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Improving the quality of learning through strengthening the lesson study community based on "Competition exploration"

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ARTICLE INFO	ABSTRACT
<p>Article history Received: 2021-12-30 Revised: 2022-05-18 Accepted: 2022-10-14 Published: 2022-11-15</p> <p>Keywords Competition exploration Lesson Study for Learning Community Quality of learning</p>	<p>Key Performance Indicators no. 7 provide direction for the application of problem-solving learning methods, and recommend implementing project-based group learning (team-based projects). Implementation of collaborative learning activities can be carried out through the Lesson Study for Learning Community method. Collaboratively, all existing LS teams carry out planning, observation, and reflection. This activity was aimed to analyze the improvement of the quality of collaborative learning in lesson study communities in Muhammadiyah schools throughout Central Java based on "Competition Exploration". Implementation of activities in the field begins with Lesson Study workshops, learning models, writing scientific articles and IPR. In order to strengthen the article writing skills for teachers of the Lesson Study Team at Muhammadiyah schools throughout Central Java, this community service activity was followed up with a safari in 6 residencies in Central Java. The activity emphasizes assisting in writing scientific articles and submitting IPRs. From this assistance, 40 scientific articles and 40 HKI proposals, 40 lesson designs, and learning videos were produced. The community service team has produced 1 scientific article in the field of service, and 18 news articles in the mass media. Thus, this activity was successfully implemented and there was an increase in the quality of collaborative learning in the lesson study community.</p>
<p>Kata kunci Competition exploration Kualitas pembelajaran Lesson Study for Learning Community</p> <div data-bbox="255 1691 383 1814" style="text-align: center;"> </div> <div data-bbox="175 1825 470 1892" style="text-align: center;"> </div>	<p>Peningkatan kualitas pembelajaran melalui penguatan komunitas lesson study berbasis "Competition exploration". Indikator Kinerja Utama (IKU) 7 memberikan arahan penerapan metode pembelajaran pemecahan masalah, dan merekomendasikan pelaksanaan pembelajaran kelompok berbasis proyek. Pelaksanaan pembelajaran kolaborasi kegiatannya dapat dilaksanakan melalui metode <i>Lesson Study for Learning Community</i>. Kegiatan ini bertujuan untuk menganalisis peningkatan kualitas pembelajaran kolaborasi pada komunitas <i>lesson study</i> di Sekolah Muhammadiyah se-Jawa Tengah berbasis "Competition Exploration". Pelaksanaan kegiatan di lapangan diawali dari workshop <i>Lesson Study</i>, model-model pembelajaran, penulisan artikel ilmiah dan HKI. Guna memperkuat keterampilan menulis artikel bagi guru Tim <i>Lesson Study</i> sekolah Muhammadiyah se-Jawa Tengah, kegiatan pengabdian pada masyarakat ini ditindaklanjuti dengan safari pada 6 Karisidenan di Jawa Tengah. Kegiatan menekankan pada pendampingan penulisan artikel ilmiah dan pengajuan HKI. Dari pendampingan ini dihasilkan 40 artikel ilmiah dan 40 ajuan HKI, 40 <i>lesson design</i>, dan video pembelajaran. Tim PkM telah menghasilkan luaran 1 artikel ilmiah PkM, dan 18 artikel berita di mass media. Dengan demikian, kegiatan ini berhasil dilaksanakan dan terjadi peningkatan kualitas pembelajaran kolaborasi pada komunitas <i>lesson study</i>.</p> <p style="text-align: right;">Copyright © 2022, Winaryati et al This is an open access article under the CC-BY-SA license</p> <div data-bbox="1133 1825 1316 1892" style="text-align: right;"> </div>

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INTRODUCTION

The independent campus provides opportunities to improve the quality of graduates, the quality of lecturers, as well as the quality of curriculum and learning (Dirjen Pendidikan Tinggi, 2020; Rosdiyani et al., 2021). The quality improvement is stated in the Decree of the Minister of Education and Culture of the Republic of Indonesia Number 754/P/2020. There are 8 Key Performance Indicators (KPI) or *Indikator Kinerja Utama* (IKU) that must be achieved and implemented. KPI 7 is related to curriculum development which is the key to how learning including assessment is carried out. That is why curriculum development must involve various stakeholders so that the interests and demands of 21st century learning can be implemented. KPI 7 provides direction for the application of the problem-solving learning method (Case Method). The implementation of this method produces output in the form of products, projects, in each learning activity. The recommended learning models include: Inquiry, Discovery Learning, Project Based Learning (PjBL), and Product Based Learning (PBL).

IKU 7 recommends implementing team-based project learning. Collaborative learning is the key to implementing team-based projects, both collaboration between lecturers, between students and lecturer-students. These activities can be carried out through Lesson Study for Learning Community (LSLC). LS activities are carried out through collaborative learning both during planning (Plan), observation (Do), and reflection (See) (Holden, 2022; Miharja et al., 2020; Nurwidodo et al., 2018). In lesson study, all components involved will learn from each other, share, complement each other, provide information to each other. As a result, additional insights will be obtained on all components involved, dissemination of information, and improving the quality of learning, which has an impact on improving the quality of graduates (Hendayana, 2007).

In this era, teachers are required to implement 21st century learning and assessment. There are 4 character skills that must be possessed by teachers which are transferred to students, namely: (1) Critical Thinking and Problem Solving, (2) Creativity and Innovation, (3) Collaboration, and (4) Communications (4C's) (Griffin et al., 2011; Winaryati et al., 2020). Collaboration is at the core of the other three skill characters. Collaboration is carried out to solve existing problems (Graesser et al., 2018; Oliveri et al., 2017; Pásztor-Kovács et al., 2021). The point is collaborative learning activities to solve problems through Lesson Study activities, and lead students to become skilled at solving collaborative problems based on products/projects. Especially in the current era, educational institutions must be able to provide sufficient provisions for their graduates, so that they are ready to compete in career, economy, and social life. Quality learning will be able to prepare productive graduates with decent jobs, and at the same time support the achievement of the Sustainable Development Goals (SDGs), especially on the 8th goal, especially since Indonesia is currently in a demographic bonus (BAPPENAS, 2022).

From collaborative learning activities to solve problems using various methods (case methods) through Lesson Study, Universitas Muhammadiyah Semarang (Unimus) has collaborated with Muhammadiyah school teachers throughout Central Java so that the learning process in these schools can be more focused and there is harmonization between teachers. -teachers in creating agreed teaching models to be more practical and effective. The Unimus Lesson Study Team has provided assistance to 40 LS teams from Muhammadiyah schools throughout Central Java. This mentoring activity has produced 11 scientific articles, 0 copyrighted intellectual property rights, and 13 learning videos. From this mentoring activity, several problems were found, including: (1) A thorough understanding of Lesson Study was only 55%. This is because some are still confused with Classroom Action Research (CAR); (2) There is no independent LS implementation (0%); (3) The output of articles that have been done by the teacher is only 27.5%; (4) The resulting IPR output is 0%; (5) The output of learning videos produced from Lesson Study activities is only 32.5%; (6) Scientific writing still needs to be improved; (7) There is no media competition that is continuously conducted; (8) There is no journal that accommodates the ability and skills of scientific writing by teachers; and (9) There is no website that can show the progress of teacher creativity.

The field findings from the LS mentoring activities by the UNIMUS LS team became the basis for conducting community service activities in the Lesson Study community of Muhammadiyah schools in Central Java. The results of this study provide recommendations for the need to follow up and expand learning activities through this LSLC. The purpose of community service activities is to improve the quality of learning through strengthening the Lesson Study community of Muhammadiyah schools in Central Java based on "competition exploration". Besides that, schools are also required to implement the Freedom to Learn program, with the aim of improving the quality of human resources, especially teachers and the quality of graduates.

The contributions of this community service activity are: (1) Increasing the role of Unimus in the Lesson Study community/community at Muhammadiyah schools in Central Java; (2) Collaborative learning, based on the case method, is produced in schools; (3) Increasing the quality of teacher learning, and the impact can be increasing the quality of graduates; (4) The output of scientific articles and HKI is produced by the teacher; (5) Support the achievement of Main Performance Indicator Number 7 Directorate General of Research and Technology Higher Education; (6) Increasing the implementation of the Freedom to Learn program at schools; (7) Student skills are acquired in the management of community service activities; and (8) encouraging the achievement of the goals of SDGs number 8, as preparing a workforce that is able to compete in this increasingly complex world (Pribadi, 2017; Rieckmann, 2017; UNESCO, 2017).

METHOD

The method of implementing community service is based on empowerment and mentoring activities, based on output. The results of discussions by the team and an agreement with Central Java PWM Elementary Education partners in August 2021, resulted in a solution design formulation related to findings in the field. The solutions to the findings of the above problems are: (1) The need for better understanding and mastery regarding Lesson Study. (2) The need for understanding regarding the differences between LS and Classroom Action Research (PTK). (3) There is a need to refresh the procedures for popular scientific writing, scientific articles, and IPR. (4) The need for increased independence related to open classes, and reflection activities. (5) Availability of web-based media, to accommodate teachers' aspirations and creativity regarding LS, to encourage teachers' scientific writing activities. (6) preparation and submission of IPR. (7) Facilitating scientific journal houses that can accommodate scientific writing abilities and skills by teachers.

The stages of the implementation of the activities are described below. A detailed explanation related to the implementation of activities, carried out with stages and steps as shown in Figure 1.

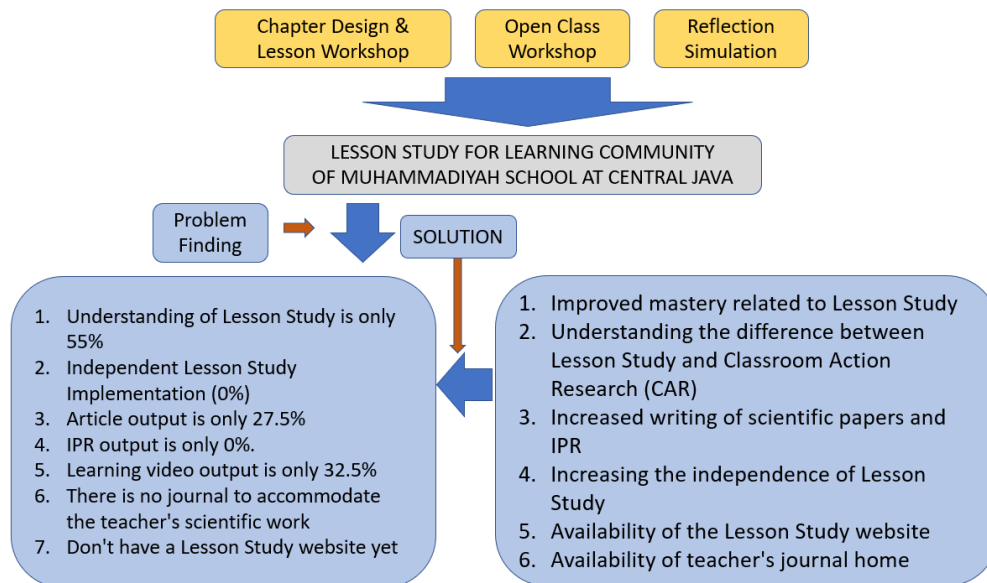


Figure 1. Direction of community service activities

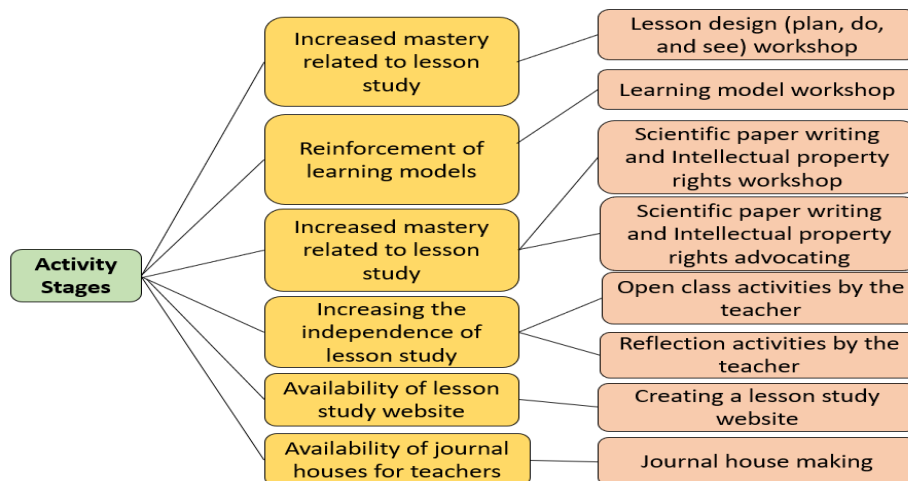


Figure 2. Stages of activities

RESULTS AND DISCUSSION

This Lesson Study activity for the Muhammadiyah school team throughout Central Java was carried out through several stages. These stages will be described one by one.

