiveness of its employees.

Retribution collection officers must have good quality Human Resources (HR), be responsible in carrying out their duties in accordance with the established service standards, this is also inseparable from the role of the leadership in improving the quality of implementation of market service retribution collection.

The following are the results of the researcher's interviews with the Head of the Parungkuda Market Technical Implementation Unit (UPT), the Assistant Treasurer of the UPT Parungkuda Market, the UPT Parungkuda Market Retribution Collector, and traders of the Parungkuda Semi-Modern Market, Sukabumi Regency, regarding the retribution collection:

#### ***Human Resource Quality***

How is the quality of human resources (HR) for the collection of service fees in the Semi-Modern Market of Parungkuda, Sukabumi Regency? Mr. Maman Mulyaman, the Head of the Parungkuda Market UPT, stated:

"The quality of human resources for fee collectors in the implementation of market fee collection is still lacking, such as in completing tasks and self-development to enhance existing potential. Regarding the quality of human resources for fee collectors here, it is still lacking, seen from task completion and the inability to tap into potential because it is apparent from the submission of collection results to the treasurer."

Similarly, Mr. Usep Rustandi, an assistant treasurer at the Parungkuda Market UPT, stated:

"When looking at the human resources for fee collectors in completing tasks, they are still lacking in responsibility, such as in completing fee collection, there are still traders who are not collected. Furthermore, regarding human resources, there are some fee collectors here who are incapable of conducting fee collection, resulting in a reduction in collection outcomes and ultimately failing to reach the target."

In contrast, Mr. Syaiful Rahman, a fee collector at the Parungkuda Market UPT, explained:

"When talking about HR, in my opinion, it goes back to leadership. If leaders want their subordinates to have good HR quality, then leaders must be able to improve the quality of their subordinates and encourage them to improve their HR quality. Then the question still revolves around HR, honestly, I admit that my HR is still lacking because there are many things I don't understand about the regulations regarding market fees."

Similarly, Mr. Dudung Saputra, a fee collector at the Parungkuda Market UPT, stated:

"When looking at HR, perhaps the implementation of market fee collection services could improve, but in reality, HR here is still insufficient. However, our market coordinator always tries to encourage and support us as fee collectors to always be enthusiastic and improve fee collection performance. The quality of HR for fee collectors here is still lacking, but our leaders try to encourage and support us to always be enthusiastic in our duties."

Based on the analysis of interviews with informants from the Parungkuda Market UPT and traders at the Semi-Modern Parungkuda Market regarding HR quality, it can be concluded that the quality of HR for fee collectors is still lacking, such as being unable to tap into existing potential and lacking understanding of fee collection implementation according to regulations.

#### ***Responsibilities***

How are the responsibilities of fee collectors in the implementation of market service fee collection at the Semi-Modern Market of Parungkuda, Sukabumi Regency? Mr. Usep Rustandi, an assistant treasurer at the Parungkuda Market UPT, said:

"I like to advise fee collectors about work responsibilities, so if traders don't pay, it should be noted. The coordinator also emphasizes to me about these records for revenue evaluation. Regarding the responsibility of fee collectors in fee collection, they are still not responsible enough; they only remember occasionally and not of their own accord."

On the other hand, Mr. Maman Mulyaman, the Head of the Parungkuda Market UPT, stated:

"Regarding responsibility, some fee collectors are still irresponsible in performing their duties, such as recording traders who do not pay fees. Fee collectors' responsibility in fee collection is still inadequate, but I always give advice related to fee collection implementation in facing challenges in the field."

In contrast, Mr. Syaiful Rahman, a fee collector at the Parungkuda Market UPT, said:

"I always take responsibility for my work, and I always obey my superiors' orders, but sometimes I forget to record traders who don't pay. For now, I always obey my superiors' orders in fee collection implementation, but I sometimes forget or don't have time to record traders who open and close, so I will try to improve my shortcomings to be more responsible."

Similarly, Mr. Dudung Saputra, a fee collector at the Parungkuda Market UPT, explained:

"Regarding work responsibilities, I am certainly responsible for my work as a fee collector and always obey what my superiors command. I work as best as I can because I also know that fee collection is mandatory for traders, and I immediately deposit the collection proceeds to the assistant treasurer."

Likewise, Mrs. Titin, a fashion trader at Block D kiosk of the Semi-Modern Parungkuda Market, said:

"As for the responsibility of fee collectors, I think they are quite responsible. From what I've observed, if I don't have sales in the morning, the collectors don't force me to pay. Overall, the fee collectors' responsibility here is good; they don't force collection, especially if I haven't made sales yet."

Based on the analysis of interviews with informants from the Parungkuda Market UPT and traders at the Semi-Modern Parungkuda Market regarding responsibilities, it can be concluded that the responsibility of fee collectors is still lacking, as evidenced by the ineffective completion of their work.

### **Service Standards**

What are the service standards in the implementation of market service fee collection at the Semi-Modern Market of Parungkuda, Sukabumi Regency? Mr. Maman Mulyaman, the Head of the Parungkuda Market UPT, stated:

"In improving service quality, fee collectors are not yet effective because some of them are not maximizing their efforts in fee collection. Some fee collectors still cannot attract traders' sympathy, and they cannot provide maximum service. Perhaps the collectors do not follow my orders, I believe. I often provide guidance on serving the public regarding fee collection implementation according to regulations."

Similarly, Mr. Usep Rustandi, an assistant treasurer at the Parungkuda Market UPT, said:

"The service we provide follows the Standard Operational Procedures in implementing fee collection according to Regional Regulation No. 8 of 2018. The service standards here related to fee collection implementation always include understanding Regional Regulation No. 8 of 2018 regarding market fee collection."

On the other hand, Mr. Syaiful Rahman, a fee collector at the Parungkuda Market UPT, stated:

"As for the service, I have provided maximum service to traders, but sometimes, due to many traders, I don't have time to provide good service, but overall, I have given the best service. However, I sometimes forget to serve the traders well because I don't understand the regulations regarding fee collection."

Similarly, Mr. Dudung Saputra, a fee collector at the Parungkuda Market UPT, explained:

"Regarding service standards, it is certain that the service standards provided here are in accordance with regulations. Even though sometimes I forget to serve well, I always try to understand the regulations to provide good service."

Likewise, Mrs. Titin, a fashion trader at Block D kiosk of the Semi-Modern Parungkuda Market, said:

"I think the service is already quite good, but maybe sometimes they forget because there are too many traders. So, I don't take it too seriously."

Based on the analysis of interviews with informants from the Parungkuda Market UPT and traders at the Semi-Modern Parungkuda Market regarding service standards, it can be concluded that service standards in the implementation of market service fee collection are not yet effective. Some fee collectors cannot attract traders' sympathy and do not provide maximum service. Saxena as cited in Indrawijaya (2014:176) explains that quality is the volume of work produced under normal conditions. This can be seen from the amount of workload and the conditions encountered while working. The quality of levy collection implementation can be measured by the following indicators: (a) Human Resources Quality. The ability of each employee to complete their tasks, develop themselves, and encourage their colleagues (Dachner et al., 2021). The implementation of market service levy collection in Parungkuda Semi-Modern Market, Sukabumi Regency, seen from the quality of human resources of levy collectors, is still lacking in improving work, such as completing tasks, self-development. Some levy collectors are still not sufficiently responsible in carrying out their duties, resulting in suboptimal quality of market service levy collection implementation. The discussion aligns closely with the findings of the research conducted by Iwan & Arisman (2023) One significant aspect highlighted in the discussion is the effort to improve the quality of human resources involved in market service fee collection. This includes forming teams dedicated to collection, enhancing supervision, and taking action against traders who default on payments. These efforts are crucial for ensuring the efficiency and effectiveness of fee collection processes. (b) Responsibility. Human awareness of intentional and unintentional behavior (Maalem Lahcen et al., 2020). The implementation of market service levy collection in Parungkuda Semi-Modern Market, Sukabumi Regency, seen from the responsibility of levy collectors, has not been able to complete their tasks with a full sense of responsibility in behavior and in overcoming obstacles in the field. (c) Service Standards. The implementation of market service levy collection in Parungkuda Semi-Modern Market, Sukabumi Regency, seen from the service standards of levy collectors, is not adequate with the facilities and infrastructure used as guidelines for service provision and as a reference for assessing service quality as the obligation and promise of service provision for quality, fast, affordable, and orderly service. (d) Leadership Capability. Some skills that can be learned and must be mastered include management, organization, and providing good feedback to subordinates (Miran & Sumampouw, 2023). The leadership ability to motivate levy collectors in levy collection implementation has not possessed skills that can be relied upon in solving problems in the field and mastering management, organization, and providing good feedback to subordinates.

### **The Quantity of Market Service Fee Collection Implementation**

The quantity of work performed accurately will affect the effectiveness level of a program or activity in achieving its objectives. Quantity is the result shown by employees in the form of work results in terms of tidiness, accuracy, and the relevance of results without disregarding the volume of work in performing tasks. In the implementation of market service fee collection, officers must have a quantity of work that can achieve the predetermined target.

Below are interviews conducted by the researcher with the Head of the Parungkuda Market UPT, the assistant treasurer of the Parungkuda Market UPT, fee collectors at the Parungkuda Market UPT, and traders at the Semi-Modern Parungkuda Market regarding:

#### **Quantity of Results**

How is the quantity of fee collection results by fee collectors in the implementation of market service fee collection at the Semi-Modern Market of Parungkuda, Sukabumi Regency? Mr. Maman, as the Head of the Parungkuda Market UPT, said:

"For now, the fee collectors' results are inadequate because there are still traders who have not met the tariff classification for their payments. One example is a trader who has three stalls but only pays for one. As I mentioned yesterday, regarding the quantity of work results, for now, the fee collectors still cannot achieve the target because some traders are lacking in their payments."

Meanwhile, Mr. Usep Rustandi, as the assistant treasurer of the Parungkuda Market UPT, explained:

"In terms of revenue, the fee collectors have not yet reached the predetermined target in their submissions to me. The reason is that some traders did not pay the fee because they closed. The fee collectors have not yet reached the predetermined target because some traders did not pay the fee due to the market having few visitors or being quiet."

In contrast, Mr. Syamsul, a fee collector at the Parungkuda Market UPT, said:

"Regarding the quantity of work, I, as a fee collector, do my best in fee collection. However, I cannot force traders to pay if they don't have money. As I mentioned yesterday, regarding the quantity of work, I cannot force the collection of traders because they are not profitable yet, and I do my best to achieve the predetermined target."

Similarly, Mr. Dudung, a fee collector at the Parungkuda Market UPT, stated:

"As an executor in fee collection, there are many obstacles I face in the field related to the traders' characters. Some are easy in their payments, while others are slow, which affects the revenue or the number of tickets sold. My fee collection results have not yet reached the target for today because there are some obstacles, such as power outages, which automatically result in complaints from traders and affect the collection income."

And Mrs. Titin, a fashion trader at Block D kiosk of the Semi-Modern Parungkuda Market, said:

"I have always paid the fee, but I apologize, it's not that I don't want to increase my fee payment. Currently, my sales are declining, so my payment is still insufficient. I haven't paid the fee enough because my sales are declining, mainly because there are many street vendors in front, and the kiosk traders in front also display their goods to the front, automatically narrowing the alleyway to my kiosk, making it less frequented by visitors."

On the other hand, Mr. Uyeh, a vegetable trader at Block K of the Semi-Modern Parungkuda Market, said:

"Speaking of fee payment, I always pay attention to it because the fee is my obligation as a trader. I always pay the fee because it is our obligation as traders, except when I don't have money, of course, I won't pay."

Based on the analysis of interviews with informants from the Parungkuda Market UPT and traders at the Semi-Modern Parungkuda Market regarding the quantity of results, it can be concluded that the fee collectors' work results have not yet reached the target due to several reasons, such as the fee collectors' lack of skill, the presence of street vendors with similar goods to kiosk traders, and the lack of regulation of street vendors and protrusions.

#### **Facilities and Infrastructure**

What facilities and infrastructure are used by fee collectors in the implementation of market service fee collection at the Semi-Modern Market of Parungkuda, Sukabumi Regency? Mr. Maman, as the Head of the Parungkuda Market UPT, said:

"The facilities and infrastructure at the Parungkuda Market UPT office are indeed inadequate, so in the work implementation, it is sometimes hindered, and the workspace facilities are cramped. Sometimes, if there are discussions with traders, it doesn't fit. The facilities and infrastructure here are still inadequate; hopefully, in the future, the facilities here can be more supportive. I have submitted a request to the department, hopefully, it will be realized as soon as possible."

Similarly, Mr. Usep, as the assistant treasurer of the Parungkuda Market UPT, explained:

"When looking at the facilities and infrastructure, they are lacking, but we always maintain or take care of the existing infrastructure so that it doesn't deteriorate quickly, such as computers, sound systems, guest chairs, and others. The facilities and infrastructure in this office are indeed inadequate, but we all take good care of them, such as computers, chairs, cabinets, and others; our goal is just to save."

Then, Mr. Syamsul, a fee collector at the Parungkuda Market UPT, said:

"As a fee collector, I feel that using a piece of ticket as a tool is not very effective because the ticket can become waste or litter."

And the next day, Mr. Syamsul, as a fee collector at the Parungkuda Market UPT, said:

"The facilities and infrastructure used during the market service fee collection are in the form of tickets or what is called a market service fee receipt. I carry out fee collection according to the applicable regulations."

Similarly, Mr. Iyan Mulyana, a fee collector at the Parungkuda Market UPT, said:

"The facilities and infrastructure felt during the task implementation are not yet adequate; hopefully, there will be changes in the future. Hopefully, the facilities and infrastructure at the Parungkuda Market UPT can be increased, and fee collection implementation can also be practical if the infrastructure is in accordance with or follows current technology."