Unimus MoU with Central Java PWM Primary Education

Discussion between the Dean of FMIPA Unimus and the Head of Central Java PWM Elementary Education. The discussion focused more on collaborative activities between Unimus lecturers and Muhammadiyah school teachers. The resulting agreement was the need for an MoU between the Chairperson of the Central Java PWM Elementary Education

and the Unimus Chancellor. MoU activity between the Chancellor of Unimus and the Head of Central Java PWM Elementary Education, on April 22, 2021 (Picture 3). This MoU is a marker, so that both parties follow up on it in the form of an SPK (Work Implementation Letter) between 40 school principals and the Dean of FMIPA Unimus. After the signing of the MoU, it was continued with socialization and direction by the Chairperson of the Central Java PWM Elementary Education and the Dean of FMIPA Unimus.



Figure 3. Signing of the MoU

Continuation of Lesson Study

Workshop and Lesson Study assistance at Muhammadiyah schools in Central Java. The Lesson Study workshop and implementation was held on July 30 – September 9 2021. This mentoring activity has resulted in the output of 11 scientific articles, 0 copyright IPR, and 13 learning videos. The findings in the field indicate that the resulting output has not been maximized. Based on the above considerations, it is necessary to continue the program through more intensive assistance. This activity has been reported by online media (<https://terasjateng.com/>), and the documentation of this activity is as presented in Figure 4.



Figure 4. Documentation of activities in online media (<https://terasjateng.com/>)

Lesson Study Assistance

Improving the quality of learning, through the assistance of the Muhammadiyah school LS team throughout Central Java, was carried out in 3 stages of activity, namely: (1) Workshop (2) mentoring the school LS team, (3) making web journals and LS. The three stages of this activity have details of the steps and products produced by the teacher, as follows: a) LS Workshops at Muhammadiyah schools in Central Java; b) Assistance to the LS team offline; c) Making the LS Journal web for teachers and LS activity websites. Documentation of this activity as presented in Figure 5.



Figure 5. Documentation of lesson study mentoring activities

The Lesson Study Workshop is held online for two full days. There are 4 materials presented including: strengthening of LS, learning models, scientific article writing, best practice LS, submission of HKI. There are two output products that must be carried out by teachers, namely scientific articles and HKI submissions. In addition, there are additional products, namely lesson design, chapter design, and learning videos.

This LS activity is actually a form of activity that strengthens the basic skills possessed by the teacher. Several articles provide information that a teacher besides teaching also examines the learning he does. This can be shown by the improvement of the method used as a result of self-evaluation of learning. As a result, this mentoring activity will explore this basic potential so that it can develop even more optimally. From the mentoring activities for writing scientific articles and HKI, 40 products were produced each. In order to ensure the fulfillment of these 40 scientific articles and IPR, offline assistance was carried out. The activity is called SAFARI LESSON STUDY, in 6 Central Javanese residencies. The details are as follows: (1) On December 18, 2021, the Semarang residency assistance will be held in the Unimus FMIPA hall. Lesson Study for Learning Community (LSLC) Muhammadiyah school in the residential area of Semarang, consisting of: SMPM 1 Semarang, SMK 1 Semarang, HR 08 Semarang, SMK Boja, SDM Plus Salatiga, SMPM Plus Salatiga, SMAM Plus Salatiga; (2) On Sunday, December 19, 2021, accompaniment at the Surakarta residency. There are 10 Muhammadiyah schools: MIM Karanganyar, SDM PK Andong, SMPM 10 Andong, MI Ahmad Dahlan Kacangan, SMPM 2 Boyolali PK, SMAM 1 Klaten, SMK 04 Boyolali, SMK 5 Purwanto, SMK 1 Sukoharjo; (3) On Monday, December 20 2021, the Banyumas residency will take place at Purbalingga High School. There are 6 Lesson Study teams throughout the Banyumas residency, namely: SMP M 1 Plus Cilacap, : SMP M 2 Plus Cilacap, SD M 1 Cilacap, SMAM Purbalingga, SMK Banjarnegara, SMAM Purwokerto; (4) On Tuesday 21 December 2021. There were 5 (five) Muhammadiyah School Lesson Study Teams who joined the Pekalongan residence consisting of: Pekalongan City Vocational School, Bligo Vocational School, Pemalang Vocational School, Bumiayu Middle School, MTs M Batang; (5) On Wednesday, December 22, 2021, mentoring was carried out for the LS team in the Pati residence, taking place at the Kudus Vocational High School. The LS team involved: The participants consisted of 6 (six) Muhammadiyah schools, including: SDM Pati, SMPM 1 Pati, SMK Kudus, SMP M Asy-Syifa Blimbingrejo, SMK Rembang, and SMK 1 Bora; and (6) On Friday, December 24, 2021, it will be held at the Kedu residence. There are 6 (six) Muhammadiyah school Lesson Study (LS) teams involved, including: SDM Sudagaran Wonosobo, SMAM 1 Temanggung, SMAM Wonosobo, SMK 1 Wonosobo, SMK Kutowinangun, and SMK 2 Borobudur Magelang Regency.

At the time of mentoring, several agreements were made, namely: a commitment to produce several products from this LS activity including: (1) Scientific Articles by each school; (2) lesson design and chapter design; (3) learning videos; (4) IPR. Participants were only given less than 1 week to make progress that had an impact on teachers at this Muhammadiyah school.

From the results that have been described that the implementation of service shows positive results. The role of Unimus in the Lesson Study community/community in Muhammadiyah schools throughout Central Java. This is in line with previous research that collaboration in lesson study can build a harmonious relationship between teachers and practitioners so as to provide an experience that equips students for their future (Handayani et al., 2019; Rahmawan et al., 2019). Another positive thing is the creation of case-based collaborative learning in schools so as to encourage the improvement of the quality of graduates who can work together and work in teams. That these activities can encourage teachers to collaborate in solving learning both difficult material problems and problems faced by students. These results are reinforced by the research of Richit et al (2021) that with the implementation of lesson study, teachers have the opportunity to improve the quality of learning carried out by teachers who focus on teamwork, which encourages the proactive involvement of everyone in encouraging student achievement. The teacher's work is in the form of scientific articles and intellectual property that can support the achievement of Main Performance Indicator Number 7 of the Directorate General of Research, Technology and Higher Education. (6) Improving the implementation of independent learning programs in schools and encouraging the achievement of SDGs in order to prepare a workforce that is able to compete in the world of work.

Teachers who get lesson study experience can share their experiences when in class, both best practice and bad practice so that they complement each other in recommendations that accommodate experiences between teachers and

support references that can be used to complete and improve learning that must be done and will be done (Saito et al., 2015). All team groups are given the opportunity to speak and argue, so that they can express their strengths and weaknesses as information for model teachers to improve learning.

CONCLUSION

The conclusions that can be conveyed are that community service activities with the theme: Improving Learning Quality through strengthening Lesson Study Communities in Muhammadiyah Schools throughout Central Java, based on "Competition Exploration", are: (1) 40 scientific articles have been produced from LS activities. (2) 40 documents have been submitted for HKI submission. (3) The Central Java PWM Elementary Education Council has owned the Guru Journal web with the name: "Journal of Lesson Study in Teacher Education". This journal is a collaboration between the Unimus LS Team and the Central Java PWM Elementary School Council. (4) Has owned a Lesson Study web site, which is used as a forum for hospitality and competition in creating and innovating related to learning. (5) 40 lesson designs have been produced as a product of PLAN activities in LS. (6) The development of imagination has been produced to be implemented by the teacher. This is very important so that teachers are always creative, imaginative, innovative, collaborative and communicative, as the character of LS. (7) Lecturers have produced scientific articles.

Recommendations that can be given from LS activities to Muhammadiyah schools in Central Java are: (1) The need for a sustainability strategy to be carried out through competitions. (2) To foster enthusiasm in LS, it is necessary to have a National seminar that is held continuously. (3) The need to be proclaimed and driven by LS between teachers. These 40 schools need to be doubled, namely 80 LSLC schools. (4) It is necessary to hold training that encourages teachers to write and research.

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REFERENCES

- BAPPENAS. (2022). *8. Pekerjaan Layak dan Pertumbuhan Ekonomi*. SDGs. <https://sdgs.bappenas.go.id/tujuan-8/>
- Dirjen Pendidikan Tinggi. (2020). *Buku Panduan MBKM*. In *Buku Panduan Merdeka Belajar-Kampus Merdeka*. Ditjen Dikti Kemendikbud. <https://dikti.kemdikbud.go.id/wp-content/uploads/2020/05/Buku-Panduan-Merdeka-Belajar-Kampus-Merdeka-2020-1.pdf>
- Graesser, A. C., Fiore, S. M., Greiff, S., Andrews-Todd, J., Foltz, P. W., & Hesse, F. W. (2018). Advancing the Science of Collaborative Problem Solving. *Psychological Science in the Public Interest*, *19*(2), 59–92. <https://doi.org/10.1177/1529100618808244>
- Griffin, P., Care, E., & McGaw, B. (2011). The Changing Role of Education and Schools. In *Assessment and Teaching of 21st Century Skills* (pp. 1–15). Springer. https://doi.org/10.1007/978-94-007-2324-5_1
- Handayani, R. D., Wilujeng, I., Prasetyo, Z. K., & Triyanto. (2019). Building an indigenous learning community through lesson study: challenges of secondary school science teachers. *International Journal of Science Education*, *41*(3), 281–296. <https://doi.org/10.1080/09500693.2018.1548789>
- Hendayana, S. (2007). *Lesson Study suatu strategi untuk meningkatkan keprofesionalan pendidik (pengalaman IMSTEP - JICA)*. Bandung FP MIPA UPI dan JICA. <https://onsearch.id/Record/IOS14006.INLIS000000000054118>
- Holden, M. (2022). Exploring online lesson study as a vehicle for teacher collaborative professional learning. *International Journal for Lesson and Learning Studies*. <https://doi.org/10.1108/IJLLS-01-2022-0012>
- Miharja, F. J., Nurwidodo, N., Wahyuningrum, L., Iffah, A. H., & Eskasasnanda, I. D. P. (2020). Tokkatsu: Initiating students' collaborative activities in lesson study piloting school. *Jurnal Pendidikan Progresif*, *10*(1), 63–72. <https://doi.org/10.23960/jpp.v10.i1.202008>
- Nurwidodo, N., Hendayana, S., Hindun, I., & Sarimanah, E. (2018). Strategies for establishing networking with partner schools for implementing lesson study in Indonesia. *JPBI (Jurnal Pendidikan Biologi Indonesia)*, *4*(1), 11–22. <https://doi.org/10.22219/jpbi.v4i1.5489>
- Oliveri, M. E., Lawless, R., & Molloy, H. (2017). A Literature Review on Collaborative Problem Solving for College and Workforce Readiness. *ETS Research Report Series*, *2017*(1), 1–27. <https://doi.org/https://doi.org/10.1002/ets2.12133>
- Pásztor-Kovács, A., Pásztor, A., & Molnár, G. (2021). Measuring collaborative problem solving: research agenda and assessment instrument. *Interactive Learning Environments*, 1–21. <https://doi.org/10.1080/10494820.2021.1999273>
- Pribadi, R. E. (2017). Implementasi Sustainable Development Goals (SDGs) Dalam Meningkatkan Kualitas Pendidikan Di

- Papua. *EJournal Ilmu Hubungan Internasional*, 5(3), 917–932.
- Rahmawan, S., Hendayana, S., Hernani, H., & Rahayu, D. S. (2019). Exploring the effect of reflection to inquiry teaching through lesson study for learning community. *Journal of Physics: Conference Series*, 1157(2).
<https://doi.org/10.1088/1742-6596/1157/2/022039>
- Richit, A., da Ponte, J. P., & Tomasi, A. P. (2021). Aspects of Professional Collaboration in a Lesson Study. *International Electronic Journal of Mathematics Education*, 16(2), em0637. <https://doi.org/10.29333/iejme/10904>
- Rieckmann, M. (2017). *Education for sustainable development goals: Learning objectives*. UNESCO Publishing.
- Rosdiyani, T., Artiwi, N. P., Purnawan, P., Hendra, Y., Nasri, E., Widyawati, W., Nuraida, I., Hidayanti, N., Solihati, T. I., Ansoriyah, S., Maulida, H. F., Amilia, E., Rifai, A., Surahmat, A., Fu, T. D., Suhendar, B., Khairusy, M. A., Atmaja, S., Febriani, R., ... Apriliansyah, R. (2021). *Changing trends pendidikan tinggi pada kampus merdeka (Gagasan konstruksi dan paradigma MBKM)* (F. Fitriyah, M. K. Abadi, & F. Oktaviana (eds.)). Media Madani.
https://elibrary.unikom.ac.id/id/eprint/4472/1/MBKM_UNBAJA-21-pages-1-13,192-209.pdf
- Saito, E., Watanabe, M., Gillies, R., Someya, I., Nagashima, T., Sato, M., & Murase, M. (2015). School reform for positive behaviour support through collaborative learning: utilising lesson study for a learning community. *Cambridge Journal of Education*, 45(4), 1–30. <https://doi.org/10.1080/0305764X.2014.988684>
- UNESCO. (2017). *Education for sustainable development goals learning objectives*. UNESCO Education Sector.
- Winaryati, E., Mardiana, & Hidayat, M. T. (2020). Conceptual framework of evaluation model on 4 c's-based learning supervision. *International Journal of Learning, Teaching and Educational Research*, 19(8), 173–193.
<https://doi.org/10.26803/ijlter.19.8.10>



Increasing community food security through aquaponic and aeroponic cultivation

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ARTICLE INFO	ABSTRACT
<p>Article history Received: 2022-10-01 Revised: 2022-10-14 Accepted: 2022-10-24 Published: 2022-12-02</p> <p>Keywords Community partnership program Aeroponics Aquaponics Food security</p>	<p>The topographical conditions in Bulu-Bulu Village, Jeneponto Regency, South Sulawesi, tend to be bumpy and rocky, which is the main problem in farming. Locals exclusively use growing methods because there is little public awareness about cultivation technologies. The community employs a number of different fish farming systems. Additionally, the cost of fish feed has a tendency to change, making it harder for people to satisfy their needs for the primary protein source. The community can be counseled on land use by using aquaponic and aeroponic systems as a possible solution to the issue. Regardless of climatic conditions or current land characteristics, aquaponic technology is recognized as a substitute for integrated farming systems. By providing counseling, instruction, and hands-on support to the residents of Bulu-Bulu Village, the strategy is put into action. The results of this action take the shape of autonomous aquaponic and aeroponic installations that grow food crops and fish in the same space to reduce production costs and increase earnings. Every family in the community is intended to be able to benefit from this activity and use the farming technology in order to reinforce and encourage long-term improvements in the nation of Indonesia's food security.</p>
<p>Kata kunci Program kemitraan masyarakat Aeroponik Aquaponik Ketahanan pangan</p>	<p>Meningkatkan ketahanan pangan masyarakat melalui budidaya akuaponik dan aeroponik. Kondisi topografi di Desa Bulu-Bulu, Kabupaten Jeneponto, Sulawesi Selatan cenderung bergelombang dan berbatu yang menjadi kendala utama dalam bercocok tanam. Penduduk setempat secara eksklusif menggunakan metode penanaman karena sedikitnya kesadaran masyarakat tentang teknologi budidaya. Masyarakat menggunakan sejumlah sistem budidaya ikan yang berbeda. Selain itu, harga pakan ikan cenderung berubah sehingga semakin sulit bagi masyarakat untuk memenuhi kebutuhan sumber protein utama. Masyarakat dapat diberi penyuluhan tentang penggunaan lahan dengan menggunakan sistem akuaponik dan aeroponik sebagai solusi yang mungkin untuk masalah tersebut. Terlepas dari kondisi iklim atau karakteristik lahan saat ini, teknologi akuaponik diakui sebagai pengganti sistem pertanian terpadu. Dengan memberikan penyuluhan, pengarahan, dan pendampingan langsung kepada warga Desa Bulu-Bulu, strategi tersebut dapat dijalankan. Hasil dari tindakan ini berupa instalasi akuaponik dan aeroponik otonom yang menanam tanaman pangan dan ikan di ruang yang sama untuk mengurangi biaya produksi dan meningkatkan pendapatan. Setiap keluarga di masyarakat diharapkan dapat memanfaatkan kegiatan ini dan menggunakan teknologi pertanian untuk memperkuat dan mendorong perbaikan jangka panjang ketahanan pangan bangsa Indonesia.</p>
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INTRODUCTION

One of the challenges of agro-industry in this 4.0 era is the limited land for agriculture. The number of Indonesian citizens being recruited each year is increasing, which is a threat to the growth of the settlement demand. Jeneponto Regency, South Sulawesi is the sole example. The distance between Makassar City and Jeneponto Regency, which is approximately 93 km, is located in the western end of the area of the province of Sulawesi Selatan. There are 114 village, 11 district, and 749,79 km² of land in Jeneponto Regency. West Bangkala District is the most populous village in Jeneponto, comprising 15.269 hectares or 20.40% of the village's total land area, while Arungkeke District is the village with the smallest amount of land, including 2.991 ha or 3.99% of the village's total land area (Ternando, 2021).

The population is increasingly dense, causing the conversion of agricultural land to residential areas. In addition, the improvement of infrastructure such as roads is also one of the factors in reducing the allocation of agricultural land. Therefore, urban farming (hydroponics, aquaponics, aeroponics, and vertical farming) is an alternative that can be used to increase the amount of food production. The relatively flat to undulating topography in the cultivated area is ideal for the development of various types of commodities or in other words, slope problems will not be an inhibiting factor that reduces the suitability of land for various types of commodities. On the other hand, areas with steep topography (slope > 25%), covering an area of 29,745 ha (about 37.40% of the total area of Jeneponto Regency), need extra attention so that food crop cultivation activities do not reach this area, or if this happens, soil and water conservation efforts absolutely must be implemented. If this condition is forced, then the results of direct planting (planted in the ground) will not really provide maximum cultivation results. Agricultural land is being turned into residential areas as a result of the growing population (Fuadina et al., 2021).

The regional development system of Jeneponto Regency is an integral part of national development. Especially with high enough economic growth, various policies can be implemented, these policies can be in the form of giving priority to economic sectors that are able to act as the main drivers of the regional economy and have the ability to increase people's income, community employment opportunities, linkages and driving force with other sectors, as well as gross value added.

The agriculture industry is one of the crucial areas in economic development, according to Jeneponto Regency's priorities for regional development. The agricultural sector is a cornerstone of the national economy due to its significant direct and indirect contributions to the attainment of development objectives, particularly the improvement of food security, the reduction of poverty, the creation of jobs, and an increase in the income and welfare of the populace (Widianingsih et al., 2015). In an effort to end hunger, achieve food security and decent nutrition, and support sustainable agriculture, the second Sustainable Development Goal (SDG) includes a goal for food security (Anandhiya et al., 2021; Farikhotin et al., 2022; Nawir et al., 2022).

Most of the community's livelihoods still depend on natural resources, such as fishermen, fish cage businesses, timber, working in the service sector, and other informal sectors. The livelihoods of the people in Bulu-Bulu Village, Arungkeke District are not much different from the livelihoods of other communities. Agricultural fields in the form of rice fields or fields are found in Bulu-Bulu Village, Ba'do Village and Kalumpang Loe Village, while fish cage businesses are most commonly found in Kampala and Palajau villages. Efforts to increase daily needs as additional family nutrition are needed through the utilization of available resources and yards whose functions have not been maximized. Population growth that affects the availability of agricultural materials. As a result, it has an impact on the decline in productive land. Along with the development of technology, humans can find solutions so that a narrow yard can be used to support family needs. It also encourages people to be more creative, independent and financially advanced in their household economy (Khomah & Fajarningsih, 2016). The yard is an open space area located around the area of a house building that can be used as a place for plant production and can also be used as a place for livestock and fish ponds depending on the size of the yard area (Dwi et al., 2021). Community activities carried out in the yard include planting trees and kale (These lands have the potential to provide family food, reduce household spending on food purchases and increase farmer household incomes. There is no need to cultivate the soil like conventional plant cultivation in the garden, it can be done in your spare time, and the maintenance is also easy.

The ease of farming cultivation systems can take advantage of several alternative technologies. Aquaponic technology is known as an alternative to integrated farming systems regardless of climatic conditions or existing land conditions. Aquaponics is a combination of fish cultivation systems and plant cultivation without dependence on soil as a plant growing medium (Sastro, 2016). Aquaponics is not widely known in the community, in contrast to hydroponics which some people already know. Hydroponics is only devoted to vegetable or flower plants grown on non-soil media and for the fulfillment of nutrients supplied through liquid fertilizers or chemical substances as nutrients. Aquaponics for obtaining vegetable nutrients is more emphasized on the use of water sources from fish farming, because the residual water of manure and fish feed can be used as nutrients for vegetables so that with this system it can save space, water and even costs and of course it is healthier by producing organic products.

Aquaponic cultivation ensures water oxygen levels and suppresses toxic ammonia produced from fish waste (Rizal et al., 2018). Combining hydroponics and fish farming will approach a natural system between plant or fish cultivation. The

two systems complement each other where fish produce ammonia which is a nutrient for plants. Plants function as mineralization or reduce ammonia which can poison fish. Oxygen levels are maintained by ongoing recycling of water through the existing system.

The benefits of this aquaponics system on a small scale can be useful for meeting household needs, but on a large scale it can be useful for meeting commercial needs. Although in general the people in Petak Bahandang Village are very familiar with farming and farming methods, combining vegetable cultivation with fish rearing is still a new thing and in Petak Bahandang Village floods often occur so that the land for farming is sometimes submerged and cannot be used so that activities Community service to introduce aquaponic farming is still very necessary because the aquaponic system can be carried out even on limited land.

While aeroponics can also be a solution to the problems of community plant cultivation in Bulu-Bulu Village, Arungkeke District. The application of aeroponic techniques can be an alternative method that can be used to overcome land limitations. In addition, this technique can also be used to increase the productivity of these plants. Aeroponics is one type of hydroponics because water containing a nutrient solution is sprayed in the form of a mist to hit the plant roots. One of the key advantages of aeroponics is the oxygenation of each fine mist of nutrient solution so that root respiration is smooth and produces a lot of energy.

Through the community partnership program, where this activity includes counseling, training and mentoring, it is hoped that it can increase cultivation yields and make it easier for the community to grow crops by implementing aquaponic and aeroponic (Lakhiar, 2020; Khan, 2020) cultivation systems so that the welfare of the people in Bulu-Bulu Village, Arungkeke District can be further improved. However, communal plant growing in Bulu-Bulu Village, Arungkeke District, has certain issues that aeroponics can help with as well. To get over the limits of the land, one alternate approach is to use aeroponic technology. The yield of these plants can also be increased by using this strategy. One sort of hydroponics is aeroponics, which involves misting the roots of the plants with water containing a nutritional solution. Aeroponics has many benefits, one of which is that each tiny mist of nutritional solution is oxygenated, ensuring that root respiration is easy and efficient in terms of energy production. It is hoped that by implementing aquaponic and aeroponic cultivation systems through the community partnership program, which includes counseling, training, and mentoring, it will be possible to increase crop yields and make it simpler for the community to grow them in order to further enhance community welfare (Aripriharta et al., 2022; Hakim, 2020) especially those who reside in Bulu-Bulu Village and Arungkeke District.