### **Constraints**

What are the constraints that occur regarding quantity in the implementation of market service fee collection at the Semi-Modern Market of Parungkuda, Sukabumi Regency? In an effort to increase the quantity of market service fee collection at the Semi-Modern Market of Parungkuda, Sukabumi Regency, there are field constraints in supporting accurate results. Therefore, the researcher conducted interviews with the Parungkuda Market UPT and traders at the Semi-Modern Parungkuda Market. The researcher asked about what obstacles or hindrances exist in increasing the quantity of market service fee collection at the Semi-Modern Parungkuda Market. Mr. Maman, as the Head of the Parungkuda Market UPT, said:

"The obstacles or hindrances regarding the quantity of work, I feel that the fee collectors have not been able to tap into the existing potential, which affects the fee collection results. I have even provided motivation and innovation to them. The obstacles or hindrances related to quantity here may be because the officers have not been able to develop themselves, which may result in decreased fee collection results, and I always provide motivation to them to increase their quantity of work."

In contrast, Mr. Usep, as the assistant treasurer of the Parungkuda Market UPT, explained:

"In terms of fee collection results, indeed, most fee collectors have submitted less; there may be leaks in the field. As I mentioned yesterday, my indication is that there are leaks in the field resulting in fee collection revenue not reaching the target."

Different from Mr. Syamsul, a fee collector at the Parungkuda Market UPT, who said:

"So far, the constraint that has occurred, why the fee collection results are insufficient or declining, is due to the lack of market visitors. If I'm not mistaken, yesterday I said that the constraints that occurred in the field during the fee collection are the lack of market visitors and the traders' lack of awareness of the compulsory fee."

Similarly, Mr. Dudung, a fee collector at the Parungkuda Market UPT, said:

"The obstacle or constraint that occurs, which affects the revenue of fee collection, is related to the human resources of market traders. Why I sometimes deposit to the assistant treasurer fully and sometimes not, because there are always obstacles in the field, namely because traders close, and secondly, traders who lack awareness of paying the fee."

Trader Mrs. Titin, at Block D kiosk of the Semi-Modern Parungkuda Market, said:

"Yes, speaking of constraints, why sometimes I pay and sometimes I don't pay the fee, it's because in front of the market entrance, it's blocked by other traders who display their goods beyond the limit. Automatically, I have to pay the fee even though my stall is not profitable, and to the fee collectors, it also reduces their income. What I feel is the constraint is why I still cannot pay the fee according to my obligation, it's because many traders do not obey market regulations, so it affects my income."

Similarly, Mr. Uyeh, a vegetable trader at Block K of the Semi-Modern Parungkuda Market, said:

"The obstacle or hindrance for us is the presence of unregulated street vendors, which will affect the traders in kiosks or stalls, reducing their income and, of course, also affecting the fee payment. The presence of unregulated street vendors will affect the traders in kiosks or stalls, reducing their income and, of course, also affecting the fee payment."

Based on the analysis of interviews regarding constraints or hindrances in the implementation of market service fee collection, it can be concluded that the obstacles or hindrances that occur, resulting in a decrease in fee collection revenue and the failure to achieve targets, are indications of leaks in the field, traders' lack of awareness of the mandatory fee, and traders' opening and closing practices.

### **Solutions**

How to overcome the constraints that occur in the implementation of market service fee collection at the Semi-Modern Market of Parungkuda, Sukabumi Regency? There are several things that become constraints or hindrances in increasing the quantity of market service fee collection at the Semi-Modern Market of Parungkuda, Sukabumi Regency. Therefore, the Parungkuda Market UPT took several efforts to increase the quantity of market service fee collection at the Semi-Modern Market of Parungkuda, Sukabumi Regency. Mr. Maman, as the Head of the Parungkuda Market UPT, due to illness, said:

"I provide guidance to the fee collectors in terms of tapping into potential by understanding and studying Regional Regulation Number 8 of 2018 concerning Market Service Fees and how to attract traders' attention so that traders increase their awareness of the compulsory fee. Similarly, as discussed yesterday regarding the solution, I always provide motivation and innovation to the fee collectors and offer views on the implementation of fee collection according to the Regional Regulation, so that market traders understand and realize the importance of paying the fee."

In contrast, Mr. Usep, as the assistant treasurer of the Parungkuda Market UPT, explained:



"To prevent leaks in fee collection results, my superiors make records of stalls that are open and closed, and we evaluate the fee collection implementation. To prevent leaks in the field, the collectors must record those that are open and closed and report the potential data of all active traders. Hopefully, with this method, the fee collection results will increase."

Then, Mr. Syaiful Rahman, a fee collector at the Parungkuda Market UPT, said:

"Perhaps what I hope for is that my superiors will socialize Regional Regulation Number 8 of 2018 concerning Market Service Fees so that traders truly understand the importance of paying the market fee. My superiors must truly implement Regional Regulation Number 8 of 2018 so that we, as officers, understand well in carrying out our duties, and socialize it to the market community regarding the regulation so that traders also understand it."

Different from Mr. Dudung, a fee collector, who said:

"Perhaps I still carry out my duties, and I must communicate well with all traders, so that traders understand the compulsory fee. I always carry out my duties to the maximum and always communicate well with the traders; my goal is to have better interaction with the traders."

Then, trader Mrs. Titin at Block D kiosk of the Semi-Modern Parungkuda Market said:

"The Parungkuda Market UPT should regulate traders who display their goods too far forward so that they return to the set boundaries, thereby allowing easy access to the market for visitors."

And the next day, trader Mrs. Titin at Block D kiosk of the Semi-Modern Parungkuda Market said:

"What I said yesterday about the solution is that there should be regulation of street vendors and arrangements for other traders, regulating protrusions so that access to the market entrance is not narrow."

Similarly, Mr. Uyeh, a vegetable trader at Block K of the Semi-Modern Parungkuda Market, said:

"The government should regulate and organize street vendors so that with their regulation, the market conditions become attractive and can attract market visitors to increase. As I said yesterday, the solution is the regulation and supervision of street vendors, and the regulation of kiosk traders' protrusions."

Based on the interview results regarding quantity, constraints, and solutions or efforts to improve the implementation of market service fee collection, it can be concluded that quantity is the result shown by employees in the form of work results in terms of tidiness, accuracy, and relevance, without disregarding the volume of work. Regarding constraints or hindrances in the implementation of fee collection, it would be better with solutions or efforts by increasing good work quantity.

Saxena as cited in Indrawijaya (2014:176) explains that quantity is the result shown by employees in the form of work results in the form of neatness, accuracy, and the relevance of results without neglecting the volume of work in performing tasks. The quantity of levy collection implementation can be measured by the following indicators: (a) Number of Results. Each person works with results that are in line with the organization's goals (Purwanto et al., 2021). The results of levy collection by levy collectors in market service levy collection implementation in Parungkuda Semi-Modern Market, Sukabumi Regency, each levy collector has not been able to achieve targets, and levy collectors do not have adequate overall potential data. (b) Facilities and Infrastructure. Everything that can be used as a tool to achieve goals (Ghosh, 2013). The facilities and infrastructure used by levy collectors in market service levy collection in Parungkuda Semi-Modern Market, Sukabumi Regency, are in accordance with Sukabumi Regency Regional Regulation Number 8 of 2018 by using tickets.

### **The Implementation Time of Market Service Fee Collection**

How is the timing in the implementation of market service fee collection at the Semi-Modern Market of Parungkuda, Sukabumi Regency? The time used appropriately will affect the level of effectiveness of a program or activity in achieving its objectives. Time is an important aspect, as it serves as a limitation and measurement of work, age, and other factors. Time is one of the most important measurements of work effectiveness because it can determine whether an organization's time has been utilized to the best of its ability by each member of the organization.

### ***Discipline***

Discipline is the feeling of obedience and compliance with the values believed to be one's responsibility. Discipline is the effort to instill values or coercion so that the subject has the ability to obey a rule. Fee collectors must be disciplined in carrying out their duties. Below are the interview results with the Head of the Market Implementation Unit (UPT) of Parungkuda Market, the assistant treasurer of Parungkuda Market UPT, and traders at the Semi-Modern Parungkuda Market regarding. How is the discipline of fee collectors in the implementation of market service fee collection at the Semi-Modern Market of Parungkuda, Sukabumi Regency? Mr. Maman Mulyaman, as the Head of the Market Implementation Unit (UPT) of Parungkuda Market, said:

"Some employees are still lacking in discipline, both in coming to work and leaving work, thus hindering and not optimizing their work. Employees here are still lacking in discipline in terms of coming to and leaving the office, but I immediately warn employees who are not disciplined."

Then Mr. Maman Mulyaman, as the assistant treasurer of the Parungkuda Market UPT, said:

"There are some employees that I have monitored for the past few months, they are not disciplined in carrying out their duties, even though the management has sent warning letters to them several times, but the employee is still stubborn. Honestly, I feel embarrassed because the employees here are still lacking in discipline, so my management made a decision to warn employees who are less disciplined, and thank God now the discipline of employees has increased."

Then, Mrs. Titin as a fashion trader in block D of the Semi-Modern Parungkuda Market said:

"It seems that the employees of UPT Parungkuda Market have not fully carried out their duties in a disciplined manner, I hope the Head of UPT Parungkuda Market will reprimand firmly. So, regarding employee discipline, I think some of the fee collectors I know are still undisciplined, so the Market Head must be able to reprimand and improve the attitude of those employees."

Similarly, Mr. Uyeh as a vegetable trader in block K of the Semi-Modern Parungkuda Market said:

"The fee collectors seem undisciplined in their work performance because some of them cannot adjust their time during fee collection. When looking at the timing in the implementation of fee collection, there are some fee collectors who are less disciplined, such as not managing time during collection, and some traders not paying the fee."

Based on the analysis of interview results with UPT Parungkuda Market informants regarding time, it can be concluded that the timing in the implementation of fee collection is still not effective due to several aspects that cause ineffective time, such as the lack of discipline of officers and lack of supervision by superiors.

### ***Time Accuracy***

How accurate are the timing of officers in the implementation of market service fee collection at the Semi-Modern Market of Parungkuda, Sukabumi Regency? Mr. Maman Mulyman, as the Head of the Market Implementation Unit (UPT) of Parungkuda Market, said:

"So far, the fee collectors have been unable to manage the time in the implementation of fee collection, resulting in some traders not paying their fees. The fee collectors have not been punctual in the implementation of fee collection, resulting in a decrease in collection results, and I am trying to ensure that the fee collection is carried out on time, so I have made a schedule for the collection time."

Then, Mr. Maman Mulyman as the assistant treasurer of the Parungkuda Market UPT said:

"I think the fee collectors should be able to manage the time in the implementation of fee collection, so that the collection results can increase."

The next day, Mr. Usep as the assistant treasurer of the Parungkuda Market UPT said:

"As I said yesterday, the fee collectors have not been able to manage the time in the implementation, thus affecting the results, and the management always evaluates the work results. In block D of the Semi-Modern Parungkuda Market, the accuracy in managing time, the fee collectors have not been able to manage the time, there are still some collectors who are slow in their collections."

On the following day, Mrs. Titin as a fashion trader in block D of the Semi-Modern Parungkuda Market said:

"Looking at the accuracy of the collectors, I think it is still inadequate because there are still traders who are missed by the collectors, maybe the collectors do not adjust, so in the end, the collection is not done on time."

Similarly, Mr. Uyeh as a vegetable trader in block K of the Semi-Modern Parungkuda Market said:

"In the implementation of collection, the fee collectors are not punctual in collection, there are still traders who are missed or not collected, the accuracy of the collectors has not been able to adjust the time in collection to the traders, there are traders who don't open until noon or afternoon, their fee is not collected."

From the results of interviews with informants from UPT Parungkuda Market and traders at the Parungkuda Market regarding time accuracy, it can be concluded that regarding the accuracy of time implemented by fee collectors, it is still not effective due to several aspects that cause ineffective time, such as the lack of discipline of officers and lack of supervision by superiors.

### ***What are the constraints that occur regarding time in the implementation of market service fee collection?***

In an effort to increase the accuracy of the timing of market service fee collection at the Semi-Modern Market of Parungkuda, Sukabumi Regency, there are field constraints in supporting accurate results, so the researcher conducted interviews with the Head of UPT Parungkuda Market, assistant treasurer of UPT Parungkuda Market, and traders at the Semi-Modern Parungkuda Market. The researcher asked about what obstacles or hindrances exist in increasing the accuracy of timing in the implementation of market service fee collection at the Semi-Modern Parungkuda Market. Mr. Maman Mulyman, as the Head of the Market Implementation Unit (UPT) of Parungkuda Market, said:

"Officers are late for work and do not immediately prepare the STRD sufficiently for fee collection implementation. Maybe in this case, I am not strict enough and ultimately my employees become less disciplined regarding time in carrying out their duties, but I have corrected this by giving them warnings and I also started taking decisive action."

And Mr. Usep as the assistant treasurer of UPT Parungkuda Market said:

"There are some fee collectors who are slow in the implementation of fee collection, do not pay attention to time in implementation. The accuracy of fee collectors' time has not been effective because there are still mistakes in the implementation of collection, such as fee collectors often not explaining the fee tariff."

Then Mrs. Titin as a fashion trader in block D of the Semi-Modern Parungkuda Market said:

"There are fee collectors who are not organized in the implementation of collection, which ultimately results in untimely completion of collection, some fee collectors are not organized in their implementation, so in the end, the results are not on time."

Similarly, Mr. Uyeh as a vegetable trader in block K of the Semi-Modern Parungkuda Market said:

"I see that fee collectors are still unable to adjust their time in the implementation of collection. Before the collection, the fee collectors should look at the time first, which ones should be prioritized, which ones should be collected first, it seems that the collectors cannot go in that direction."

### ***How to overcome the obstacles that occur in the implementation of market service fee collection?***

There are several obstacles or hindrances in increasing the accuracy of timing in the implementation of market service fee collection at the Semi-Modern Market of Parungkuda, Sukabumi Regency. Therefore, the UPT Parungkuda Market took several efforts to increase the accuracy of timing in the implementation of market service fee collection at the Semi-Modern Market of Parungkuda, Sukabumi Regency. Mr. Maman Mulyman, as the Head of the Market Implementation Unit (UPT) of Parungkuda Market, said:

"I always remind my employees to come to work early and prepare whatever needs to be brought during fee collection time. I always remind them if there are employees who forget or do not understand the facilities that must be brought during fee collection."