The topographical conditions in Bulu-Bulu Village which tend to be bumpy and rocky are the main problems in farming. In addition, knowledge of cultivation technology is still very minimal, so that local people only rely on traditional cultivation systems that have been used for many years. Although the results obtained are not optimal, this conventional cultivation habit must be carried out in order to meet daily needs. The community in Bulu-Bulu Village still lacks knowledge about farming which is more efficient and profitable by implementing a cultivation technology system, even though this appropriate technology system is very useful if applied because it can improve the welfare of the local community.

Based on the survey conducted, it was found that a number of obstacles related to social, cultural, and economic problems were still encountered in the yard land use program, including the lack of intensive cultivation of yard plants, still part-time and not yet market-oriented, lack of availability of yard-specific cultivation technology, and inadequate assistance from officers. Soil quality has also declined due to the excessive use of synthetic fertilizers and pesticides. Likewise, groundwater reserves are depleted due to agricultural exploitation, even though the peak of the green revolution has passed, various agricultural innovations continue to be developed by humans to keep pace with the population speed. Therefore, careful planning and cross-sectoral support are needed in the utilization of home gardens so that they can be more optimal. in supporting food security.

Another problem found during the initial survey was the community's ability to look for alternative protein sources if the weather was bad at any time so it was difficult for fishermen to go to sea, in this condition, the price of fish increased and this situation made it increasingly difficult for the community to meet their protein needs. There are several fish farming systems carried out by the community, but sometimes the capital for making fish ponds with the results obtained is not balanced, so many people do not continue their fish cultivation anymore. In addition to making ponds, the price of fish feed (pellets) also tends to fluctuate so that even this situation makes it increasingly difficult for people to use this as the main protein source.

In general, the constraints that the villagers of Bulu-Bulu Village, Jeneponto Regency, confront are as follows: (1) There is still a severe lack of public awareness of acceptable technology, resulting in the continued use of conventional techniques that rely on soil as a planting medium. (2) The community finds it challenging to practice conventional agriculture due to the topography's rough and uneven terrain. The development of horticulture and food crops in the area does not fully meet the intended standards for soil quality. (3) People are compelled to exclusively eat marine fish since rearing freshwater fish is so expensive. However, during severe weather, the cost of fish at neighborhood traditional markets may rise, leaving people with no other choice to eat enough protein. (4) The local populace is unaware of the appropriate technology that can be used to increase agricultural cultivation yields and lower the cost of

freshwater fish farming as a substitute for marine fish in the event that the price of fish ever becomes unaffordable on the market.

The goal of this community service is to provide the community with information on technology-based farming that can address the issues in Bulu-bulu Village. As for the contribution, (1) anyone who wants to start their own firm in the horticulture and food industries can leverage the application of this technology as a business opportunity in the future. (2) The community can raise freshwater fish with low production costs, eliminating its previous reliance on marine fish, which had been the main source of protein. (3) Each family head is expected to be able to use this activity to learn the agriculture technology in order to achieve food independence at the village level. (4) It is intended that with this counseling, training, and help to the community, there won't be any more issues with food, horticulture, or the accessibility of fish for human consumption for the people of Bulu-Bulu Village in particular and Arungkeke District, Jeneponto Regency in general. As a result, it is anticipated to support Indonesia's long-term food security and independence.

METHOD

Implementation of this community partnership program is aimed at the Housewife Group in Bulu-Bulu Village, Jeneponto Regency by providing counseling, training and assistance on the manufacture and application of appropriate technology to the community regarding aquaponics and aeroponics cultivation as well as training community skills to be able to make products independently. so that the manufacture of aquaponic and aeroponic cultivation products can be carried out in a sustainable manner. In addition, there are parties involved in this service activity, namely the Bulu-Bulu Village Apparatus, Arungkeke District, Jeneponto Regency and Makassar State University Lecturers and Students who act as implementers and resource persons. The following flow chart (Figure 1) outlines the processes for launching this workflow.

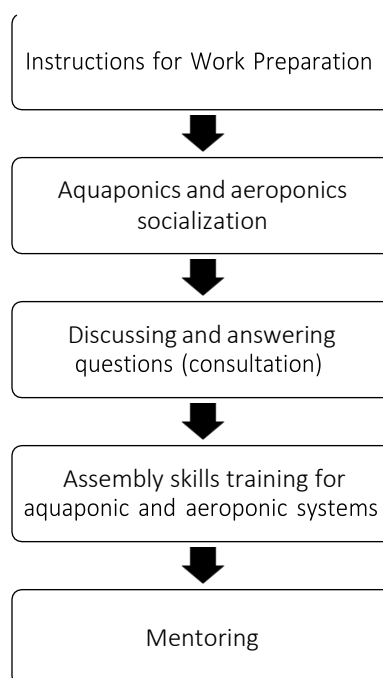


Figure 1. Community service program workflow

The partnership program implementation process is divided into 6 parts, including: (1) Setting up the work guidelines is crucial to ensuring that each stage goes off without a hitch. Consequently, it takes a month to prepare the instructions, which include those for producing items using the aquaponic and aeroponic technologies. (2) Community groups in Bulu-Bulu village, Arungkeke sub-district, Jeneponto district, were socialized as part of an information-delivery and hands-on demonstration of aquaponic and aeroponic gardening. (3) Discussion and question-and-answer sessions (consultations), which are required to conduct in order to apply the right technology for aquaponic and aeroponic cultivation and provide people the chance to ask questions and debate the production of aquaponic and aeroponic cultivation products. (4) The community is given skills training so they may produce goods on their own, allowing for the ongoing or sustainable production of aquaponic and aeroponic farming items. (5) Mentoring is given both before and during the socialization process so that the implementing team may evaluate the success and determine how well the trainees have grasped the skills being taught. Additionally, if this cultivation is maintained for a home-based business, it

might boost the local economy. An instrument in the form of a questionnaire on the participants' knowledge level, which comprises 6 (six) indicators, can be used to gauge the program's success. These indications are: (1) Knowledge of Traditional Farming Methods. (2) Knowledge Associated with Cutting-Edge Cultivation Technology 3. Knowledge of plant nutrition. (4) Knowledge Concerning Freshwater Fish Maintenance (5) Knowledge Concerning Aquaponics (6) Knowledge Relating to Aeroponics

RESULTS AND DISCUSSION

The community partnership program activity carried out in Bulu-bulu Village, Arungkeke District, Jeneponto Regency in partnership with the Housewife Group through Aquaponic and Aeroponic farming techniques to Improve Food Security and Community Economy in Bulu-Bulu Village, Jeneponto Regency is a service that aims to providing information delivery and direct demonstration to the community regarding aquaponic and aeroponic cultivation as well as training community skills to be able to make products independently so that the manufacture of aquaponic and aeroponic cultivation products can be carried out sustainably in Bulu-Bulu village, Arungkeke district, Jeneponto district. The community in Bulu-bulu Village is projected to gain more knowledge and expertise in integrated aquaponics and aeroponics agriculture as a result of the predicted results and accomplishments, which should boost the community's food security and self-reliance. A one-month work schedule is created based on the results of the survey that was conducted. The cooperation program steps in Bulu-bulu Village are anticipated to begin with the introduction of this well-organized work program. As seen in the following, the subsequent phase is to engage in socialization exercises in Bulu-bulu Village (Figure 2).



Figure 2. Socialization of the Partnership Program in Bulu-Bulu. Village community groups

Twenty people participated in the social activity, which was held at the village office for Bulu-bulu (partner communities). Participants heard information from a resource who is the Chair and proposer of the community partnership initiative (Figure 2). People in Bulu-Bulu village, Arungkeke sub-district, Jeneponto district, were personally informed about aquaponics and aeroponic farming. Because this farming approach is creative and solves the issue of limited land by making use of the potential of the neighborhood's home yards, participants were quite enthused about the information presented. Participants offer a number of questions that will be covered in the discussion activities when they have a basic understanding of the aquaponic and aeroponic growing systems.

The community's discussion and lead lecturer of the proposer's directed questions and answers went well (Figure 3). The community is given the chance to ask questions and debate how aquaponic and aeroponic farming goods are made in order to implement the proper technology. The precision of this horticulture will enable Bulu-bulu Village residents to find the best answers to their difficulties. Training in creating aeroponic and aquaponic systems will allow participants to directly apply the knowledge they have received from the activities they have completed. The community's discussion and lead lecturer of the proposer's directed questions and answers went well (Figure 4). The community is given the chance to ask questions and debate how aquaponic and aeroponic farming goods are made in order to implement the proper technology. The precision of this horticulture will enable Bulu-bulu Village residents to find the best answers to their difficulties. Training in creating aeroponic and aquaponic systems will allow participants to directly apply the knowledge they have received from the activities they have completed.



Figure 3. Discussion and Questions and Answers (Consultation) for the manufacture of aquaponic and aeroponic cultivation installations.



Figure 4. Training on Integrated Aquaponics and Aeroponics Installation Skills

Teaching on Integrated Aquaponic and Aeroponic Installation Making Skills is done by lecturers and students. This activity is carried out to enable the local population to produce goods on their own, enabling the ongoing or sustainable production of items derived from aquaponic and aeroponic gardening. In order for the community to concurrently grow food crops and fish, sustainability of this activity is anticipated to be able to establish community independence in the application of integrated aquaponics and aeroponic horticulture. Naturally, when this technique is used, production costs will be lower and profits will be higher.



Figure 5. Community Assistance in Bulu-Bulo Village

The mentoring procedure (Figure 5) is crucial both during and after the socialization process so that the implementation team may assess its performance and determine how well the trainees have grasped the skills being taught. Additionally, the community's economy can be improved if this cultivation is continued by submitting an integrated aquaponics and aeroponic installation (Figure 6) at a home industrial size.



Figure 6. Delivery of Integrated Aquaponics and Aeroponics Installations to the Bulu-Bulo Village Community

Through the delivery of integrated aquaponics and aeroponic installations, it is also hoped that the understanding that has been obtained by the community can be applicable. The understanding of the people of Bulu-bulo Village is one indication of the achievement of the targets of this community partnership program. The understanding of the people of Bulu-bulo Village about integrated aquaponics and aeroponics is presented in Table 1.

The Bulu-bulo Village Community has a solid comprehension of combined aquaponics and aeroponics, according to the measurement results, which contain 6 (six) indications of such understanding. Despite Bulu-bulo Village's unfavorable terrain, this is a strong suggestion of how to develop community independence in carrying out novel and useful agriculture systems to realize food improvement. However, the community may help the community overcome the issues that exist in Bulu-bulo Village in the food sector by installing integrated aquaponics and aeroponics.

The aquaponics system is one of the best solutions for agricultural production in areas with rising land costs, scarce water supplies, extensive land conversion, and the problem of climate change brought on by global warming. (Handayani, 2018; Saputra, 2019; Dirgantara, 2022). In Bulu-Bulo Village, Jeneponto Regency, increasing communal food security will start with the yields from aquaponic growing methods.

Table 1. Table of Community Understanding of Integrated Aquaponics and Aeroponics

No	Indicator	Percentage			
		Very understand	Understand	Not really understand	Do not understand
1	Knowledge of Traditional Farming Methods.	85%	15%	0%	0%
2	Knowledge Associated with Cutting-Edge Cultivation Technology	60%	40%	0%	0%
3	Knowledge of plant nutrition.	50%	50%	0%	0%
4	Knowledge Concerning Freshwater Fish Maintenance	65%	35%	0%	0%
5	Knowledge Concerning Aquaponics	70%	30%	0%	0%
6	Knowledge Relating to Aeroponics	55%	45%	0%	0%

Because it empowers groups of housewives in the usage of home yards, the growth in community food security promotes the SDGs program, namely the goals of food security and achieving gender equality. The use of yards in this case obviously refers to a yard that is managed through an integrated strategy of various types of plants, livestock, and fish, in order to assure the continuous and independent availability of diverse food items to meet nutrition and family food needs (Djamali, 2022). The role of women (housewives) as home managers and upholding family food security is very crucial and very strategically important in order to be able to maximize the function of this yard. Real housewives may contribute significantly to the accomplishment of national food security by leveraging the strength of family food security. Together, the community can create an aquaponic growing system that doesn't need a lot of space, use it for their personal needs and as a commercial opportunity, and boost the economy and food security. (Sari, 2022). Especially by using aquaponic farming methods.