Then Mr. Usep Rustandi as the assistant treasurer of UPT Parungkuda Market said:

"My superiors have established new rules so that fee collectors can be more diligent and punctual in their work, if necessary, fee collectors are given bonuses. For the solution related to time, the management establishes rules for employees that must be followed by all UPT Market employees, and ultimately there is an increase in performance."

Then Mrs. Titin as a fashion trader in block D of the Semi-Modern Parungkuda Market said:

"Managing time by looking at which traders should be collected first, the collectors must be able to manage time in the implementation of collection by seeing who should be prioritized for fee collection."

And Mr. Uyeh as a vegetable trader in block K of the Semi-Modern Parungkuda Market said:

"Must remain enthusiastic in work and have a sense of responsibility, this must be possessed by the attitude of fee collectors. Fee collectors must remain enthusiastic, creative, responsible, master the terrain, have good communication with traders, and maintain politeness. God willing, whatever the goal of the Market UPT will be achieved."

Based on the analysis of interview results with UPT Parungkuda Market informants and traders at the Parungkuda Market regarding time, constraints, and solutions or efforts to improve the implementation of market service fee collection, it can be concluded that time is something that can determine the success of an activity carried out in an organization. Likewise, it will have a significant impact on the failure of an organizational activity, the proper use of time will create effectiveness in achieving goals. Regarding obstacles or hindrances to time in fee collection implementation, it would be better with solutions or efforts where each employee must be able to use time as efficiently as possible, especially by arriving on time at the office, good communication with traders, and trying to complete tasks to the best of their ability.

Saxena as cited in Indrawijaya (2014) explains that time is an important thing, time is a limitation and becomes a measurement of work, age, and so on. Time is one of the very important work effectiveness measurements because it can be seen whether the time used by an organization has been carried out as best as possible by every member of the organization. The time of levy collection implementation can be measured by the following indicators: (a) Discipline. Attitudes and behaviors that show employee compliance with organizational regulations (Maryani et al., 2021). The discipline of levy collectors in levy collection implementation in Parungkuda Semi-Modern Market, Sukabumi Regency, has not had a good attitude and behavior showing employee compliance with organizational regulations. (b) Timeliness. Timeliness is the deadline for doing a job, where the time to complete the job has been determined beforehand so that there is a time frame that has become a rule in an organization (Geiger et al., 2021). The punctuality of levy collectors in market service levy collection in Parungkuda Semi-Modern Market, Sukabumi Regency, has not been able to complete tasks on time, and there are still traders who are missed in levy collection implementation.

## **CONCLUSION**

Based on the research findings, the effectiveness of Market Service Fee Collection Implementation at the Semi-Modern Market of Parungkuda, Sukabumi Regency can be evaluated across several key dimensions. Firstly, concerning the quality aspect, it is observed that the human resources involved in fee collection exhibit deficiencies. They lack the capacity to fulfill their duties comprehensively, failing to tap into their potential for self-development and teamwork. Additionally, their sense of responsibility is wanting, as they struggle to address challenges effectively. Moreover, the service standards set for fee collectors lack clear benchmarks, hindering the delivery of quality, efficient, and organized services.

Furthermore, the leadership within the fee collection system is deemed inadequate, with leaders lacking the necessary problem-solving skills and managerial acumen to guide their subordinates effectively. Secondly, focusing on the quantity aspect, the collection outcomes fall short of targets, and comprehensive data on the potential of fee collectors remain elusive. While the facilities and infrastructure utilized adhere to regional regulations, the efficacy of fee collection remains suboptimal.

Lastly, evaluating the concept of time reveals lapses in discipline among fee collectors, as evidenced by their failure to adhere to organizational rules consistently. Moreover, their time management skills are deficient, resulting in incomplete tasks and missed opportunities for fee collection. In summary, while certain aspects of the Market Service Fee Collection Implementation at the Semi-Modern Market of Parungkuda, Sukabumi Regency adhere to regulations, significant improvements are required across various fronts, including human resource capacity, leadership, collection outcomes, and time management, to enhance overall effectiveness and efficiency.

## REFERENCES

- Abadi, M. Y., Marzuki, D. S., Rahmadani, S., Fajrin, M. Al, Pebrianti, A., Afiifah, & Juliarti, R. E. (2021). *Efektivitas Kepatuhan Terhadap Protokol Kesehatan Covid-19 Pada Pekerja Sektor Informal Di Kota Makassar*. *uwais inspirasi indonesia*.
- Abolhallaj, M., Jafari, M., Seyedin, H., Salehi, M., Pourtaleb, A., Rahmani, K., & Hosseini, S. E. (2021). New financial management system for Iran public health sector: A qualitative study. *Journal of Education and Health Promotion*, 10(1). [https://doi.org/10.4103/jehp.jehp\\_1201\\_20](https://doi.org/10.4103/jehp.jehp_1201_20)
- Alhadabi, A., & Karpinski, A. C. (2020). Grit, self-efficacy, achievement orientation goals, and academic performance in University students. *International Journal of Adolescence and Youth*, 25(1). <https://doi.org/10.1080/02673843.2019.1679202>
- Ali AlShehail, O., Khan, M., & Ajmal, M. (2022). Total quality management and sustainability in the public service sector: the mediating effect of service innovation. *Benchmarking*, 29(2). <https://doi.org/10.1108/BIJ-08-2020-0449>
- Artanti, J., Agustini, P. M., Saptono, A., Kartika Hanum, G., & D.O., R. (2022). Analysis Of Virtual Product Marketing Strategies To Increase Customer Satisfaction (Case Study On Bukalapak Partners). *IAIC Transactions on Sustainable Digital Innovation (ITSDI)*, 3(2). <https://doi.org/10.34306/itsdi.v3i2.516>
- Bruno, I., Lobo, G., Covino, B. V., Donarelli, A., Marchetti, V., Panni, A. S., & Molinari, F. (2020). Technology readiness revisited: A proposal for extending the scope of impact assessment of European public services. *ACM International Conference Proceeding Series*. <https://doi.org/10.1145/3428502.3428552>
- Calvanese Strinati, E., & Barbarossa, S. (2021). 6G networks: Beyond Shannon towards semantic and goal-oriented communications. *Computer Networks*, 190. <https://doi.org/10.1016/j.comnet.2021.107930>
- Dachner, A. M., Ellingson, J. E., Noe, R. A., & Saxton, B. M. (2021). The future of employee development. *Human Resource Management Review*, 31(2). <https://doi.org/10.1016/j.hrmr.2019.100732>
- Geiger, D., Danner-Schröder, A., & Kremser, W. (2021). Getting Ahead of Time—Performing Temporal Boundaries to Coordinate Routines under Temporal Uncertainty. *Administrative Science Quarterly*, 66(1). <https://doi.org/10.1177/0001839220941010>
- Ghosh, A. K. (2013). Employee Empowerment: A Strategic Tool to obtain Sustainable Competitive Advantage. *International Journal of Management*, 32(1).
- Guha, S., Mandal, A., & Kujur, F. (2021). The social media marketing strategies and its implementation in promoting handicrafts products: a study with special reference to Eastern India. *Journal of Research in Marketing and Entrepreneurship*, 23(2). <https://doi.org/10.1108/JRME-07-2020-0097>
- Hakim, N., Ahmad Muhammad Hamad Al-Nil, B. M., & Mubarak Bin Humaid, M. S. (2023). Ethics of Buying and Selling Online Sharia Economic Perspective: Study of the Concept of Iqâlah. *Demak Universal Journal of Islam and Sharia*, 1(01). <https://doi.org/10.61455/deujis.v1i01.22>
- Harahap, M. Y., & Wicaksono, B. (2016). Implementasi Kebijakan Retribusi Pelayanan Pasar Sangkumpul Bonang Kota Padangsidempuan Tahun 2013-2015. *JOM FISIP Universitas Riau*, Vol. 3(2).
- Hariandja, T. R., & Suphia, S. (2019). Efektivitas Jaminan Sosial (BPJS Kesehatan) bagi Masyarakat Miskin di Desa Rambigundam Kecamatan Rambipuji Kabupaten Jember. *JURNAL RECHTENS*, 8(1).
- Hoekman, B., & Sabel, C. (2021). Plurilateral Cooperation as an Alternative to Trade Agreements: Innovating One Domain at a Time. *Global Policy*, 12(S3). <https://doi.org/10.1111/1758-5899.12923>
- Indrawijaya. (2010). *Teori, Perilaku, dan Budaya Organisasi*. Refika Aditama.
- Iram, R., Zhang, J., Erdogan, S., Abbas, Q., & Mohsin, M. (2020). Economics of energy and environmental efficiency: evidence from OECD countries. *Environmental Science and Pollution Research*, 27(4). <https://doi.org/10.1007/s11356-019-07020-x>
- Iwan, & Arisman. (2023). Analysis of the Contribution and Effectiveness of Receiving Market Service Retributions to Regional Genuine Income in Yogyakarta City. *Economicand Business Horizon*, x(32), 1–11.
- Kementerian PPN/ Bappenas. (2020). Ringkasan Eksekutif Pelaksanaan Pencapaian TPB/SDGs Indonesia. In *Ringkasan Eksekutif Pelaksanaan Pencapaian TPB/SDGs Indonesia* (Issue 3).
- Kumpangpune, N., Saerang, D. P. E., & Engka, D. S. M. (2019). PENGARUH KINERJA KEUANGAN DAERAH TERHADAP PERTUMBUHAN EKONOMI SERTA DAMPAKNYA TERHADAP KEMISKINAN DI KOTA BITUNG. *JURNAL PEMBANGUNAN EKONOMI DAN KEUANGAN DAERAH*, 20(2). <https://doi.org/10.35794/jpekd.24818.20.2.2019>
- Laili, N. R., & Citra Mulya Sari. (2022). The Effect of Performance Measurement on Budget Execution with the Formulation of Performance Indicators on Budget Implementation of KPPN Blitar Service Scope. *Open Access Indonesia Journal of Social Sciences*, 5(4). <https://doi.org/10.37275/oaijs.v5i4.120>
- Lamia, A. A., Saerang, D. P. E., & Heince, R. N. W. (2015). Analisis Efektifitas Dan Kontribusi Pemungutan Pajak Restoran, Pajak Reklame, Dan Pajak Penerangan Jalan Pada Pendapatan Asli Daerah Kabupaten Minahasa Utara the. *Jurnal Berkala Ilmiah Efisiensi*, 15(05).
- Maalem Lahcen, R. A., Caulkins, B., Mohapatra, R., & Kumar, M. (2020). Review and insight on the behavioral aspects of cybersecurity. In *Cybersecurity* (Vol. 3, Issue 1). <https://doi.org/10.1186/s42400-020-00050-w>

- Maryani, Y., Entang, M., & Tukiran, M. (2021). The Relationship between Work Motivation, Work Discipline and Employee Performance at the Regional Secretariat of Bogor City. *International Journal of Social and Management Studies (Ijosmas)*, 2(2).
- Miran, M., & Sumampouw, O. (2023). Superior College Applied Research Competence of SPI Members in the Context of Improving the Quality of Supervisory Performance at Manado State University. *Aptisi Transactions on Technopreneurship (ATT)*, 5(1). <https://doi.org/10.34306/att.v5i1.293>
- PURWANTO, A., Purba, J. T., Bernarto, I., & Sijabat, R. (2021). EFFECT OF TRANSFORMATIONAL LEADERSHIP, JOB SATISFACTION, AND ORGANIZATIONAL COMMITMENTS ON ORGANIZATIONAL CITIZENSHIP BEHAVIOR. *Inovbiz: Jurnal Inovasi Bisnis*, 9(1). <https://doi.org/10.35314/inovbiz.v9i1.1801>
- Qolbi, A. U., Awali, H., Stiawan, D., Devy, H. S., Abdurrahman, U. I. N. K. H., & Pekalongan, W. (2023). Penerapan Prinsip-Prinsip Ekonomi Syariah Pada Pasar Tradisional Di Indonesia. *Jurnal Sahmiyya*, 2(1).
- Rafiola, R. H., Setyosari, P., Radjah, C. L., & Ramli, M. (2020). The effect of learning motivation, self-efficacy, and blended learning on students' achievement in the industrial revolution 4.0. *International Journal of Emerging Technologies in Learning*, 15(8). <https://doi.org/10.3991/ijet.v15i08.12525>
- Ratnasabapathy, S., Alashwal, A., & Perera, S. (2021). Exploring the barriers for implementing waste trading practices in the construction industry in Australia. *Built Environment Project and Asset Management*, 11(4). <https://doi.org/10.1108/BEPAM-04-2020-0077>
- Saleh, H., Surya, B., Ahmad, D. N. A., & Manda, D. (2020). The role of natural and human resources on economic growth and regional development: With discussion of open innovation dynamics. *Journal of Open Innovation: Technology, Market, and Complexity*, 6(4). <https://doi.org/10.3390/joitmc6040103>
- Sugiyono. (2022). *Metode Penelitian Kuantitatif, Kualitatif, dan R&D* (Cetakan 4). Alfabeta.
- Suryokumoro, H., & Ula, H. (2020). *Koperasi Indonesia dalam Era MEA dan Ekonomi Digital*. Universitas Brawijaya Press.
- Velenturf, A. P. M., & Purnell, P. (2021). Principles for a sustainable circular economy. In *Sustainable Production and Consumption* (Vol. 27). <https://doi.org/10.1016/j.spc.2021.02.018>
- Williams, L. D. (2021). Concepts of Digital Economy and Industry 4.0 in Intelligent and information systems. In *International Journal of Intelligent Networks* (Vol. 2). <https://doi.org/10.1016/j.ijin.2021.09.002>
- Zhang, W., Zhao, S., Wan, X., & Yao, Y. (2021). Study on the effect of digital economy on high-quality economic development in China. *PLoS ONE*, 16(9 September). <https://doi.org/10.1371/journal.pone.0257365>



# PERSAMI MI Nurussalam: Strategies for increasing students' spiritual intelligence based on natural activities

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ARTICLE INFO	ABSTRACT
<p><b>Article history</b>            Received: 2023-07-12            Revised: 2024-01-06            Accepted: 2024-01-16            Published: 2024-03-28</p> <p><b>Keywords</b>            Natural Activities            PERSAMI            Spiritual Intelligence</p>	<p><i>Spiritual intelligence is an important dimension in the holistic development of students. Although intellectual intelligence (IQ) is often the main focus in education, spiritual intelligence also has a significant role in shaping character, morality, and emotional well-being. Islamic Religious subject is one way to develop spiritual intelligence, a phenomenon that occurs at MI Nurussalam. Islamic Religious subject is given at a percentage of 10% of the general subjects' hours so that religious subject study hours only last for three meetings a week. Universitas Darussalam (UNIDA) Gontor Women's Campus Postgraduate Community Service Team organized PERSAMI at MI Nurussalam which aimed at increasing student's spiritual intelligence through fun natural activities, namely Saturday and Sunday Camps (Saturday and Sunday Camps – PERSAMI). The method used is PAR (Participatory Action Research), in partnership with MI Nurussalam teachers and students. This community service has succeeded in carrying out a series of activities which generally includes camps, cross country, and happy bonfires with a series of religious subjects in each activity. PERSAMI of MI Nurussalam activities succeeded in increasing students' spiritual enthusiasm and increasing their understanding of religion through fun nature camp activities.</i></p>
<p><b>Kata Kunci</b>            Kecerdasan Spiritual            Kegiatan Alam            PERSAMI</p>	<p><b>PERSAMI MI Nurussalam: Strategi untuk meningkatkan kecerdasan spiritual siswa melalui kegiatan alam.</b> Kecerdasan spiritual merupakan dimensi penting dalam perkembangan holistik pada siswa. Meskipun kecerdasan intelektual (IQ) seringkali menjadi fokus utama dalam pendidikan, kecerdasan spiritual juga memiliki peran yang signifikan dalam membentuk karakter, moralitas, dan kesejahteraan emosional. Materi agama Islam menjadi salah satu cara untuk mengembangkan kecerdasan spiritual. Fenomena yang terjadi di MI Nurussalam, materi agama Islam diberikan dengan persentase 10% dari jam pelajaran materi umum sehingga jam belajar materi agama hanya berlangsung selama tiga pertemuan dalam satu pekan. Tim Pengabdian Masyarakat Pascasarjana Kampus Putri Universitas Darussalam (UNIDA) Gontor menyelenggarakan PERSAMI MI Nurussalam yang ditujukan untuk meningkatkan kecerdasan spiritual anak melalui kegiatan di alam terbuka yang menyenangkan yaitu Perkemahan Sabtu dan Minggu (Perkemahan Sabtu dan Minggu–PERSAMI). Metode yang digunakan dalam pengabdian masyarakat ini adalah PAR (Participatory Action Research) bermitra dengan guru dan siswa MI Nurussalam. Pengabdian masyarakat ini telah berhasil melaksanakan rangkaian kegiatan yang secara umum meliputi perkemahan, jelajah alam, dan api unggun bahagia dengan rangkaian materi religi dalam setiap kegiatan. Kegiatan PERSAMI MI Nurussalam berhasil meningkatkan semangat spiritual siswa dan meningkatkan pemahaman agama mereka melalui kegiatan <i>fun nature camp</i>.</p> <p style="text-align: right;">Copyright © 2024, Ihsan, et al            This is an open access article under the CC–BY-SA license</p> <div style="text-align: right;">  </div>

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## INTRODUCTION

Madrasah Ibtidaiyah (MI) is a basic-level formal education institution characterized by Islamic-based education (Hasanah, 2021). MI carries out educational tasks that provide students with an introduction and basic knowledge of religion regarding worship, attitudes, and behavior according to religious guidance. Teaching is carried out to guide students toward strengthening their spiritual potential (Rauhah et al., 2021). Through guidance and teaching, children are supposed to comprehend, live, and implement religious teachings properly and correctly. In the context of worship, it implies that children can exercise in accordance with the guidelines for application.

One of the subjects taught from elementary school through higher education is Islamic religious education (Yuliyanti et al., 2022). Islamic religious education performs a very strategic and important part in transforming students into moral, educated, and authentically Muslim individuals (Qolbiyah et al., 2022). According to the National Education System, education is intended to unleash students' abilities to become humans of a democratic nation who are healthy, knowledgeable, capable, creative, and independent as well as have a strong sense of faith and devotion to God Almighty (Lestari & Maunah, 2022). Improving quality education is also in line with the spirit of succeeding Sustainable Development Goals (SDGs) number 4 in ensuring inclusive and equitable education for all. To realize this goal, a severe struggle is needed through educational institutions. Madrasah Ibtidaiyah is one of the educational institutions responsible for learning Islamic religious education, with three hours of lessons per week (Sa'diyah, 2022). The number of hours only partially guarantees the realization of national education goals because the learning material for Islamic religious education is comprehensive, complex, and universal.

In everyday life, we see much negative behavior from students (Herawati, 2020). Among others are lying, speaking harshly, smoking, stealing, and many other despicable acts. The moral decline that occurs at all levels of society is due to a lack of solid moral education at an early age (Rusli, 2021). This behavior indicates less-than-optimal Islamic religious education in schools and, simultaneously, a challenge for educational institutions, especially for Madrasah Ibtidaiyah, which is systematic and in character from an Islamic perspective.

The inability of Madrasah Ibtidaiyah to realize many factors causes effective Islamic learning. One of the factors that has a strong influence is the limited allocation of PAI (Pendidikan Agama Islam) subjects implemented in schools (Ismail & Hasan, 2022), hence, it is difficult for the school to complete Islamic religion learning material as a whole and intact. Thus, the subjects given emphasized specific material on dogmatic Islamic teachings (Jamhuri, 2017). It is not uncommon for PAI teachers to get stuck delivering material that places more emphasis on cognitive aspects (Johansyah, 2017). The inculcation of Islamic values in everyday life cannot be carried out by PAI teachers solely within the allotted time. Therefore, PAI optimization must be carried out in an integrated manner.

Implementing Islamic religious education at MI Nurussalam still shows a tense situation. Many factors cause concern, among others: first, in terms of school hours formally provided by the school, students are calculated to only have 3 hours of lessons per week. There is a contrast compared to other subjects, which can reach 6–8 hours per week (Prihatmojo & Badawi, 2020). The implication for students is that their learning outcomes are minimal and limited. The material is theoretically not mastered by students to the maximum. As a result, students cannot practice Islamic religious material in class daily.

Islamic religious education is implemented in a variety of ways, not just through official teaching methods (Nurmiati, 2021). However, implementing Islamic religious education can be done outside the formal learning process. PERSAMI (Perkemahan Sabtu dan Minggu) is a technique for practical education that takes place outside of school and the home (Afdal & Widodo, 2020). Fun activities with a fun design are used as learning tools. PERSAMI aims to give students high intelligence, morals, and spirituality early on. Permendikbud No. 63 of 2014 describes scout training as an extracurricular interest that must be implemented and exists in primary and secondary education. PERSAMI is carried out to increase students' values of divinity, leadership, culture, togetherness, love of nature, social responsibility, and independence.

Based on the importance of Madrasah Ibtidaiyah as an institution for increasing students' spiritual intelligence, it is necessary to pay special attention to this problem (Abidin, 2019). Meanwhile, there is a gap in the non-optimal learning of Islam studies at MI Nurussalam due to limited study hours. So, the community service team of postgraduate students at UNIDA Gontor was moved to help with problems at MI Nurussalam by making PERSAMI a means of community service. Service activities target are (a) participants having a passion for worship, especially for fardu prayers in Jama'ah, (b) participants being able to memorize prayers recited in prayer, daily prayers, and several short letters in Juz 30 of the Qur'an.

It is important to create a supportive, positive, and inclusive environment during PERSAMI so that students feel safe to explore and express their emotions. By supporting the development of emotional intelligence through camp activities, children can develop essential skills to overcome the challenges of everyday life. PERSAMI activities can provide benefits to MI Nurussalam to always improve and provide evaluations of the learning carried out, especially on PAI subject that learning objectives can be carried out well and students can put them into practice in everyday life. This activity also has benefits for the UNIDA Gontor Women's Campus Postgraduate Community Service Team because this service aims to provide solutions to problem-solving and empower potential in the environment (Saepudin et al., 2022).

The relationship between community service and the quality of education is close and influences each other. Community service can contribute positively to the quality of education, and conversely, quality education can encourage and facilitate the practice of community service. By building a positive connection between education and community service, we can create an environment that supports holistic growth and development for students while making a

positive contribution to the surrounding community. In addition, empowerment in achieving quality education is supporting one of the Sustainable Development Goals (SDGs) which strives to promote lifelong learning opportunities for all. Efforts made to achieve quality education are not only carried out by the government, but other parties also participate in efforts to improve the quality of education, including the private sector, educational institutions, and even the public (Nurfatimah et al., 2022).

## METHOD

The Saturday-Sunday Camp (PERSAMI) activity was held at MI Nurussalam. MI Nurussalam's address is located at Dadung, Sambirejo, Mantingan, Ngawi, East Java 63257, Indonesia. Participants in this activity were students from grades one to six at MI Nurussalam. The venue used for PERSAMI was Wisma Gontor Putri Field Campus 1. The implementation date was December 17–18, 2022. This community service was carried out in a PAR (Participatory Action Research) through partnerships with teachers and students in planning and implementing agreed-upon activity programs together (Fitrah & Luthfiah, 2017). To achieve the expected goals, the stages of activities were pre-implementation (preparation), implementation, and activity evaluation (Figure 1).

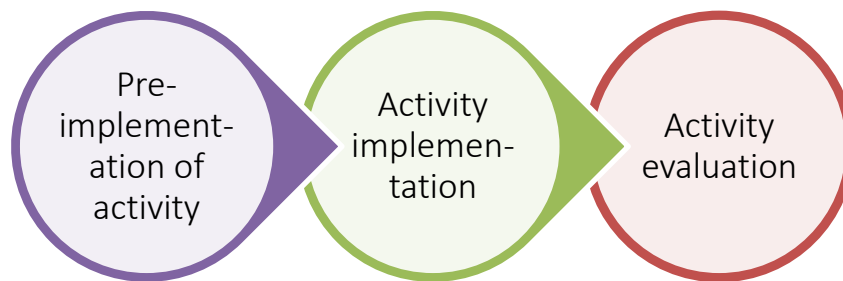


Figure 1. Stages of the Community Service Program

### Pre-implementation of Activity

The pre-implementation of the activities carried out were:

- 1) Observation at partner locations, namely MI Nurussalam, Dadung, Mantingan, and Ngawi, to obtain more detailed information related to problems faced by partners.
- 2) The survey where PERSAMI MI Nurussalam was held was at the Wisma Gontor Putri Campus 1 Field, Sambirejo-Mantingan-Ngawi.
- 3) Conduct a pre-test with a practical exam to determine the ability of the students who will attend the camp.
- 4) Making activity material in the context of increasing spiritual intelligence through Saturday-week camps based on nature activities.
- 5) Make a PERSAMI activity schedule.
- 6) Preparing tools for events in PERSAMI activities and setting up tents.

### Activity Implementation

The implementation phase of the activities carried out was shown in Tabel 1.

### Activity Evaluation

The evaluation phase was divided into two parts (Yusanto, 2020). First, evaluate the results of increasing spiritual intelligence with a post-test on PERSAMI participants. Second, evaluation of the results of PERSAMI's activities with the committee consisting of a community service team of postgraduate students at the UNIDA Gontor Women's Campus with MI Nurussalam teachers and students. Spiritual intelligence involves a deep understanding of oneself, life goals, values, and connection with the higher or inner self. The questions asked can help detect and explore the spiritual intelligence of MI Nurussalam students in the activities they participate in, namely PERSAMI. This activity opens up space for self-reflection and helps someone explore the dimensions of their spiritual intelligence. Spiritual intelligence is a highly personal experience and understanding, therefore, the questions are designed to stimulate deep reflection. Apart from that, after evaluating the activities, several supporting criticisms and suggestions were obtained so that they could become lessons for following up on future PERSAMI activities. The existing goodness will be maintained and if there are some mistakes they will be corrected so that they will bring valuable experiences and lessons.

Table 1. Schedule of Activity Implementation

Day and date	Activities	Time
Saturday, December 17, 2022	Opening ceremony	13.00 – 13.30
Saturday, December 17, 2022	Competition among groups	13.30 – 15.00
Saturday, December 17, 2022	Praying Ashar in the congregation	15.00 – 15.15
Saturday, December 17, 2022	Rest and preparation for Maghrib prayer	15.15 – 16.30
Saturday, December 17, 2022	Read the Qur'an and memorize short surahs	16.30 – 17.30
Saturday, December 17, 2022	Praying Maghrib by <i>jama'ah</i>	17.30 – 17.45
Saturday, December 17, 2022	Monitoring and memorizing short <i>surahs</i>	17.45 – 18.30
Saturday, December 17, 2022	Dinner	18.30 – 19.00
Saturday, December 17, 2022	Praying Isya' by <i>jama'ah</i>	19.00 – 19.30
Saturday, December 17, 2022	Happy Campfire Night	19.30 – 21.30
Saturday, December 17, 2022	Night ceremony and preparation before bed	21.30 – 22.00
Saturday, December 17, 2022	Sleeping time	22.00 – 04.00
Sunday, December 18, 2022	Praying Shubuh by <i>jama'ah</i>	04.00 – 04.30
Sunday, December 18, 2022	Post-test	04.30 -06.00
Sunday, December 18, 2022	Breakfast	06.00 – 07.00
Sunday, December 18, 2022	Cross country	07.00 – 10.00
Sunday, December 18, 2022	Rest time	10.00 – 12.00
Sunday, December 18, 2022	Praying Dhuhur by <i>jama'ah</i>	12.00 – 12.15
Sunday, December 18, 2022	Lunch	12.15 – 13.15
Sunday, December 18, 2022	Tent Dissolution	13.15 – 15.00
Sunday, December 18, 2022	Praying Ashar in the congregation	15.00 – 15.15
Sunday, December 18, 2022	Closing ceremony and prize distribution	15.15 – 16.00

## RESULTS AND DISCUSSION

Overall, all planned events went smoothly and successfully. A meeting of the service party was conducted with the administration of MI Nurussalam, the principal, to kick off the Community Service Program. An agreement was reached at the inaugural meeting to arrange a Saturday-Sunday camp (PERSAMI) to increase students' spiritual intelligence outside of Islamic learning sessions. This program aims to boost students' intelligence by extending Islamic religious education outside the classroom through camp activities. So far, the school has taught Islamic religious topics in class without knowing how to apply learning outcomes outside the classroom. For example, the school has yet to learn how eager pupils are to worship in a congregation outside of school hours.