Aquaponics can be summed up as a combination of hydroponic (plant/vegetable production without soil media) and aquaculture (fish farming) systems. Aquaponic systems adopt an ecological system in a natural environment, where there is a symbiotic relationship of mutualism between fish and plants (Rokhmah, 2014). There are two essential components to aquaponics. Water for rearing aquatic animals and hydroponics for plant growth make up the two basic components. Fish can get poisoned from garbage that builds up in the water during aquaculture. The trash is made up of leftover fish feed as well as fish excrement and pee. However, these wastes are full of nutrients that can be used as a source of nutrients and are quite helpful for plant growth. In this watery environment, fish are typically kept as aquatic animals. Plankton that grows in the system, including zooplankton and phytoplankton, and artificial fish feed are the sources of food for fish. The body of the fish will then digest the fish food. Crops can be grown using an aeroponic system. (Slameto, 2022). The restrictions that the people in Bulo-Bulo Village, Jenepono Regency, faces may present a chance for sustainable horticulture to be empowered.

Growing veggies that you can sell or consume yourself can be one of many economic opportunities that can come from farming as a pastime. The role of housewives is very strategic in increasing productivity and has the potential to increase income and food security (Shooliha, 2022). With this mindset, food independence on a household scale can be attained. Using the home yard for food crops can also be employed as part of a lifestyle in fulfilling household food needs. (Yani, 2020). By using aeroponic cultivation methods, one can achieve food independence and bolster food security.

Since aeroponics cultivation methods don't utilize soil media and can be set up in a home's yard, they are advantageous for farmers who lack acreage for traditional farming. Styrofoam is typically used as the planting medium since it allows plant roots to hang in the air. Regarding quality, vegetables grown using aeroponic systems will taste cleaner, crispier, and more recent. In the meantime, the issues with communal plant growing in Bulo-bulo village may also be resolved through aeroponics. Aeroponics comes from the word *aero* which means air and *ponus* which means power. Aeroponics is empowering the air or growing crops in the air. Aeroponics is actually a type of hydroponics (empowering water) because (Setiawan, 2021). Aeroponics' ability to oxygenate each small mist of nutritional solution ensures that root respiration is smooth and efficient, producing a lot of energy (Irawan, 2021).

The implementing team first conducts a theoretical explanation (socialization) before beginning field activities so that partners are familiar with the equipment, supplies, and work systems utilized in aquaponics and aeroponics. Following that, installations for aeroponic and aquaponic systems were built. Although both of them use water as a medium for plant growth, there are distinct variances between them, and the community must decide which one to use for their future cultivation methods.

CONCLUSION

The conclusions of this activity are as follows: (1) The community has knowledge of technology -based cultivation that can be a solution to the problems faced in the area. (2) The application of this technology can later be used as a business opportunity for the community if anyone wants to become an entrepreneur in the field of food and horticulture. (3) The community can cultivate freshwater fish with minimal production costs without relying on marine fish anymore which has been the main hope for protein fulfillment. (4) Through this dissemination, each family coconut is expected to be able to utilize this cultivation technology so that food independence at the RT/RW level can be fulfilled. (5) With this counseling, training and assistance to the community, it is hoped that there will be no more problems in the fields of food, horticulture and the availability of consumption fish for the people in Bulu-Bulu Village, Arungkeke District, Jenepono Regency. Through this community partnership program, it is hoped that it can inspire other community partnership programs in the development of integrated acuaponics and aeroponics so that they can improve the future food security of the Indonesian nation in a sustainable manner.

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REFERENCES

- Anandhiya, A., Arifin, A., & Istiqomah, I. (2021). Pengaruh Ketahanan Pangan terhadap Rata-Rata Pengeluaran Masyarakat di Jawa Tengah. *Jurnal Ilmiah Universitas Batanghari Jambi*, 21(1), 96. <https://doi.org/10.33087/jiubj.v21i1.1258>
- Aripriharta, A., Firmansah, A., Faiz, M. R., Satrio, Y. D., Sunaryono, S., & Fitriyandi, M. R. (2022). Revitalisasi tani kabupaten sebagai pilot project kebangkitan ekonomi masyarakat Sengkaling. *IJCOSIN: Indonesian Journal of Community Service and Innovation*, 2(1), 47–55. <https://doi.org/10.20895/ijcosin.v2i1.388>
- Dirgantara, W. A. (2022). Monitoring Aquaponik dengan Android untuk Meningkatkan Minat Masyarakat dalam Bercocok Tanam di Kecamatan Porong. *Abdimas: Jurnal Pengabdian Masyarakat Universitas Merdeka Malang*, 6(1), 133-141.
- Djamali, R. A. (2022). Penyusunan Rencana Induk Pengembangan Kawasan Rumah Pangan Lestari (KRPL) di Kampung SDGS Bangsalsari Kabupaten Jember. *J-ABDI: Jurnal Pengabdian kepada Masyarakat*, 1(9), 2493-2502
- Dwi P. H., Rahman Singkam, A., Fauzi, H., & Izzudin Al Qosam, M. (2021). Hubungan Antara Keanekaragaman Tanaman Pekarangan Dengan Pola Sosial Budaya Masyarakat Setempat. *Biotropika: Journal of Tropical Biology*, 9(2), 136–143. <https://doi.org/10.21776/ub.biotropika.2021.009.02.06>
- Farihotin, S. N., & Sary, S. N., (2022). Food Bank sebagai Bentuk Kepedulian Generasi Z Peduli Ketahanan Pangan dengan Integrasi Sekolah dan Masyarakat dari Pemanfaatan Food Waste. *Prosiding Pekan Ilmiah ...*, 745–751. <http://ejournal.unmas.ac.id/index.php/pilar/article/view/4520>
- Fuadina, L. N., Rustiadi, E., & Pravitasari, A. E. (2021). Analisis Faktor-Faktor yang Mempengaruhi Urban Sprawl di Kawasan Cekungan Bandung. *Tataloka*, 23(1), 105–114. <https://doi.org/10.14710/tataloka.23.1.105-114>
- Hakim, M. A. (2020). Urban farming metode teknologi inovasi batu pada pertanian perkotaan. *Urban Farming Solusi Pertanian Perkotaan*, 1–23.
- Handayani, L. (2018). Pemanfaatan lahan sempit dengan sistem budidaya aquaponik. *In prosiding seminar nasional hasil pengabdian*, 1 (1), 118-126. <https://doi.org/10.25008/altifani.v1i4.181>
- Irawan, M. S. (2021). Kontrol pH Sistem Aeroponik Pada Tanaman Strawberry Menggunakan Metode Fuzzy Logic. *CYCLOTRON*, 4(1), 51-54. <http://dx.doi.org/10.30651/cl.v4i1.5898>
- Khomah, I., & Fajarningsih, R. U. (2016). Potensi dan Prospek Pemanfaatan Lahan Pekarangan terhadap Pendapatan Rumah Tangga. *Procceding Seminar Nasional Peningkatan Kapabilitas UMKM Dalam Mewujudkan UMKM Naik Kelas Pemanfaatan*, 155–161.
- Khan, M. M., Akram, M. T., Janke, R., Qadri, R. W. K., Al-Sadi, A. M., & Farooque, A. A. (2020). Urban horticulture for food secure cities through and beyond COVID-19. *Sustainability*, 12(22), 9592.
- Lakhiar, I. A., Gao, J., Syed, T. N., Chandio, F. A., Tunio, M. H., Ahmad, F., & Solangi, K. A. (2020). Overview of the aeroponic agriculture—An emerging technology for global food security. *International Journal of Agricultural and Biological Engineering*, 13(1), 1-10. <http://www.ijabe.org/index.php/ijabe/article/view/5156/pdf>
- Nawir, A., Syamsuddin, & Jusniaty. (2022). Penerapan Program Sustainable Development Goals (Sdgs) Desa Polewali dalam Mengurangi Kemiskinan. *DEMOKRASI: Jurnal Ilmu Pemerintahan UM Malang*, 2(1), 1–18.
- Putra, Y. A., Siregar, G., & Utami, S. (2019). Peningkatan pendapatan masyarakat melalui pemanfaatan pekarangan

- dengan teknik budidaya hidroponik. *Prosiding Seminar Nasional Kewirausahaan*, 1(1), 122–127. <http://jurnal.umsu.ac.id/index.php/snk/article/view/3589>
- Rizal, A., Dhahiyat, Y., Zahidah, Andriani, Y., Handaka, A. A., & Sahidin, A. (2018). The economic and social benefits of an aquaponic system for the integrated production of fish and water plants. *IOP Conference Series: Earth and Environmental Science*, 137(1–8). <https://doi.org/10.1088/1755-1315/137/1/012098>
- Rokhmah, N. A. (2014). Vertiminaponik, mini akuaponik untuk lahan sempit di perkotaan. *Buletin Pertanian Perkotaan*, 4(2), 14-22. <http://jakarta.litbang.pertanian.go.id/ind/artikel%20bptp/buletin%20vertiminaponik%20vol4%20>
- Saputra, M. A. (2019). Penerapan Metode Profile Matching dalam Penentuan Jenis Tanaman. *Jurnal Sistem dan Informatika (JSI)*, 13(2), 46-51. <https://www.jsi.stikom-bali.ac.id/index.php/jsi/article/view/198>
- Sari, A. S. (2022). Pemanfaatan Lahan Sempit Untuk Budidaya Aquaponik di Desa Sumberbendo. . *KARYA UNGGUL- Jurnal Pengabdian Kepada Masyarakat*, 1(2), 256-263. <https://ojs.atds.ac.id/index>
- Sastro, Y. (2016). *Teknologi Akuaponik Mendukung Pengembangan Urban Farming*.
- Setiawan, A. N., & Wijayanti, S. N. (2019). Desa Mandiri Pangan Berbasis Pekarangan Di Donokerto, Turi, Sleman, Diy. *Adimas : Jurnal Pengabdian Kepada Masyarakat*, 3(2), 16. <https://doi.org/10.24269/adi.v3i2.1828>
- Setiawan, G. A. (2021). Smart Farming Tanaman Selada (Romaine) Dengan Sistem Aeroponik Berbasis IOT. . *Informatics, Electrical and Electronics Engineering (Infotron)*, 1(1), 37-49. <http://dx.doi.org/10.33474/infotron.v1i1.11355>
- Shooliha, M. F. (2022). Pemberdayaan Kewirausahaan Bercocok Tanam untuk Meningkatkan Penghasilan Dd Masa Pandemi Covid-19 (Pada Kelompok Wanita Tani Puri Pamulang). *Jurnal Pengabdian Kepada Masyarakat (PKM): Kreasi Mahasiswa Manajemen*, 2(1), 72-83. . <http://openjournal.unpam.ac.id/index.php/KMM/article/viewFile/20954/10482>
- Slameto, S. F. (2022). Penerapan Teknologi Aeroponik untuk Produksi Benih Kentang di Desa Ngadisari Kabupaten Probolinggo. *Dharmakarya*, . 11(1), 51-54. <https://doi.org/10.24198/dharmakarya.v11i1.36136>
- Ternando, H. (2021). *Faktor - Faktor yang Mempengaruhi Kepatuhan Wajib Pajak Bumi dan Bangunan di Kecamatan Tarawang Kabupaten Jeneponto*. Universitas Muhammadiyah Makassar.
- Widianingsih, W., Suryantini, A., & Irham, I. (2015). Kontribusi Sektor Pertanian Pada Pertumbuhan Ekonomi Di Provinsi Jawa Barat. *Agro Ekonomi*, 26(2), 206–218. <https://doi.org/10.22146/agroekonomi.17272>
- Yani, A. Y. (2020). Pemanfaatan Lahan Terbatas Dalam Menunjang Ketahanan Pangan Di Era Covid-19. *Jurnal Imiah Management Agribisnis (Jimanggis)*, 1(2), 125-136. <https://doi.org/10.48093/jimanggis.v1i2.47>



Strategic management of local potential-based entrepreneurship through community empowerment on fish attractions Bendhung Lepen in Mrican Village Yogyakarta

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ARTICLE INFO	ABSTRACT
<p>Article history Received: 2022-02-15 Revised: 2022-05-18 Accepted: 2022-10-14 Published: 2022-12-06</p> <p>Keywords Bendhung Lepen Community empowerment Entrepreneurship Strategic management</p>	<p><i>This research was aimed (1) to know the internal environmental factors that affect the management of entrepreneurship strategies for fish tourism attraction Bendhung Lepen; (2) to know external environmental factors that affect the management of entrepreneurship strategies for fish tourism attraction Bendhung Lepen; and (3) to know the appropriate marketing system for the location of Bendhung Lepen fish attractions. The method used in this study was qualitative descriptive where data were obtained by means of interviews, observations, and documentation. The interview was conducted at random on visitors to fish attraction Bendhung Lepen, the community around the Gajah Wong river irrigation site, and the Bendhung Lepen Community. Field results were used for SWOT analysis consisting of IFAS tables, EFAS tables, IE matrices, and SWOT matrices. The results of the analysis on IFAS can be known that the score for internal factors of 3.43 which understands the internal condition of management of fish attraction management in Bendhung Lepen falls into the moderate category (average). This is because factors that have a high score were at high operational cost points. The results of the EFAS analysis showed a score of 3.28 which means the external condition of Bendhung Lepen fish attractions were in good condition, where the most dominant factor is the number of competitors was still small, balanced crop sales, and the density of the number of tourist attraction visitors.</i></p>
<p>Kata kunci Bendung Lepen Kewiraswastaan Manajemen strategis Pemberdayaan masyarakat</p>	<p>Peningkatan kualitas pembelajaran melalui penguatan komunitas lesson study berbasis "Competition exploration". Penelitian ini bertujuan (1) untuk mengetahui faktor lingkungan internal yang mempengaruhi strategi pengelolaan kewirausahaan pada objek wisata ikan Bendhung Lepen, (2) untuk mengetahui faktor lingkungan eksternal yang mempengaruhi strategi pengelolaan kewirausahaan pada objek wisata ikan Bendhung Lepen; dan (3) untuk mengetahui strategi pengelolaan yang sesuai. sistem pemasaran lokasi atraksi ikan Bendhung Lepen. Metode yang digunakan dalam penelitian ini adalah deskriptif kualitatif dimana data diperoleh dengan cara wawancara, observasi, dan dokumentasi. Wawancara dilakukan secara acak kepada pengunjung objek wisata ikan Bendhung Lepen, masyarakat sekitar irigasi sungai Gajah Wong, dan Masyarakat Bendhung Lepen. Hasil lapangan digunakan untuk analisis SWOT yang terdiri dari tabel IFAS, tabel EFAS, matriks IE, dan matriks SWOT. Hasil analisis pada IFAS dapat diketahui skor untuk faktor internal sebesar 3,43 yang memahami kondisi internal pengelolaan daya tarik wisata ikan di Bendhung Lepen termasuk dalam kategori sedang (rata-rata). Hal ini dikarenakan faktor yang memiliki skor tinggi berada pada titik biaya operasional yang tinggi. Hasil analisis EFAS menunjukkan skor 3,28 yang berarti kondisi eksternal atraksi ikan Bendhung Lepen dalam kondisi baik, dimana faktor yang paling dominan adalah jumlah pesaing masih sedikit, penjualan hasil panen seimbang, dan kepadatan jumlah pengunjung objek wisata.</p>
<div data-bbox="268 1615 392 1733" data-label="Image"></div> <div data-bbox="177 1749 469 1816" data-label="Image"></div>	<p>Copyright © 2022, Sudarti et al This is an open access article under the CC-BY-SA license</p> <div data-bbox="1134 1749 1315 1816" data-label="Image"></div>

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INTRODUCTION

The city of Yogyakarta is popularly entitled as City of Education, this is closely related to the existence of many universities and educational institutions located in the city area. The area of Yogyakarta City is 32.5 Km² which means 1.025% of the area of Yogyakarta Special Region Province with an area of 3,250 hectares. The city of Yogyakarta is divided into 14 sub-districts, 45 villages, 617 RW, and 2,531 RT, and is inhabited by 428,282 people (data source portal of Yogyakarta city government, SIAK as of February 28, 2013) with an average density of 13,177 people / Km².

Yogyakarta is a dense population that still has a comfortable impression to be used as a place to live, in addition to the relatively affordable price of foodstuffs, the ease of transportation facilities is also a special consideration for staying in the city of Yogyakarta. This happens a lot to students or students who wander from outside the city of Yogyakarta, after finishing their education they mostly live and find a job in the city. In addition, tourism that supports the existence of many tourist attractions is able to attract tourists visiting both from within the country and from abroad. The attraction consists of natural attractions, religious attractions, historical attractions, and innovation attractions. One of the innovation attractions located in the city of Yogyakarta is Bendhung Lepen fish attraction. Bendhung Lepen tourist attraction falls into the category of innovative attraction, which is located on the irrigation Gajah Wong river Mrican village Giwangan Kemantren Umbulharjo Yogyakarta (Ulfah et al., 2020).

Bendhung Lepen is a tourist attraction that presents a panorama of fish cultivation in river irrigation. The history of the existence of Bendhung Lepen cannot be separated from the concerns of youth around the Gajah Wong river who see the irrigation conditions of the river that often flood during the rainy season. In addition, the area around the Gajah Wong irrigation is also a slum because it becomes a landfill. The local government's efforts to tackle slums and floods on the Gajah Wong river irrigation site are done by building playgrounds (Abdi, 2021; Nurul, 2020; Suprobo, 2020). The local government hopes that the development of facilities and playground facilities can make the area clean and beautiful. Yet, this could not be realized as the local government has expected. Garbage is still there that clogs the irrigation flow of Gajah Wong river (Masterplandes, 2022; Nurwahyuni et al., 2021; Pangarso et al., 2015). Floods still occur during the rainy season, due to the blockage of garbage that fills river irrigation. This problem is what initiates the youth around to clean up the garbage that clogs the river irrigation flow (Pradana, 2020).

These young men cleaned the river flow by netting shipping waste by making nets installed at several points in the Gajah Wong river irrigation site. In the past, the banks of the Gajah Wong river became the residence of some people who suffered with economic problems. They used the irrigated fringe area of the Gajah Wong river to collect garbage junk. This causes an unpleasant odor and invites disease due to the many flies and mosquitoes that nest in the area. In addition to doing garbage collection that clogs the river irrigation flow, they also dig up piles of garbage that cannot be carried by water at the riverbed. The process of cleaning garbage-until this was run for 4 months starting February 2019. After the irrigation flow of Gajah Wong river was felt to be smooth, they then planted the seeds of tilapia, catfish, and carp in the irrigation river of Gajah Wong. The positive impact began to be seen after this garbage cleaning process, unexpectedly the river irrigation site that had been cultivated fish seeds attracted the attention of some people to visit. The people who visited were happy to see the fish in the irrigation river of Gajah Wong that is clean and beautiful. The above phenomenon has moved the researchers to observe good prospects in mapping the strategic management of entrepreneurship to improve the local economy in the empowerment of communities around the fish attraction of Bendhung Lepen. This project has covered three areas of Sustainable Development Goals to be reached, they are good health and well-being, clean water and sanitation, and decent work and economic growth (Bappenas, 2019).

This research was aimed (1) to know the internal environmental factors that affect the management of entrepreneurship strategies for fish tourism attraction Bendhung Lepen; (2) to know external environmental factors that affect the management of entrepreneurship strategies for fish tourism attraction Bendhung Lepen; and (3) to know the appropriate marketing system for the location of Bendhung Lepen fish attractions.

METHOD

This research used a qualitative approach with phenomenological studies. The data gathered from respondents in the community around the Gajah Wong river irrigation. The project was conducted in July 2021 - November 2021. Supporting informants were visitors of Bendhung Lepen fish tourism, while key informants were village officer, local authorities and Bendhung Lepen community groups. The process in this study is described in Figure 1.

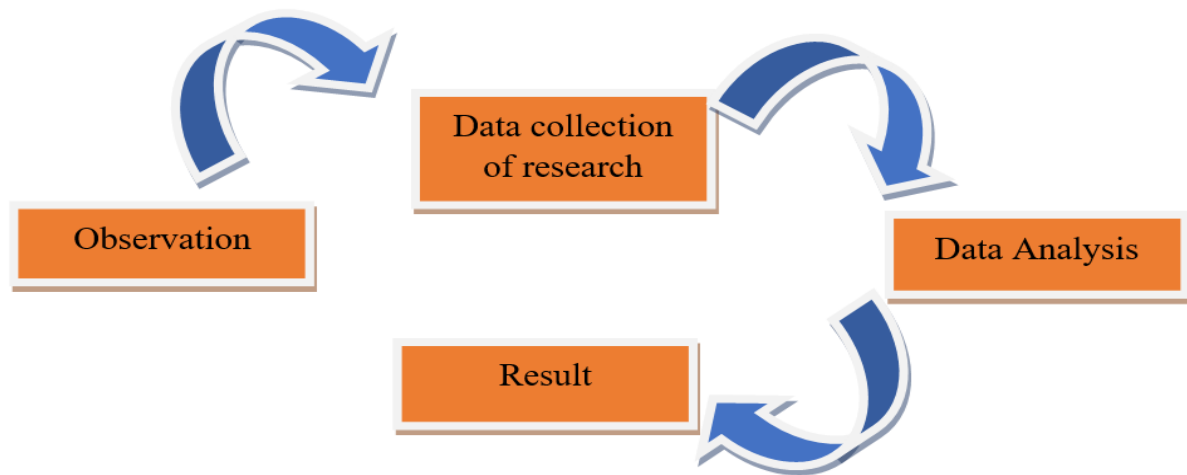


Figure 1. Method

Observation

Data collection was carried out by field observation methods in the form of direct observations, directed group discussions / FGD, and in-depth interviews. The results of data on the field obtained such as interview recordings, field records and photo documentation become data to analyze the problem.

Data collection of research

The data capture used in the study was using purposive sampling and snowball techniques. Research respondents were taken based on a specific goal or purpose, which is related to local potential-based entrepreneurial development strategies through community empowerment. Study respondents who were classified as key informants were determined based on snowball, namely by looking for information to people who know the process of forming Bendhung Lepen tourist attractions.

Data Analysis

a. Interactive analysis techniques

The data analysis process was carried out using interactive analysis techniques proposed by Miles et al., (2019) Interactive analysis techniques have 3 main components, namely data reduction, data presentation, and drawing conclusion. Data reduction is the process of selection, focusing, simplification, and abstraction of rough data that is in field records. Data that come from the field in the form of interview results or summaries of secondary data, then reduced and selected the thing that stood out. The resulting process of data reduction, researchers obtain accurate data. The things observed in this study were the potential of the community around Bendhung Lepen who opened a business selling food, beverages, and children's toy rental services around Bendhung Lepen fish attractions. Documentation material in this research were photos of the process of forming fish attraction Bendhung Lepen and the business stalls that existed in the surrounding community.

b. SWOT analysis techniques

The SWOT analysis model used in this study was the one introduced by Rangkuti (2001). SWOT analysis is the systematic identification of factors based on logic that can maximize strengths (Strengths) and opportunities, but simultaneously minimize weaknesses and threats. SWOT analysis is an analysis to systematically identify various factors to formulate strategies or policies in an economic sector (Herdhiansyah, 2016; Kaci et al., 2017; Safa'at et al., 2021). This analysis was based on logic that can maximize strengths and opportunities, but can simultaneously minimized weaknesses and threats. In carrying out the process of strategic decision making is always related to the development of mission, objectives, strategies, and wisdom. Thus, strategic planning must analyze the strategic factors possessed (strengths, weaknesses, opportunities and threats) for the existence of fish attraction in Bendhung Lepen.