Another simple example is the number of daily prayers remembered and their use in daily life. As a result, this activity assisted the school in improving students' spiritual intelligence through enjoyable outdoor activities. There were two types of activities: primary activities and secondary activities. Camping was the main activity, whereas ceremonies, communal prayers, competitions, joint Al-Qur'an activities, cheerful bonfires, cross country, and post-tests were among the supporting events.

As the main activity, the camp intends to establish several Islamic boarding schools to accommodate students' 24-hour learning outside of the classroom (Figure 2). The Milieu must be designed playfully. As a result, the camp design was appropriate for primary school pupils. The camp activities, which all MI Nurussalam students attended, were divided into 20 plots. Each plot to develop leadership education (*imamah*) was chaired by two sixth-grade pupils. Meanwhile, the camp model's design of *pesantren* living educates pupils to be social. The layout of the *pesantren* across the camp was a microcosm of social life. The program also aims to improve pupils' discipline in under 24 hours. Student discipline was taught during school hours and from when they woke up until bed.

The first supporting activity was the ceremony. The ceremonies in the PERSAMI MI Nurussalam activities consisted of the opening ceremony (Figure 3), the night call before going to bed, and the closing ceremony. The ceremony aims to increase the students' obedience to the rules (Audina et al., 2022). Obedience to shared rules will train students to obey all commands of Allah SWT, parental orders, and teacher orders and comply with shared rules. In addition, students can foster the spirit of *ukhuwah Islamiyah* through ceremonies and gatherings. Solidarity and togetherness will be established under the auspices of *Ukhuwah Islamiyah* (Amin, 2018). Starting from a sense of *ukhuwah Islamiyah*, it will positively impact various aspects of life, including increasing love for Allah SWT and Rasulullah SAW. So that it will have a long-term impact, namely increasing the solidity and trustworthy of the Muslim Ummah and making one's piety more perfect (Herwani, 2020).



Figure 2. Camping as the main activity



Figure 3. The opening ceremony

The subsequent supporting activity was praying in *jama'ah*. This activity was vital to instill a spirit of *jama'ah* (Yusrie et al., 2021). The spirit of praying in *jama'ah* is essential to convey the understanding that prayer is a servant's need. Thus, students can understand that prayer is not just a ritual (Zarkasyi, 2020). In addition, through fardu prayers in *jama'ah*, it



will teach students about the importance of unity to carry out the Shari'ah of Allah SWT. Understanding the importance of *jama'ah* prayers will make students aware that Islam is strong and victorious because it starts with *jama'ah*. Thus, cultivating this understanding is essential to create future formidable cadres of Islamic generations (Putra, 2016).

The competition, as depicted in Figure 5, was a supporting activity that must be connected to the aim of increasing spiritual intelligence (Putri, 2023). The competition consisted of Islamic competitions, namely quiz contests about Islam, primary sermon writing competitions, speech competitions, recitation competitions of the Qur'an (MTQ), Islamic music hadrah competitions, and poetry chain competitions about the struggle of Islam. The competition's feel adds to students' enthusiasm to explore Islamic religious material with a fun design. Participating in competitions is not only about developing intellectual abilities. Participating in competitions also honed soft skills (Puspaningrum et al., 2021). The soft skills include accepting defeat, being sportsmanlike, learning discipline, and mutual respect between participants. In addition, the main benefit of participating in competitions is to grow and train a champion's mentality (Anindyarini & Wijayanti, 2019). However, what is meant by a winning mentality is not a student who wants to always win and be a champion, no matter what conditions and methods he uses. But to instill the spirit of *al-tasabufi al-khairat* (Amirrudin et al., 2017).



Figure 5. The Islamic competition

Al-Qur'an activities were also the main supporting activities of the PERSAMI program (Figure 6). This activity consisted of reading the Qur'an using the listening method, *tahsin* reading the Koran, and memorizing short *surah*. This activity focused on instilling the spirit of learning the Qur'an. Al-Qur'an activities were carried out three times, namely before and after the Maghrib prayer and after the Shubuh prayer. The implementation of this activity aims to instill spiritual values based on the Qur'an (Anjarsari et al., 2017). Intense assistance from the Community Service team and teachers will increase students' enthusiasm to learn the Qur'an. So, at the end of the activity, there were significant results from this joint Qur'an activity. Joint Qur'an activities have proven effective in instilling religious values in students by applying habituation. Among the good habits of this activity are the habituation of *tadarus* al-Qur'an, daily prayers, chanting *asmaul husna*, always behaving well and responsibly, carrying out Allah's commands, and avoiding all prohibitions (Susetyo, 2016). However, the primary goal of this exercise was to encourage a love for the Qur'an. Thus, everything done with the Qur'an was not interpreted as a ritual (Zarkasyi, 2020).



Figure 6. Al-Qur'an Activities

A happy bonfire was a supporting event that was the main spirit for students. Bonfires in scouting are a form of outdoor activity, especially at night (Erliani, 2017). Bonfire activities can develop psychological aspects in students to be used as a scouting education tool. This activity motivated the children because it was filled with performances from each lot. The appearance of each plot was directed by a teacher's supervisor so that it remains following Islamic teachings. Appearances can be an effective means of moral learning because every element that students see hear, and feel must contain educational values in accordance with Islam. So, the role of the mentor was needed to produce a good performance, educate, and entertain. In addition, the bonfire aims to increase a sense of courage and self-confidence, create an atmosphere of joy and freedom, develop talent and creativity, and foster discipline for performers and spectators (Yuliani, 2016).

Cross-country was an activity aimed at increasing students' love for nature (Figure 8). Through this activity, students were taught to be able to be appreciative of all that Allah SWT has created in nature (Juwantara, 2019). In addition, cross-country made students appreciate nature and the environment more. Cross-country also increased students' togetherness and cohesiveness. Through cross-country, students will gain experience, increase their courage, and hone their social lives (Taubah & Chasanah, 2018).

The post-test, as shown in Figure 9, was the last activity to measure PERSAMI's success in increasing spiritual intelligence (Magdalena et al., 2021). The post-test was a practice exam that consists of reading the Qur'an, practicing prayers, practicing ablution, memorizing short *surah*, and memorizing daily prayers. The competency-standard questions on the pre-test and post-test would be the same. As a result, the comparison of post-test and pre-test scores will show the effectiveness of PERSAMI's efforts. By using pre-test and post-test effectively, PERSAMI activities could be designed to be more focused, maximize the effectiveness of activities and improve the quality of activities. It also gave participants and education providers a better understanding of the impact of activities that have occurred.





Figure 8. Cross-country



Figure 9. Post Test

An integral part of Community Service activities was an evaluation, which was intended to measure the results of the training that has been conducted (Agustianti et al., 2022). The evaluation was carried out through a post-test in the form of a practical exam (Ricci et al., 2019). Looking at the post-test results of students, it appears that there was a significant

effect on increasing spiritual intelligence. This could be seen from the increased competency to read the Qur'an, the increasing number of students who practice ablution and prayer correctly, the increased memorization of short surahs in the Qur'an, the memorization of daily prayers, changes in morals, and being kinder to friends, teachers, and parents. Students also became more familiar with and love nature as a form of gratitude for Allah SWT's creation. The success of the PAR method could be measured from a number of factors involving active participation and positive impact on the problem being addressed. The success of PAR can be measured in a variety of ways, regular evaluation and continuous learning are an integral part of this approach to ensure that the actions taken achieve the desired positive impact.

## CONCLUSION

The PERSAMI community service program has added a new dimension to MI Nurussalam's ongoing endeavors to enrich religious education. Efforts to integrate natural camp activities and educate Islam outside of the classroom demonstrate innovation. Students' enthusiasm for understanding Islamic religious themes and spiritual intelligence improved due to this innovation, which was particularly good for instilling a sense of worship. As a result, from a young age, it was established in them that worship is more than just a ritual. Several attempts have been made to ensure the continuity of the PERSAMI program, including making PERSAMI a mandatory annual event at MI Nurussalam. Based on PERSAMI's success in boosting students' spiritual intelligence and raising enthusiasm for understanding the Islamic religion, this program is worthy of serving as a model for MI and other similar educational institutions. The quality of Islamic religious education has a very important role in shaping the character and morals of Muslim individuals, understanding Islamic values, and providing a solid spiritual foundation. Quality Islamic religious education plays a major role in forming individuals with good character, responsibility, and spiritual awareness. It provides a strong moral and ethical foundation for everyday life as well as a positive contribution to society and the world at large. Quality education helps shape the character and morals of students. The moral and ethical values taught in schools help develop good attitudes and behavior.

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## REFERENCES

- Abidin, A. M. (2019). Pengaruh penerapan kegiatan keagamaan di lembaga pendidikan formal terhadap peningkatan kecerdasan spiritual anak. *An-Nisa: Jurnal Studi Anak Dan Gender*, 12(1), 570–582. <https://doi.org/10.30863/annisa.v12i1.452>
- Afdal, A., & Widodo, H. (2020). Analisis pelaksanaan kegiatan Pramuka di SD Negeri 004 Samarinda Utara tahun 2019. *PENDAS MAHAKAM: Jurnal Pendidikan Dasar*, 4(2), 68–81. <https://doi.org/10.24903/pm.v4i2.399>
- Agustianti, R., Nussifera, L., Angelianawati, L., Meliana, I., Sidik, E. A., Nurlaila, Q., Simarmata, N., Himawan, I. S., Pawan, E., & Ikhrum, F. (2022). *Metode penelitian kuantitatif dan kualitatif*. Tohar Media.
- Amin, A. (2018). Konsep ukhuwwah Islamiyyah sebagai materi PAI. *Ta'dibuna: Jurnal Pendidikan Islam*, 1(1), 29–39.
- Amirrudin, T., Saepuddin, A., & Tsauray, A. M. (2017). Implikasi pendidikan dalam QS Faathir Ayat 32 tentang makna sabiqun bil khairat terhadap kepribadian muslim. *Prosiding Pendidikan Agama Islam*, 3(1), 93–97.
- Anindyarini, A., & Wijayanti, K. D. (2019). Penerapan metode perlombaan tim dengan media permainan kebenaran dan tantangan untuk meningkatkan kemampuan menelaah teks ekposisi pada siswa SMA. *PEDAGOGIA: Jurnal Penelitian Pendidikan*, 22(2). <https://doi.org/10.20961/paedagogia.v22i2>.
- Anjarsari, R., Syahidin, S., & Sumarna, E. (2017). Program gerakan cinta Alquran “genta” dalam mengoptimalkan pendidikan agama Islam di sekolah (Studi deskriptif di SMP Unggulan Al-Amin Ngamprah). *TARBAWY : Indonesian Journal of Islamic Education*, 4(1), 57. <https://doi.org/10.17509/t.v4i1.6992>
- Audina, D., Soleh, D. A., & Sumantri, M. S. (2022). Pendidikan karakter cinta tanah air dan kedisiplinan dalam kegiatan upacara bendera di sekolah dasar DKI Jakarta. *EduStream: Jurnal Pendidikan Dasar*, 5(1), 60–68. <https://doi.org/10.26740/eds.v5n1.p60-68>
- Erliani, S. (2017). Peran gerakan Pramuka untuk membentuk karakter kepedulian sosial dan kemandirian (Studi Kasus di SDIT Ukhwah dan MIS An-Nuriyyah 2 Banjarmasin). *Jurnal Ilmiah Pendidikan Guru Madrasah Ibtidaiyah*, VIII(1), 36–52.
- Fitrah, M., & Luthfiyah, L. (2017). *Metodologi penelitian: Penelitian kualitatif, tindakan kelas & studi kasus*. CV Jejak.
- Hasanah, M. (2021). *Landasan Pendidikan Islam*. CV. Kanhayakarya.