RESULTS AND DISCUSSION

Bendhung Lepen is the name of a tourist attraction located in Mrican Village Giwangan Kemantren Umbulharjo Yogyakarta City. Bendhung Lepen Tourist Attraction presents a panoramic view of fish living in the irrigation of Gajah Wong river. The fish is the result of planting freshwater fish. Gajah Wong river irrigation area was once a slum as a landfill for local residents and garbage disposal shipments from other areas. The local government is working to build sports facilities and recreation parks around the Gajah Wong river irrigation site with the aim of reviving clean and

beautiful river irrigation areas. But these efforts do not provide a significant solution, still there are people who throw garbage in the river.

Garbage that settles can make irrigation canals not smooth, causing flooding around the irrigation of the Gajah Wong river. As a result, this flood caused discomfort of residents who settled in the irrigation of Gajah Wong river. The impact of floods in the irrigation of Gajah Wong river causes a new problem, namely many residents who are affected by dengue fever. Residents are flooded by the irrigation of Gajah Wong river that contracted dengue fever is increasing as the amount of garbage that pooled in the river irrigation. The phenomena fostered Mrican village youth initiative to clean up the irrigation of Gajah Wong river.

Andhy Noor Wijanarko, the manager of Bendhung Lepen fish attraction, said that the cleaning of garbage in the irrigation of Gajah Wong river was done through several stages. The first stage was carried out by the youth of Mrican village by netting garbage on the irrigation of Gajah Wong river. Then, they dug up the garbage that settles on the riverbed so that the flow of water was smooth. The second stage, they created garbage nets planted on the barrier between the irrigation sides of the Gajah Wong riverbank. This cleaning process was run for 4 months starting from February -May 2019. Once it was clean enough, the flow along the irrigation of Gajah Wong river began to be mapped for planting fish seeds. The spreading of fish seeds symbolized the establishment of the Bendhung Lepen Community.

Bendhung Lepen community consists of all residents around the Gajah Wong river irrigation river and the youth of Karang Taruna of Mrican. Bendhung Lepen community synergizes with the local government for the process of fish maintenance and maintaining cleanliness along the irrigation of Gajah Wong river. Over time, the clean irrigation of Gajah Wong river invites many people to visit to enjoy the scenery of the fish along the river irrigation. Tours offered in the form of fishing using fishing rods, feeding fish along river irrigation, and playing with children's rides.

Gajah Wong river irrigation management

The concern around the irrigation of Gajah Wong river will dirty the river irrigation and blockage the irrigation flow became the spirit of the young man to clean the river. The irrigation serves as a water channel to flow through farmers' rice fields. The process of cleaning up river irrigation was begun with the excavation of joint deposits located at the base of Gajah Wong river irrigation. This joint has a thickness of around 60cm, which consists of household waste in the form of plastics, cans of fast food wrappers, and broken glass. While the garbage deposits from the hospital are also seen from the presence of syringe marks and infusion marks. Joint excavation was done gradually, this was to reduce the possibility of remaining joints that were not excavated. Some people and residents around the irrigation of Gajah Wong river irrigation trying to make the river irrigation base look clean. After the excavation of the joints was quite clean, the next step of the youth and residents around the irrigation of Gajah Wong river irrigation made a plan to design the creation of garbage nets (bulkheads).

The design of making these garbage nets was aimed to inhibit waste that was thrown carelessly in the Gajah Wong river. The width and length of the garbage nets were tailored to the needs of bulkheads in each Gajah Wong river irrigation site. After going through several negotiations, it was decided to make 4 garbage nets. These garbage nets would be a bulkhead to hold garbage so as to make the irrigation of Gajah Wong river clean. As for after these nets were installed at 4 points, the youths and residents around the Gajah Wong river irrigation site made a picket schedule to dispose of the garbage that concerns the nets.

Obstacles experienced during the process of cleaning the irrigation of Gajah Wong river

Some people and residents around the Gajah Wong river irrigation site found the obstacles in the process of cleaning the irrigation of Gajah Wong river, namely joint deposits that had a thickness of about 60cm turned out to be medical waste. The language of medical waste caused the youth and the surrounding residents must be careful when carrying out the process of digging joints. Another obstacle experienced by youth and residents was that it cannot expect the number of garbage shipments from garbage dumps dumped in the upper reaches of Gajah Wong river. This unstoppable garbage makes some people and surrounding residents restless, because the garbage becomes a new burden, when the process of cleaning joint deposits was carried out for days. In addition to the unexpected shipment of garbage from the headwaters of Gajah Wong river, there is a sudden rising water discharge caused by days of rain. This rising water discharge resulted in the installation of garbage nets to come off. After doing cause-and-effect, the youth and residents around Gajah Wong river irrigation airport tried to replant the garbage nets with a stronger system and more effective networking materials during floods.

Birth of Bendhung Lepen Community

The irrigation of Gajah Wong river that had been cleaned up from joints and garbage became beautiful and could avoid the crowd of flies that often-covered piles of garbage around the river. This was inseparable from the role of youth and residents around the Gajah Wong river irrigation river who were eager to clean up river irrigation. The youth association and residents around the Gajah Wong river irrigation site made a deal to form a community. It was triggered to name the community as Bendhung Lepen Community. In order to the inauguration of the establishment of the Bendhung Lepen Community, as a symbol they scattered the seeds of freshwater fish such as tilapia, catfish, and

carp in the irrigation river of Gajah Wong. Like an organization, Bendhung Lepen has a vision: to create an irrigation stream of the Gajah River wong village area clean of garbage and make a place of education to the community about the environment. While the mission of Bendhung Lepen are: (1) Multiplying freshwater ecosystems in irrigation streams; (2) Creating beauty around irrigation; (3) Educating as a community recreation about environment; (4) Improving the economy of the community; and (5) Increasing human resources

Empowerment of freshwater fish in Gajah Wong river irrigation

After the spread of freshwater fish seeds in the irrigation of Gajah Wong river, Bendhung Lepen Community made a work plan. This was done to spread more benefit on the establishment of The Bendhung Lepen Community can be reached by residents around the Gajah Wong river irrigation site. On the initiative of Mrican villagers, they open donation for public as an effort to support the maintenance of freshwater fish seeds cultivated in the irrigation of Gajah Wong river. The donation of Mrican villagers is done sincerely and collectively. The proceeds from the donation of these residents were the initial capital to buy fish food and became a cleanliness fund to maintain the sustainability of freshwater fish seeds in the Gajah Wong river irrigation river (Figure 2 and Figure 3).



Figure 2. Preparing the irrigation



Figure 3. After maintenance the irrigation

Over time, the purchase of fish seeds can be resolved with the sale of fish crops in a period of 4-6 months from the planting period of fish seeds. The size of tilapia stocked was 3 (three) fingers of an adult's hand with a price range of Rp.27,500, - per kg. From time to time, the number of seed purchases increased. The price increase is presented in the Table 1.

Table 1. Report on purchase of fish seedlings

No	Planting time	Weight (KG)	Total (Rp.)	Act
1	10 May 2019	125	3.375.000,-	Rp.27.000,-/Kg
2	05 September 2019	300	8.100.000,-	Rp.27.000,-/Kg
3	12 February 2020	675	18.225.000,-	Rp.27.000,-/Kg
4	12 September 2020	700	18.900.000,-	Rp.27.000,-/Kg
5	14 March 2020	800	21.600.000,-	Rp.27.000,-/Kg
6	30 November 2021	700	18.900.000,-	Rp.27.000,-/Kg

Related to the harvest of tilapia can only be done in every 4 (four) month. This was because the cultivation capacity was still limited. The proceeds from the fish harvest to date were mostly used for the operations of the Bendhung Lepen community. As well as the repurchase of fish seedlings, the cost of cleanliness, and the cost of renovating supporting facilities and infrastructure. Here is an overview of tilapia harvest calculations carried out in the range of every 4 (four) month (Table 2).

Table 2. Sales report

No	Planting time	Weight (KG)	Total (Rp.)	Act
1	01 September 2019	400	10.000.000,-	Rp.25.000,-/Kg
2	09 February 2020	893	22.325.000,-	Rp.25.000,-/Kg
3	09 September 2020	1.210	30.250.000,-	Rp.25.000,-/Kg
4	10 March 2021	1.300	35.750.000,-	Rp.27.500,-/Kg
5	28 November 2021	1.830	50.325.000,-	Rp.27.500,-/Kg

Note: There is a long-time difference between September 2020 and September 2020 (March 2021 due to the condition of the COVID-19 outbreak).

Economic improvement of the surrounding community

The existence of Bendhung Lepen fish attractions also opened new business opportunities for the community around the Gajah Wong river irrigation site. Some residents were seen starting to open children's snack stalls (street food corner) but it is still very simple. Street food corners were not well organized because it was still in the process of structuring culinary attractions on Bendhung Lepen fish attractions. The existence of tourist areas was certainly not separated by the provision of parking of visitors' vehicles, in addition to opening snacks, the surrounding residents also began to participate in the process of providing parking space for visitors to Bendhung Lepen fish attractions. Currently, the visitor parking lot used the land owned by Mrican Dam. The parking location was in front of the Bendhung Lepen tourist entrance gate. Residents who participated in the parking guard, arranged by the Bendhung Lepen Community. They alternately served according to the mutually agreed time. The parking rate of visitors' vehicles had no price benchmark but was voluntary. While the proceeds from the free gift were used to finance the needs of the managing personnel themselves and the maintenance of parking lots.

Cooperation and Sponsorship

The existence of Bendhung Lepen fish attractions was able to be a pilot for the general public for good environmental management in the case of river irrigation. Perseverance and persistence of the Bendhung Lepen Community as a manager of fish tourism, several times received great credit and sympathy from several institutions, including: (1) President Director of PT. DANONE INTERNATIONAL; by conducting social services in the procurement of freshwater fish. (2) SCTV AWARD; as a form of appreciation of the younger generation in the field of economic empowerment. (3) CSR Bank BRI Branch Cik Ditiro Yogyakarta; BRI Peduli program was realized in the form of the development of beauty and artistic touch.

Internal environmental analysis

Identification of internal factors in Bendhung Lepen fish attractions was to have a strategic area as a destination for tourist attractions. Transportation facilities to the tourist location of Bendhung Lepen fish attractions were easily available, this is because the location of Bendhung Lepen fish attractions was near to the Giwangan Terminal of Yogyakarta City. Bendhung Lepen fish attraction sought to attract tourist visitors by making promotions through the instagram social media. The results of the analysis on IFAS are presented table 3. It is known that the score for internal

factors of 3.43 which understands the internal condition of management of fish attraction management of Bendhung Lepen falls into moderate category (average), this is because factors that have a high score are at high operational cost points.

Table. 3. Analysis IFAS

Internal Environmental Factors			
Opportunities	Weight	Rating	Value
Strategic Location	0.15	5	0.75
Innovation (Event)	0.13	5	0.65
Supply human resources	0.10	4	0.40
Promotion	0.11	4	0.44
Public facilities	0.10	4	0.40
	0.59		2.64
Threats			
High operating costs	0.16	1	0.16
Internal conflicts of human resources	0.12	2	0.24
Profit oriented sharing	0.13	3	0.39
	0.41		0.79
	1.00		3.43

External Environmental Factors

After the internal strategic factors are arranged, the next step is then compiled EFAS (External Factor Analysis Summary) table to find out the various possible opportunities and threats faced (Table 4). The determination of the score in the EFAS analysis was based on the results of an interview with Andhy Noor Wijanarko as chairman of the Bendhung Lepen Community. The results of the EFAS analysis showed a score of 3.28 which means the external condition of Bendhung Lepen fish attractions are in good condition, where the most dominant factor is the number of competitors is still small, balanced crop sales, and the density of the number of tourist attraction visitors. The innovation of Bendhung Lepen fish attractions is also able to open business opportunities for the community around the Gajah Wong river irrigation site to sell snacks. This reduces unemployment and creates new jobs.