- Herawati, H. (2020). Memahami proses belajar anak. *Bunayya: Jurnal Pendidikan Anak*, 4(1), 27–48.
- Herwani. (2020). Ukhuwah Islamiyah dalam pandangan Al-Qur'an. *Cross-Border*, 3(2), 294–301.
- Ismail, M. I., & Hasan, A. H. (2022). Implementasi standar proses pada mata pelajaran pendidikan agama Islam di sekolah dasar swasta terpadu Bani Rauf Kabupaten Gowa. *Inspiratif Pendidikan*, 11(1), 85–100.
- Jamhuri, M. (2017). Kurikulum PAI multikultural dalam proses pembelajaran prespektif al Qur'an. *Mafhum*, 2(2), 185–308.
- Juwantara, R. A. (2019). Efektivitas ekstrakurikuler pramuka dalam menanamkan karakter jujur disiplin dan bertanggung jawab pada siswa madrasah ibtidaiyah. *Premiere Educandum : Jurnal Pendidikan Dasar Dan Pembelajaran*, 9(2), 160. <https://doi.org/10.25273/pe.v9i2.4994>
- Johansyah, J. (2017). Pendidikan karakter dalam Islam; Kajian dari aspek metodologis. *Jurnal Ilmiah Islam Futura*, 11(1), 85–103.
- Lestari, S. D., & Maunah, B. (2022). Dasar-dasar yuridis sistem pendidikan nasional. *Jurnal Ilmu Pendidikan Sekolah Dasar*, 9(3), 193–204.
- Magdalena, I., Nurul Annisa, M., Ragin, G., & Ishaq, A. R. (2021). Analisis penggunaan teknik pre-test dan post-test pada mata pelajaran matematika dalam keberhasilan evaluasi pembelajaran di SDN Bojong 04. *Jurnal Pendidikan Dan Ilmu Sosial*, 3(2), 150–165.
- Nurfatimah, S. A., Hasna, S., & Rostika, D. (2022). Membangun kualitas pendidikan di Indonesia dalam mewujudkan program sustainable development goals (SDGs). *Jurnal Basicedu*, 6(4). <https://doi.org/10.31004/basicedu.v6i4.3183>
- Nurmiati, N. (2021). *Implementasi kurikulum PAI di sekolah dasar*. PT. Nasya Expanding Management.
- Prihatmojo, A., & Badawi, B. (2020). Pendidikan karakter di sekolah dasar mencegah degradasi moral di era 4.0. *DWIJA CENDEKIA: Jurnal Riset Pedagogik*, 4(1), 142-152. <https://doi.org/10.20961/jdc.v4i1.41129>
- Puspaningrum, Y., Zuhria, S. A., Sulton, M., & Baharudin, M. (2021). Upaya peningkatan kreativitas dan karakter anak islami melalui lomba kreasi santri di TPQ Al Muttaqin Desa Kayen. *Informatika: Jurnal Pengabdian Masyarakat*, 2(2), 83–86.
- Putra, A. D. (2016). Indahnya kebersamaan dengan shalat berjama'ah. *TAFSERE: Jurnal UIN Alauddin Makassar*, 4(1), 165–175.
- Putri, H. (2023). Pentingnya motivasi dan pengalaman mahasiswa dalam mengikuti lomba MTQ Nasional Gebyar Qur'ani. *Nautical : Jurnal Ilmiah Multidisiplin*, 1(10), 1098–1103.
- Qolbiyah, A., Mansur, A., & Bakar, A. (2022). Inovasi dan modernisasi kurikulum dalam pembelajaran pendidikan agama Islam. *Jurnal Penelitian Ilmu Pendidikan Indonesia*, 1(2), 301–309.
- Rauhah, L., Ngulwiyah, I., & Nurahman, I. (2021). Implementasi kompetensi kepribadian guru dalam penguatan karakter religius peserta didik melalui pembiasaan di kelas IV MIN 2 Serang. *Primary: Jurnal Pendidikan Guru Sekolah Dasar*, 10(6), 1643–1653.
- Ricci, L., Lanfranchi, J. B., Lemetayer, F., Rotonda, C., Guillemain, F., Coste, J., & Spitz, E. (2019). qualitative methods used to generate questionnaire items: A systematic review. *Qualitative Health Research*. <https://doi.org/10.1177/1049732318783186>
- Rusli, R. (2021). Pengaruh teknologi terhadap dekadensi moral anak. *SYATTAR*, 2(1), 63–76.
- Sa'diyah, T. (2022). Penerapan pembelajaran pendidikan agama Islam dalam membentuk karakter pribadi yang Islami. *KASTA: Jurnal Ilmu Sosial, Hukum, Agama, Budaya Dan Terapan*, 2(3), 148–159.
- Saepudin, A., Setiawati, A. F., & Qoyim, N. (2022). Pengabdian mahasiswa di masyarakat terpencil (Studi PAR di Cigarukgak, Desa Sukatani, Kecamatan Sukatani, Kabupaten Purwakarta). *ADINDAMAS: Jurnal Pengabdian Kepada Masyarakat*, 1(2), 128–139. <https://doi.org/10.37726/adindamas.v1i2.323>
- Susetyo, A. M. (2016). Pelatihan membaca Al-Qur'an yang BAIK. *Jurnal Pengabdian Masyarakat Ipteks*, 2(1), 34–42.
- Taubah, M., & Chasanah, U. (2018). Peranan gerakan Pramuka dalam menanamkan sikap nasionalisme di madrasah ibtidaiyah (Studi kasus Di MIN Kudus TAHUN PELAJARAN 2017/2018). *ELEMENTARY: Islamic Teacher Journal*, 6(2), 337–354.
- Yuliyanti, Y., Damayanti, E., & Nulhakim, L. (2022). Perkembangan kurikulum sekolah dasar di Indonesia dan perbedaan dengan kurikulum di beberapa negara. *Lingua Rima: Jurnal Pendidikan Bahasa Dan Sastra Indonesia*, 11(3), 95–106.
- Yusanto, Y. (2020). Ragam PENDEKATAN PENELITIAN KUALITATIF. *Journal of Scientific Communication (jsc)*, 1(1), 1–13. <https://doi.org/10.31506/jsc.v1i1.7764>
- Yusrie, C. S., Noviansyah, I., & Nasrudin, M. (2021). Minat remaja dalam mengikuti shalat berjamaah. *Mimbar Kampus: Jurnal Pendidikan Dan Agama Islam*, 20(1), 1–12. <https://doi.org/10.47467/mk.v20i1.437>
- Zarkasyi, H. F. (2020). *MINHAJ Berislam, dari ritual hingga intelektual*. Institut for The Study of Islam Thought and Civilizations (INSISTS).

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# Assisting 10-week CLIL enrichment program for Islamic-affiliated primary school students

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## ABSTRACT

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Teaching English to Young Learners starts to reach its growth as parents want their children to be competent in one of the 21st century skills, it is being communicative. Having the ability to communicate in one foreign language, particularly English, is considered important for many parents whose children study at Islamic-affiliated schools, other than Arabic skill. However, English teaching at primary school level is still limited in terms of its teaching duration, they learn only for 90 minutes per week. Therefore, this community service aims at providing more opportunities for primary graders at SD Aisyiyah Kota Malang to learn English through Content Language Integrated Learning (CLIL) enrichment program which was done on weekend class that lasted for ten consecutive meetings. The program was conducted in as semester, starting from July up to December 2023. Further, the methods implemented were analyzing students' learning needs, designing science-based topics as teaching material, developing materials, implementing the learning design through 10-week teaching, and evaluating the program. Results show that the content of the subject at the school was taught in English. Some materials designed for this project were about science, thus, in this program students discussed the topic of science in English. Also, the content was designed by integrating Islamic elements, the topics were animals mentioned in the Quran such as camel, whale, bird, donkey, and crow. At the end of the session, this activity has gained a positive response from students, content teacher, homeroom teacher, and also the school principal. This indicates that the community service which was designed in the form of the enrichment program for weekend class was effectively run.

### Kata Kunci

CLIL  
Pengajaran bahasa Inggris untuk anak-anak  
Program pengayaan Sekolah Dasar Islam

**Program pengayaan CLIL selama 10 pekan bagi siswa sekolah dasar Islam.** Pengajaran Bahasa Inggris untuk anak-anak mulai mencapai pertumbuhannya karena orang tua ingin anak-anak mereka kompeten dalam salah satu keterampilan abad ke-21, yaitu keterampilan komunikatif. Kemampuan berkomunikasi dalam satu bahasa asing, khususnya bahasa Inggris, dianggap penting bagi banyak orang tua yang anaknya bersekolah di sekolah Islam, selain kemampuan bahasa Arab. Namun pengajaran bahasa Inggris di tingkat sekolah dasar masih terbatas dalam hal durasi pengajarannya, mereka hanya belajar selama 90 menit per minggu. Oleh karena itu, pengabdian pada masyarakat ini bertujuan untuk memberikan kesempatan lebih luas kepada siswa kelas SD SD Aisyiyah Kota Malang untuk belajar bahasa Inggris melalui program pengayaan Content Language Integrated Learning (CLIL) yang dilakukan pada kelas akhir pekan yang berlangsung selama sepuluh pertemuan berturut-turut. Kegiatan program pengabdian ini diselenggarakan selama satu semester dari Bulan Juli 2023 sampai Desember 2023. Terlebih, Metode yang dilakukan adalah menganalisis kebutuhan belajar siswa, merancang topik berbasis sains sebagai bahan ajar, mengembangkan materi, melaksanakan desain pembelajaran melalui pengajaran 10 minggu, dan mengevaluasi program. Hasil menunjukkan bahwa konten atau mata pelajaran di sekolah diajarkan dalam bahasa Inggris. Di akhir sesi, kegiatan ini mendapat respon positif dari siswa, guru materi, dan wali kelas, serta kepala sekolah. Hal ini merupakan indikasi bahwa pengabdian masyarakat yang merancang program pengayaan kelas akhir pekan berjalan efektif.

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## INTRODUCTION

Teaching English since early age has been done by many researchers. However, little attention is put on how it is integrated to other subjects such as science. Teaching English through science can build young learners' communicative competences—the competence about the knowledge and the context of a language is operated. In such notion, the concept of Content and Language Integrated Learning (CLIL) can be a way to support the belief that young learners will successfully learn a second language (Coyle, 2015; Dalton-Puffer et al., 2021; Farah & Khoiriyah, 2023, Marsh & Langé 2000). Eventhough there is a debate whether or not a second language is appropriately taught to young learners, numerous research results reveal that at least a great attainment on language learning is proven to be successful in young learners is in the aspect of pronunciation and grammar compared to their counterpart, adult language learners (Ellis, 2008; Heras & Lasagabaster, 2015; Nugroho, 2020; Xanthou, 2011).

In a similar vein, teaching English to young learners can also be a medium for intercultural communicative competence. Mattson and Norrby (2013) assert that student will gain greater achievement on intercultural communicative competence when enough time is allocated to produce the target language in a communicative context. In this case, teachers in Islamic school context can enrich their students with materials that support the discourse used in that school, i.e Islamic cultures and values. If happens other cultures are infused in the teaching process, the curriculum must be planned very carefully (Byram, 2008; Liao & Li, 2023; Torres-Velasquez et al., 2023). Thus, the idea of integrating science with Islamic content is highly suggested.

This effort supports the implementation of Culturally Responsive Teaching (CRT) that in teaching English, teachers cannot impose the idea of teaching the culture of the center (Western) but they also need to take a serious concern on learners' background and school context. In its implementation, the work of Gay (2018), Gay (2015), and Ladson-Billing (2009) view that English teachers in using the CRT use learners' linguistics and cultural resources to support their learning gain and personal development. CRT teachers value their learners' personal experience and interest to address cultural gap in English learning. The cultural gap in English teaching lies on how Western values can be brought in the textbook and methods. In such a way, teachers in the periphery culture, i.e Asian culture needs to have this awareness.

Some efforts to infuse local cultures into English teaching have been undertaken by number of researchers. Integrating Islamic content into English instruction has become a topic of growing interest, as evidenced by the increasing number of academic works exploring this research area. For example, Indonesian researchers have tried to inculcate Islamic values through chapters in the Quran, Islamic topics, and framework of instilling Islamic values into English instruction (Anshari & Widiantoro, 2020; Asmawati & Riadi, 2022; Madkur & Albantani, 2017). In a larger area, this attempt has also been initiated in other Muslim countries like Malaysia and Jordan through English teaching need analysis of Islamic content for Muslim students (Bataineh et al., 2016; Hassim & Aziz, 2021). The idea of CRT is further highlighted for number of reasons, as it caters inclusive teaching strategy, values students' cultural references, identities, backgrounds, and empowers minority students; thus, CRT can create a meaningful learning environment and help students attain academic success (McKoy et al., 2017; Rhodes, 2017; Villegas & Lucas, 2002).

However, this present study is different from the previous related research in the aspect of its context and methodology. The context where this research takes place is situated in Islamic-affiliated primary school where English is taught for young learners. Secondly, in its method, this study empowers the primary graders with series of simultaneous training on the use of Islamic topics which are derived from students' religious book, the Quran.

To provide more opportunities for students at primary school level with English exposure, enrichment programs need to be conducted. To address this concern, a program of 10-week CLIL enrichment program that infuse Islamic content was done. This community service program was held by involving English teachers, home-room teachers, primary school graders, and pre-service teachers (students of PMM Mitra Dosen program). The program is supported by the Directorate of Community Service and Research Universitas Muhammadiyah Malang (DPPM-UMM). In addition, the program is implemented to support the Sustainable Development Goals (SDGs) number 4 (United Nation, n.d.), it is quality education, mainly to improve students' English competence in receptive and productive skills. The program aims at providing more opportunities for primary graders in operating their English competence so that it prepares them for higher level of education. Thus, this community service can contribute to the improvement on students' English skill acquisition as well as the enrichment of English teaching quality at the school partner.

## METHOD

This community services aims to assist student teachers and English teachers in providing an extracurricular for primary school students. The school partner is SD Aisyiyah Kota Malang, located at Jalan Gajayana III D / 570 D Dinoyo, Lowokwaru District, Malang (See Figure 2). This community services are follow-up program from the previous one (Farah & Khoiriyah, 2023; Khoiriyah et al., 2022; Waloyo et al., 2021). Hence, in this year, based on the school's need and demand, the community service program is designed in integrating CLIL (Content and Language Integrating Learning) approach in English classes, named English CLIL program. The students in higher level of primary school, consisting of fourth grade, fifth grade and sixth grade. Further, the total number of students involved in this CLIL program were 45

**Commented [J5]:** Various community service and empowerment activities must have novelty (have innovation and creativity) so that they do not just replicate the same activities in different places, have measurable results and impacts on society, and support the achievement of the goals set forth in the Sustainable Development Goals (SDGs). SDGs are a global action plan agreed by world leaders, to end poverty, reduce inequality, and protect the environment. [The SDGs contain 17 Goals and 169 Targets](#), so that each article must be linked to these goals and targets (as stated in the contribution statement).

students. To implement weekly program, the project team were collaborated with student teachers of English Language Education Department, Universitas Muhammadiyah Malang for assisting student to learn English. In total, the project team and school partner involved in this community services in Table. 1.

Table. 1 the participants of community service program

No.	Details	Number of people involved
1.	Project team from lecturers of English Language Education Department	2 lecturers with expertise in TESOL, material development and CLIL
2.	English teachers and home-room teachers from school partner	4 teachers (two English teachers and three home-room teachers)
3.	Student teachers from English Language Education Department	6 student teachers (students who join PMM Mitra Dosen)
4.	Primary school students	45 students
<b>Total</b>		<b>57</b>

The community services were conducted in eight months, starting from March 2023 to October 2023. To implement the community services, there were several stages including analysis, design, development, and implementation. The details are in Figure 1.



Figure 1. The stages in conducting community service program

As it was illustrated in Figure 1, this community service program was conducted in four stages. Firstly, the project team conducted need analysis regarding the schools' condition and need such as the curriculum, students' language input, school facilities and many more. Secondly, the project team and the student teachers of English Language Education Department designed teaching syllabus for 10-week CLIL program based on the result of need analysis. The project team and the student teachers of English Language Education Department designed the teaching materials (e-book and digital quizzes) based on the result of need analysis. Next, the school partner set the program, along with project team and student teacher to implement 10-week CLIL program. The students used e-book and digital quizzes for CLIL activities. Lastly, after implementing the whole program (10 meetings), the project team conducted evaluation by interviewing the students, the home-room teachers and English teacher, and the school principal of SD Aisyiyah Kota Malang.

## RESULTS AND DISCUSSION

### Pre-implementation

#### Analysis

In the pre-implementation phase, the project team conducted three activities namely need analysis, designing, and developing the teaching materials. Based on the result of classroom observation and interview with the school principal, the school partner (SD Aisyiyah Kota Malang, see Figure 2) has encouraged students to learn English by having international collaboration. The international schools that have collaborated with SD Aisyiyah Kota Malang among others are primary schools in India (Lakshya International School Andrapradesh and Vidya Bharati School Ghaziabad) and Korea Selatan (Dajeong Primary School). In the near future, this school is also projected to have collaboration with schools in the US, Japan, and Saudi Arabia. The effort of this international projection is not only aimed at exposing students to improve their English competence but also to increase their Arabic. Thus far, the international collaboration has invited students from 3rd to 6th graders to perform speaking English and storytelling via a virtual platform, zoom.



Figure 2. School visit by the project team to SD 'Aisyiyah Kota Malang

Further, the project team formulated the problems encountered as well as its possible solution in the table 1. The problems encountered were mostly related to the need for international exposure for student, the need for contextual teaching resources based on the school vision and mission (Islamic-affiliated school) and Kurikulum Merdeka, and the need for effective teaching and learning method to improve students' English competence. The project team was in attempt to provide some solutions. One of which is by introducing CLIL program to primary school students in order to enhance their learning process in English and other content subject such as Science, Math and Islamic science ( Table 2).

Table 2. The matrix of problems encountered, solutions, indicators, and outcomes

Problems encountered	Solutions	Indicators	Outcomes
The need for international language exposure for students	Mentoring for the implementation of CLIL program as an enrichment program or extracurricular	100 % Mentoring for the implementation of CLIL program as an enrichment program or extracurricular every week (within 10 week)	Teaching syllabus Ready-use teaching materials and worksheet 10-week meeting of CLIL program
The need for contextual teaching resources based on the school vision and mission (Islamic-affiliated school) and Kurikulum Merdeka	Designing student activity book by integrating English, Islamic content and other content lesson	100%In collaboration with students of PMM Mitra Dosen program and English teachers of SD Aisyiyah Kota Malang designing student activity book	Student activity book Digital worksheet
The need for effective teaching and learning method to improve students' English competence	Implementing digital students' workbook and interactive quizzes to enhance students' engagement in learning English	70% English teacher and home-room teachers are able to use and facilitate their students	ready use digital interactive quizzes

**Design**

Design is the second phase of ADDIE. This phase will begin with the design of digital teaching materials, which will be created in accordance with the findings of earlier needs, curriculum, and student analyses. In the design phase, the project team designed the teaching materials into a digital student workbook. The teaching materials varied based on the result of need analysis. In order to implement CLIL approach, the teaching materials are integration of English, math, science and Islamic value. Since the implementation of CLIL program was divided into 2 phases, based on the school needs, the syllabus also was designed into two parts. The details of the syllabus are presented in Table 3. The syllabus of topic animals stated in the Quran are presented in Table 4, for the second phase of CLIL program. It was implemented starting from meeting 6 to meeting 10.

Table 3. Syllabus for first phase of CLIL program

Chapter	Topic	Activity	Content materials
1	Introduction	Singing a classroom password Self-introduction	<b>Islamic value</b> (starting activity by reciting <i>bismillah</i> , and saying <i>hamdalah</i> – to be grateful in day-to-day activities)
2	Dream jobs	Presenting the future dream jobs Writing a letter to friends in India	<b>Islamic value</b>
3	Gardening	Learning about science (Part of plants) Global warning Gardening	<b>science</b> (Part of plants)
4	My favorite animals	Learning about lifecycle of butterfly Learning math	<b>Science</b> (lifecycle of butterfly) <b>Math</b> (addition and multiplication)
5	Save our earth	Learning about water pollution Presenting a poster	<b>Science</b> (water pollution)

Table 4. Syllabus for second phase of CLIL program

Chapter	Topic	Activity	Islamic Value
1	Whale	Reading Text CROWD Concept Interactive Quiz	Prophet Yunus story and the whale (Al-Anbiya: 87)
2	Birds	Reading Text CROWD Concept Interactive Quiz	Birds are symbol of Allah's power. (Al-Mulk: 19)
3	Donkey	Reading Text CROWD Concept Interactive Quiz	Allah's command of not rising voices like donkey. (Luqman: 19)
4	Camel	Reading Text CROWD Concept Interactive Quiz	Camel is one of the amazing creations that people can take benefit from it. (Al-Ghasiyah: 17)
5	Crow	Reading Text CROWD Concept Interactive Quiz	Allah sent a crow searching in the ground to show the son of Adam how to hide the disgrace of his brother. (Al-Maida: 31)

### Development

In this phase, the project team developed the syllabus into teaching materials. The teaching materials were integrated in online quiz and digital student workbook as it was illustrated in Figure 3.

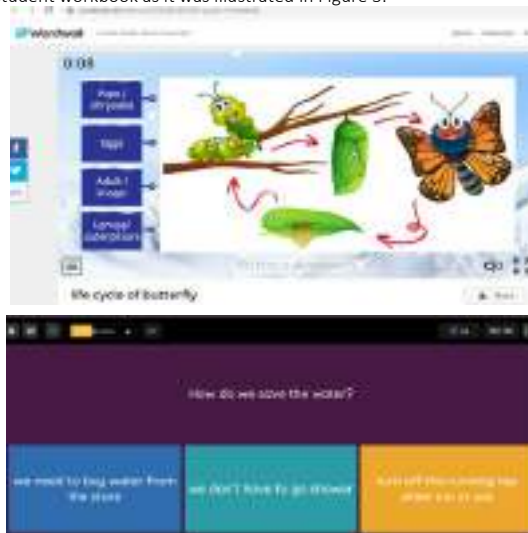


Figure 3. The exemplary of adopted digital learning sources from wordwall.net and quizzes.com

Figure 4 is the sample of material that has been developed by the project team.



Figure 4. an exemplary of digital workbook developed by the project team

### Implementation

#### 1. Students were asked to sing a long opening classroom password in every meeting

Students were given a song to open the class. This song is the opening classroom password. This song is an adaptation of a popular children's song with the lyrics changed to English and given Islamic values. In this CLIL program activity, the song chosen was a song from the famous movie "Spongebob Squarepants". The lyrics of opening classroom password are as follows:

Are you ready students? (Aye, aye Teachers)  
I can't hear you (aye, aye Teachers)  
Ooh  
Who are ready to learn today?  
(We are Marvelous)  
Intelligent and excited are we  
(We are Marvelous)  
We learn English with so much fun  
(We are Marvelous)  
Let's start the class with **basmalah**  
(We are Marvelous)  
We are Marvelous  
We are Marvelous  
We are Marvelous  
We are Marvelous

Meanwhile, the opening classroom password are as follows:

Goodbye my friend,  
goodbye teacher,  
Let's go home, let's go home,  
Don't forget to say thanks,  
don't forget to say thanks,  
Thanks teacher,  
Thanks my friends, **alhamdulillah**

#### 2. Students learned introducing themselves and their dream jobs

The agenda for the second meeting is about dream jobs. In connection with the material at the first meeting, which was introduction, students were asked to introduce themselves and their dream jobs. Students wrote down the introduction to make it into a letter, which later would be sent to pen pal friends in India. The student-teachers (PMM

Mitra Dosen members) facilitated learning with examples of introductory sentences that students can implement, as well as providing paper with attractive designs to use as letters.

**3. Students learned science and got involved in out-door activity (gardening)**

The agenda for the third meeting was part of plants. The students firstly did online interactive quizzes related to parts of plant. After that, the student-teachers explained and drilled the students some words to describe parts of plant. In this activity, students were encouraged to not only learning English but also learning content subject (science). Further, one by one, students presented their speaking activities by explain part of plants in front if the class. The student-teachers gave some hints as presentation starter such as each plant has six important parts called the root, stem, leaves, flowers, fruits and seeds. The students were formed into five groups, and the student-teacher distributed plant seeds to each group. Students learn to plant using the planting media provided. After the gardening activity, the students were asked to talk about their gardening activities on a paper (Figure 5).



Figure 5. After studying science (Part of Plant), students were asked to plan a flower in their school yard

**4. Students learned about science (life cycle of butterfly) and did some online quizzes**

The agenda for the fourth meeting was to learn about the life cycle of butterflies. The students were divided into four groups, each group guided by one of the members of PMM Mitra Dosen. Each group learned about the butterfly life cycle, followed by quiz time using each member's laptop. After the group discussion, students were learning about multiplication with the same theme, the life cycle of butterflies.

**5. Students learned about water pollution and created a public campaign related to environment**

The agenda for the fifth meeting was to learn about water pollution. Students at SD Aisyiyah learned about the causes, impacts, and types of water pollution. Besides that, students also learned various new vocabulary terms regarding water pollution. At the end of the activity, the students made posters with the theme "Save the environment and save our earth". The aim was for the students to be more aware of their surroundings and maintain a clean environment (Figure 6).



Figure 6. The students presented their work under the theme "Save the environment and save our earth"



#### 6. Students learned some animals mentioned in the Quran

In the sixth until tenth meeting, students learned some animals mentioned in the Quran such as camel, whale, donkey, birds, and crow. In those meeting, students were set to read an e-book about those aforementioned animals using a concept of read aloud activity, CROWD (Completion, Repeat, Open-ended question, Wh-question, and Distancing). In its implementation, students were divided into several groups and assisted by one student-teacher in discussing the content of the book. At the end of every topic, students were assigned to complete an interactive quizz designed using online platform such as quizziz, educandy, and wordwall. This activity was also a form of formative assessment that assess students' comprehension of a topic that recently read (Figure 7).



Figure 7. The students learned some animals mentioned in the Quran

#### Post-implementation

##### Evaluation

At the end of program, the project team interviewed the school principal, home-room teacher, student-teacher and students to have feedback on its implementation. The school principal responded positively towards the enrichment program as it gives a new direction of English learning at the school.

"I asked the students about the program they joined and they are very happy as the activities designed are new for them such as do gardening in English and they seem to enjoy learning English. That's what we want our students to instill in themselves, love learning English. With this, we are positive that we are able to support our international program at the school, also encourage our students to become part of global citizen."

Similarly, the home-room teacher who enthusiastically supervise the enrichment program feel assisted with the program.

"I observe that the student-teacher from PMM along with the project team have actively and appropriately designed the learning material that is contextualized to our students' English level and importantly the team has also created the content into more specific that is congruent to our school context. I am contended when I see my students were engaged in the activities. I asked them whether they enjoy the class and most of them nodded their head."

In other session, one student-teacher were also invited to share their hands-on experience in teaching English at the school partner.

"Thanks to the project team who supervised us in designing the material and evaluating our day-to-day teaching so that we learn handling primary graders. Also, we learn a lot how to do classroom management and in fact it is practically not that easy teaching young learners. We need to dedicate our energy to the fullest. The use of the designed materials is also helpful to our teaching." (STR1)

"I am actually a bit an introvert person, but I cannot really stand with the kids because they are very inquisitive so that I need to respond their every questions. Therefore, I also try my best to find the answers when they raised a question which I do not know the specific term in English." (STR2)

Finally, one of the students were randomly asked to have their impression joining the enrichment program.  
“The activity I like the most were gardening, doing some quizzes and games, and participating in group work. I enjoy reading the animals stated in the Quran. I know that birds are toothless, they do not chew their food, they just swallow it right away, that is interesting.” (ST-AMR)

“I feel enthusiastic learning English with the student-teachers, they are very kind and helpful. With that, I am keen on completing the activities assigned to me.” (ST-ASH)

The enrichment program has attracted school partner’s attention. Teachers were all assisted with the material designs and teaching practices, students’ enthusiasm in practicing their oral skills by interacting with their peers and teachers is also observed. This community service aims to promote CLIL approach in primary school partner. The educational approach known as Content and Language Integrated Learning (CLIL) facilitates the simultaneous development of content and language (Coyle et al., 2010; Dalton-Puffer, 2011; Meyer et al., 2015). Through implementing CLIL program as an enrichment program for the school partner, the students were expected to gain more language and content knowledge input. This finding is consistent with previous research as well (Agustín-Llach & Canga Alonso, 2016; Castellano-Risco et al., 2020; Fernández-Sanjurjo et al., 2019; Gierlinger & Wagner, 2016; Jafarigohar et al., 2022; Tragant et al., 2016), positing that implementing CLIL approach enabled learners to enrich their vocabulary in target language. Therefore, the framework of 4C CLIL was integrated into the teaching and learning process. This 4C framework consists of Content, Cognition, Communication and Culture. In this CLIL program, take an example, for *Content* and *Cognition*, students were stimulated to improve their higher order thinking skills. By solving some math questions, teachers encouraged students to have more cognitive load. Students also asked to comprehend Science knowledge such as part of plant, ecosystem, water pollution. It was expected that students learned both language and content materials. Meanwhile, for *Communication*, group work and presentation were a mandatory of learning activity in every meeting. By participating in group work and classroom presentation, students were facilitated to improve their speaking skills so that they had more effective communication skills in English. Lastly, regarding *Culture*, the teaching materials were adapted related to the school context. The integration Islamic values in learning materials such as animal named in the Qur’an, was projected to promote more-relevant and contextualized foreign language learning.

Further, teachers use games and CLIL activities to engage students’ interests and improve their skills. Using games for young learners were strongly suggested to create stress-free learning environment (Behnamnia et al., 2020; Liu et al., 2021; Sun et al., 2021). This learning activity is relevant to the context of CLIL in primary schools as CLIL centers on using language *with* and *through* content, rather than treating language *as* content (Anderson et al., 2015). Using digital quizzes, the students were more engaged in learning process. They enjoyed to learn the language as well as the content materials unconsciously. According to Prensky (2011), young learners have an innate need to play games. Effectively designed educational games facilitate learning by offering pupils amusement, fervent engagement, inspiration, inventiveness, and interpersonal engagement. Those, in this 10-week CLIL program, the project team provides students with various educational games using quizzes, worlwall.net, canva and other relevant digital learning sources. The provided games were also designed in a group-work. Playing games makes students more willing to communicate both within and outside of the classroom. This is consistent with work of (Liu et al., 2021), asserting that games are very effective and powerful instruments that promote collaborative learning. In a nutshell, this collaborative learning supports the effectiveness of CLIL approach in relation to *Communication* (4C framework).

Lastly, CLIL concept is applicable to be integrated in English teaching at primary school level for two main reasons that CLIL is combining subject and language learning in one go, so learning a language will be more efficient and meaningful; second, another CLIL element is culture, that in English teaching, teachers are supposed to accommodate students’ culture. Cultural element is what matters in language learning. Using students’ cultural background is highly suggested in language classroom as it becomes a hook for students’ brain in associating their background knowledge to the new ones. This idea is supported by Culturally Responsive Pedagogy proponents who assert that English language teachers are encouraged to design their teaching by taking a serious concern on students’ cultural and linguistic background which includes their life experiences (Gay, 2018; Ladson-Billing, 2009; Villegas & Lucas, 2007; Ladson-Billing, 2006). Another urgency of infusing students’ culture in Islamic-affiliated school is mainly because English teaching has an association to ‘other values and ideologies’ which is different to Islamic worldview. English teaching is ideology-sensitive as it is not free from political and social condition (Makoni & Pennycook, 2005), it is also linked to Western discourse (Varghese & Johnston, 2007; Pennycook & Makoni, 2005; Pennycook & Coutand-Marin, 2003); whereas students’ culture at Islamic school upholds Islamic value and Eastern culture. Thus, this community service implies that teachers at Islamic-affiliated school should be aware of such issues, their main jobs are not only teaching students to be proficient in English but also to teach English in appropriately designed activities.

## CONCLUSION

By providing science and Islamic value in learning materials of English enrichment program to primary graders at SD Aisyiyah Kota Malang, this community service highlights the implementation of CLIL approach for young learners. The 10-week CLIL program was implemented well, according to the results, which also shows that both the students and the school partner provided positive remarks. This study also emphasizes the fact that an enrichment program for English exposure such as CLIL program in primary schools, serves a variety of purposes, such as fostering language acquisition, content learning, and cultural awareness. This cultural awareness is crucial to provide more relevant teaching and learning activities at Islamic-affiliated school. Additionally, digital games are also used to encourage entertaining learning and increase student involvement during class sessions. The findings of this study may offer pedagogical guidance to EFL instructors—more especially, primary school teachers at Islamic school context and CLIL practitioners.

## ACKNOWLEDGEMENT

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## REFERENCES

- Anderson, C. E., McDougald, J. S., & Cuesta Medina, L. (2015). CLIL for young learners. *Children Learning English: From Research to Practice*, 2000, 137–151. <https://doi.org/10.4324/9781003173151-19>
- Anshari, M. Z., & Widyantoro, A. (2020). Inculcating Islamic values contented in Qs. Luqman through english speaking materials. *Journal of Education and Learning (EduLearn)*, 14(1), Article 1. <https://doi.org/10.11591/edulearn.v14i1.14285>
- Asmawati, A., & Riadi, A. (2022). Integrating Islamic values into english materials. *English Language, Linguistics, and Culture International Journal*, 2(3), Article 3. <https://doi.org/10.24252/elstic-ij.v2i3.34684>
- Agustin-Llach, M. P., & Canga Alonso, A. (2016). Vocabulary growth in young CLIL and traditional EFL learners: evidence from research and implications for education. *International Journal of Applied Linguistics (United Kingdom)*, 26(2), 211–227. <https://doi.org/10.1111/ijal.12090>
- Behnamnia, N., Kamsin, A., Ismail, M. A. B., & Hayati, A. (2020). The effective components of creativity in digital game-based learning among young children: A case study. *Children and Youth Services Review*, 116(March), 105227. <https://doi.org/10.1016/j.childyouth.2020.105227>
- Bataineh, R., Jaber, E., & Bataineh, R. (2016). The Compatibility of total English with the Arab Islamic culture as Revealed by content analysis and Jordanian EFL instructors' and students' views. *International Journal of Language and Applied Linguistics*, 2, 19–43.
- Byram, M. (2008). From foreign language education to education for intercultural citizenship essays and reflections. Great Britain: The Cromwell Press Ltd.
- Castellano-Risco, I., Alejo-González, R., & Piquer-Píriz, A. M. (2020). The development of receptive vocabulary in CLIL vs EFL: Is the learning context the main variable? *System*, 91. <https://doi.org/10.1016/j.system.2020.102263>
- Coyle, D. (2015). Strengthening integrated learning: Towards a new era for pluriliteracies and intercultural learning. *Latin American Journal of Content and Language Integrated Learning*, 8(2), 84–103. <https://doi.org/10.5294/laclil.2015.8.2.2>
- Coyle, D., Hood, P., & Marsh, D. (2010). *Content and language integrated learning*. Cambridge.
- Dalton-Puffer, C. (2011). Content-and-language integrated learning: From practice to principles? *Annual Review of Applied Linguistics*, 31, 182–204. <https://doi.org/10.1017/S0267190511000092>
- Ellis, R. (1994). *The study of second language acquisition*. Oxford: University Press.
- Farah, R. R., & Khoiriyah. (2023). Implementation of CLIL program in Islamic affiliated primary school: Teaching assistants project. *IDEAS: Journal on English Language Teaching and Learning, Linguistics and Literature*, 10(1), 92–103. <https://doi.org/10.24256/ideas.v11i1.3691>
- Fernández-Sanjurjo, J., Fernández-Costales, A., & Arias Blanco, J. M. (2019). Analysing students' content-learning in science in CLIL vs. non-CLIL programmes: empirical evidence from Spain. *International Journal of Bilingual Education and Bilingualism*, 22(6), 661–674. <https://doi.org/10.1080/13670050.2017.1294142>
- Gay, G. (2018). *Culturally responsive teaching: Theory, research, and practice*. Teachers College Press.
- Gay, G. (2015). The what, why, and how of culturally responsive teaching: International mandates, challenges, and opportunities. *Multicultural education review*, 7(3), 123–139. [10.1080/2005615X.2015.1072079](https://doi.org/10.1080/2005615X.2015.1072079)

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- Gierlinger, E. M., & Wagner, T. A. (2016). The more the merrier – revisiting CLIL-based vocabulary growth in secondary education. *Latin American Journal of Content & Language Integrated Learning*, 9(1), 37–63. <https://doi.org/10.5294/lacil.2016.9.1.3>
- Hassim, S. H., & Aziz, A. A. (2021). Using Soleh English (SE) teaching materials with the integration of cultural and Islamic values: Islamic preschool teachers' voices. *Malaysian Journal of Social Sciences and Humanities (MJSSH)*, 6(4), Article 4. <https://doi.org/10.47405/mjssh.v6i4.733>
- Heras, A., & Lasagabaster, D. (2015). The impact of CLIL on affective factors and vocabulary learning. *Language Teaching Research*, 19(1), 70–88. <https://doi.org/10.1177/1362168814541736>
- Jafarigohar, M., Divsar, H., & Etemad, P. (2022). The effect of CLIL context on the primary education EFL receptive and productive lexical growth. *Language Teaching Research*, 00(0), 1–25. <https://doi.org/10.1177/13621688221078997>
- Ladson-Billings, G. (2006). Yes, but how do we do it? Practicing cultural relevant pedagogy. *ESED 5234 - Master List*. 37. <https://digitalcommons.georgiasouthern.edu/esed5234-master/37>
- Ladson-Billings, G. (2009). *The dreamkeepers: Successful teachers of African American students*. San Francisco, CA: Jossey-Bass. <https://eric.ed.gov/?id=ED373128>
- Liao, H., & Li, L. (2023). Facilitating EFL learners' intercultural competence through culturally responsive teaching in oral English classrooms. *System*, 115. <https://doi.org/10.1016/j.system.2023.103070>
- Liu, F., Vadivel, B., Rezvani, E., & Namaziandost, E. (2021). Using games to promote English as a foreign language learners' willingness to communicate: Potential effects and teachers' attitude in focus. *Frontiers in Psychology*, 12(October), 1–10. <https://doi.org/10.3389/fpsyg.2021.762447>
- Madkur, A., & Albantani, A. M. (2017). Instilling Islamic values in foreign language teaching: An Indonesian context. *ICEMS*, 97–103. <https://doi.org/10.2991/icems-17.2018.20>
- Makoni, S., & Pennycook, A. (2005). Disinventing and (re) constituting languages. *Critical Inquiry in Language Studies: An International Journal*, 2(3), 137–156. [https://doi.org/10.1207/s15427595cils0203\\_1](https://doi.org/10.1207/s15427595cils0203_1)
- Marsh, D., & Langé, G. (2000). *Using languages to learn and learning to use languages*. Finland: University of Jyväskylä, 88, 36–39. <http://clilcompendium.com/1uk.pdf>
- Mattsson, A. F., & Norrby, C. (2013). Language acquisition and use in multilingual contexts. *Theory and Practice Language Policy in Practice View project Grammar in interaction View project*. <https://lucris.lub.lu.se/ws/portalfiles/portal/5329199/4075031.pdf>
- McKoy, C. L., MacLeod, R. B., Walter, J. S., & Nolker, D. B. (2017). The Impact of an In-Service Workshop on Cooperating Teachers' Perceptions of Culturally Responsive Teaching. *Journal of Music Teacher Education*, 26(2), 50–63. <https://doi.org/10.1177/1057083716629392>
- Meyer, O., Coyle, D., Halbach, A., Schuck, K., & Ting, T. (2015). A pluriliteracies approach to content and language integrated learning – Mapping learner progressions in knowledge construction and meaning-making. *Language, Culture and Curriculum*, 28(1), 41–57. <https://doi.org/10.1080/07908318.2014.1000924>
- Nugroho, A. (2020). Content and Language Integrated Learning practice in English for Accounting course. *IJET (Indonesian Journal of English Teaching)*, 9(2), 172–181. <https://doi.org/10.15642/ijet.2020.9.2.172-181>
- Pennycook, A., & Makoni, S. (2005). The modern mission: The language effects of Christianity. *Journal of Language, Identity & Education*, 4(2), 137–155. [https://doi.org/10.1207/s15327701jlie0402\\_5](https://doi.org/10.1207/s15327701jlie0402_5)
- Pennycook, A., & Coutand-Marin, S. (2003). Teaching English as a missionary language. *Discourse: Studies in the cultural politics of education*, 24(3), 337–353. <https://doi.org/10.1080/0159630032000172524>
- Prensky, M. (2011). *Fun, play and games: What makes games engaging*. New York: Digital Game-Based Learning. McGraw-Hill.
- Rhodes, C. M. (2017). A validation study of the culturally responsive teaching survey. *Universal Journal of Educational Research*, 5(1), 45–53. <https://doi.org/10.13189/ujer.2017.050106>
- Sun, L., Ruokamo, H., Siklander, P., Li, B., & Devlin, K. (2021). Primary school students' perceptions of scaffolding in digital game-based learning in mathematics. *Learning, Culture and Social Interaction*, 28(August 2020), 100457. <https://doi.org/10.1016/j.lcsi.2020.100457>
- Torres-Velasquez, D., Lobo, G., Parker, I. McCaskey, R., & Robichaux-Davis, R. R. (2023). "Culturally responsive mathematics teaching and English language learners." *Mathematics Teacher: Learning and Teaching PK-12*, 115(9). <https://doi.org/10.5951/mtlt.2022.0171>
- Tragant, E., Marsol, A., Serrano, R., & Llanes, À. (2016). Vocabulary learning at primary school: a comparison of EFL and CLIL. *International Journal of Bilingual Education and Bilingualism*, 19(5), 579–591. <https://doi.org/10.1080/13670050.2015.1035227>
- United Nation. (n.d). *The 17 goals*. Retrieved October 30, 2023, from <https://sdgs.un.org/goals>. at 13.29
- Varghese, M. M., & Johnston, B. (2007). Evangelical Christians and English language teaching. *TESOL Quarterly*, 41(1), 5–31. <http://www.jstor.org/stable/40264329>
- Villegas, A. M., & Lucas, T. (2002). Preparing culturally responsive teachers: Rethinking the curriculum. *Journal of Teacher Education*, 53(1), 20–32. <https://doi.org/10.1177/0022487102053001003>

- Villegas, A. M., & Lucas, T. (2007). The culturally responsive teacher. *Educational leadership*, 64(6), 28. <https://eric.ed.gov/?id=EJ766361>
- Xanthou, M. (2011). The impact of CLIL on L2 vocabulary development and content knowledge. *English Teaching: Practice and Critique*, 10(4), 116–126.