Table 4. EFAS Analysis

External Environmental Factors			
Opportunities	Weight	Rating	Value
Less competitors of freshwater fish attractions	0,15	5	0.75
Playgrounds around irrigation sites built by the local government	0,06	3	0.18
Sales of freshwater fish consumers	0,12	4	0.48
Sponsorship	0,08	3	0.24
Good community response	0,07	3	0.21
High rate Visitors	0,13	4	0.52
Economic improvement	0,05	1	0.05
	0,63		2.43
Threats			
Theft of freshwater fish	0,05	3	0.15
Weather conditions	0.11	1	0.11
The pricing of seed freshwater fish unstable	0.03	4	0.12
Erratic river water discharge	0.08	2	0.16
Damage to garbage blocking nets	0.06	3	0.18
Unexpected shipment of garbage from the headwaters of Gajah Wong river	0.04	4	0.16
	0.37		0.85
	1.00		3.28

External-Internal Matrix Analysis

The results of the IE matrix analysis, obtained IFAS score of 3.43 and EFAS of 3.28 so that Bendhung Lepen fish attractions are in cell V. This means that the strategy that is in accordance with Bendhung Lepen fish tourism is a growth strategy through horizontal integration and stability. In this case, the manager of Bendhung Lepen fish attraction must continue to innovate and develop ideas to cooperate with many sponsorship in order to be able to develop Bendhung Lepen fish attractions (Table 5).

Table 5. IE Analysis

IFAS EFAS	High (4-5)	Medium (3-2)	Low (1-2)
High (4-5)	I Growth	II Growth	III Shrinking
Medium (2-3)	IV Stability	V Growth	VI Shrinking
Low (1-2)	VII Growth	VIII Growth	IX Liquidation

SWOT Matrix

The S-O strategy is a strategy that is formulated using all the power to take advantage of the greatest opportunity. Based on these two aspects, the strategies that can be applied by the manager of Bendhung Lepen fish attractions are: (1) Bendhung Lepen manager actively conducts event innovations such as fishing competitions, fishing competitions, or programs to educate the environment for visits from educational institutions and institutions that can support the development of Bendhung Lepen fish attractions. (2) Maintain the cleanliness of tourist attractions so that visitors feel clean and comfortable. (3) Arrangement of places to be made to open a business such as culinary tourism.

The S-T strategy is formulated by applying the power possessed by the manager of fish attraction Bendhung Lepen, namely: (1) Installing CCTV for security; (2) Looking for a trusted fish seed supplier in order to be able to anticipate the increase in the price of fish seeds, and (3) Campaigning not to dump waste in the river through community-based programs.

The S-W strategy is applied based on the utilization of existing opportunities by minimizing existing weaknesses. Strategies that can be used by Bendhung Lepen fish tourism managers are: (1) Promoting innovation in the era of digitalization. (2) Establishing cooperation to obtain sponsorship with several private parties such as banks, or educational institutions. (3) Managing a good parking space so that visitors feel safe and comfortable. (4) Applying the sale of fish food such as pellets to visitors who will provide fish food directly.

The W-T strategy is implemented by minimizing existing weaknesses to avoid threats. The strategy that can be applied is (1) Making a regular schedule to monitor the garbage nets that are in the irrigation of rivers that have freshwater fish, (2) Always monitoring the weather through BMKG and trusted weather sites

Thus, based on Table 6 below the strategy that can be applied to the manager of fish attraction Bendhung Lepen is the SO strategy. By using the SO strategy, fish object manager Bendhung Lepen tries to maximize the power they have to take advantage of existing opportunities. This is in line with what the Asy Syahid and Suwarni (2018) stated in the journal business economics: "SO strategies are various strategies that are generated through a view that a particular company or business unit can use their strengths to take advantage of various opportunities".

Table 6. SWOT matrix

IFAS EFAS	Strengths: a. Strategic location b. Innovation (Event) c. Supply human resources d. Promotion e. Public facilities	Weaknesses: a. High operating costs b. Internal conflicts of human resources c. Profit oriented sharing
Opportunities: a. Less competitors of freshwater fish attractions b. Playgrounds around irrigation sites built by the local government c. Sales of freshwater fish consumers d. Sponsorship e. Good community response f. High rate Visitors g. Economic improvement	Strategic S-O a. Bendhung Lepen manager actively conducts event innovations such as fishing competitions, fishing competitions, or programs to educate the environment for visits from educational institutions. b. Maintain the cleanliness of tourist attractions so that visitors feel clean and comfortable c. Arrangement of special places to be made to open businesses such as culinary tourism	Strategic S-W a. Promoted innovation in the era of digitalization b. Establish cooperation to obtain sponsorship to improve the economy of the community with several private parties such as banks, or educational institutions. c. Manage parking spaces to make visitors feel safe and comfortable d. Apply the sale of fish food such as pellets to visitors who will provide fish food directly
Threats: a. Theft of freshwater fish b. Weather conditions c. The pricing of seed freshwater fish unstable d. Erratic river water discharge e. Damage to garbage blocking nets f. Unexpected shipment of garbage from the headwaters of Gajah Wong river	Strategi S-T: a. Installing CCTV for security b. Looking for a trusted fish seed supplier in order to be able to anticipate the increase in the price of fish seeds c. Campaigning not to dump waste in the river through community-based programs.	Strategi W-T: a. Create a routine schedule to monitor garbage nets that are in the irrigation of rivers that have freshwater fish b. Always monitor the weather through BMKG and trusted weather sites

CONCLUSION

Bendhung Lepen fish attraction is an innovation on tourist attraction that is realized based on the concerns of youth and residents around the Gajah Wong river irrigation site. This tourist attraction is able to make visitors realize the importance of maintaining the natural environment for the survival of life. The manager of Bendhung Lepen fish attraction is The Bendhung Lepen Community consisting of the youth of Mrican and residents around the Gajah Wong river irrigation river. The vision of the Bendhung Lepen Community is to create an irrigation stream of Gajah Wong river area in Mrican village clean of garbage and make a place of education to the community about the environment. While the mission of Bendhung Lepen is to multiply freshwater ecosystems in irrigation streams, to create beauty around irrigation, to educate community about lenvironment, to improve the economy of the community, and to increase human resources.

After seeing the results of this study, the authors concluded that the sustainability of Bendhung Lepen fish attractions requires joint effort and synergy between the surrounding community and the local government to advance the attraction. As for the results in this study, the author hopes to be a supportive input for the success and sustainability of Bendhung Lepen fish attractions.

Limitation

This study is a phenomenological study, where the research is conducted based on case studies at a certain period of time, so it does not rule out the possibility that at some point there will be a new case in the fish attraction Bendhung Lepen. As for the anticipated steps taken by researchers to find out the existence of new cases that will arise is to remain a facilitator to support the Bendhung Lepen Community.

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REFERENCES

- Abdi, H. (2021). *Bendung Lepen di Jogja, Taman Desa Kotor Kini Jadi Tempat Wisata Keluarga yang Nyaman*. Hot Liputan6. <https://hot.liputan6.com/read/4470937/bendung-lepen-di-jogja-taman-desa-kotor-kini-jadi-tempat-wisata-keluarga-yang-nyaman>
- Asy Syahid, N., & Suwarni, S. (2018). Analisis Swot Sebagai Dasar Strategi Pemasaran Pada Produk Airum (Air Minum Um). *Ekonomi Bisnis*, 23(1), 21–28. <https://doi.org/10.17977/um042v23i1p21-28>
- Bappenas. (2019). *Roadmap of SDGs Indonesia : A Hihghlight*. BAPPENAS. https://www.unicef.org/indonesia/sites/unicef.org/indonesia/files/2019-07/ROADMAP_OF_SDGs_INDONESIA_final_draft.pdf
- Herdhiansyah, D. (2016). The Implications of Government Policy for the Development of Agro-industry Sago with SWOT Analysis. *International Journal of Business and Management Invention ISSN*, 5(7), 18–22. www.ijbmi.org
- Kaci, A. S., Prasetya, D. W. I. A., & Sisharini, N. (2017). Study of Swot Analysis on Academic Information. *Journal of Electrical Engineering and Computer Sciences*, 2(2), 263–270.
- Masterplandesa. (2022). *Bendung Lepen_ Bukti Kreativitas Pemuda Desa yang Didukung oleh Pemangku Kepentingan yang Ada*. masterplandesa. <https://www.masterplandesa.com/wisata/bendung-lepen-bukti-kreativitas-pemuda-desa-yang-didukung-oleh-pemangku-kepentingan-yang-ada/>
- Miles, M. B., Huberman, A. C., & Saldana, J. (2019). *Qualitative data analysis*. SAGE Publications, Inc. <https://us.sagepub.com/en-us/nam/qualitative-data-analysis/book246128#contents>
- Nurul, A. (2020). *Menengok Bendung Lepen Sungai Gajahwong, Selokan Jadi Tempat Rekreasi*. TribunJogja Travel. <https://tribunjogjatravel.tribunnews.com/2020/07/22/menengok-bendung-lepen-sungai-gajahwong-selokan-jadi-tempat-rekreasi?page=all>
- Nurwahyuni, I. L., Cahyani, L. I., & Fitriana, N. (2021). Peran Komunitas Bendhung Lepen Dalam Membangun. *Jurnal Empati*, 10(6), 436–446.
- Pangarso, B., Diyanto, D., Sabarudin, A., Purnama, I., Sugiarto, Y. R., Suryanugraha, G., & Swinareswari, A. N. (2015). *Indikasi Keestetikaan lingkungan perkotaan kawasan pusat Kota Wonosari Kabupaten Gunungkidul Daerah Istimewa Yogyakarta februari s/d oktober 2015* (Issue November).
- Pradana, A. (2020). Bendhung Lepen, dari selokan penuh limbah jadi destinasi wisata di Yogyakarta. In *BBC News Indonesia*. <https://www.bbc.com/indonesia/media-54600957>
- Rangkuti, F. (2001). *Analisis SWOT teknik membedah kasus bisnis*. Gramedia Pustaka Utama.
- Safa'at, Nuzulul Fatimah, & Ahmad, M. A. (2021). Swot Analysis To Determine a Company'S Strategy in the State of the Covid-19 Plague in Xyz Company. *Journal of Islamic Economics Perspectives*, 3(2), 1–9. <https://doi.org/10.35719/jiep.v3i2.44>
- Suprobo, H. Y. (2020). *Karang Taruna di Kampung Ini Sulap Irigasi Jadi Tempat Wisata Asri*. Harianjogja. <https://jogjapolitan.harianjogja.com/read/2020/07/11/510/1044115/karang-taruna-di-kampung-ini-sulap-irigasi-jadi-tempat-wisata-asrihttps://>

Ulfah, T. T., Kamala, I., & Latifah, S. N. (2020). Environmental preservation: Mrican youth innovation on slummed irrigation channels (Bendung Lepen Gajah Wong). *Journal of Community Service and Empowerment*, 1(3), 134–141.
<https://doi.org/10.22219/jcse.v1i3.13466>



Rationales for engaged scholarship projects in one college at a distance institution

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ARTICLE INFO	ABSTRACT
<p>Article history Received: 2022-02-15 Revised: 2022-05-18 Accepted: 2022-10-14 Published: 2022-12-06</p> <p>Keywords Engaged scholarship Motivation Project leaders Rationale</p>	<p><i>This article aimed to explore engaged scholarship project leaders' rationales for starting their engaged scholarship project in communities. Community engagement (or engaged scholarship) has become a required part of the academia and increasingly becoming a scholarly endeavor. Academics in the education faculty at one university in South Africa were asked to voluntarily participate in a study exploring their rationales for starting their engaged scholarship projects. Semi-structured interviews were held with project leaders. Responses indicated four factors in rationales, firstly, the context selected for project were closely linked to project leader's early experiences in education, secondly, project leaders selected subjects that were known for being problematic to teach, thirdly, the challenges within the context motivated project leaders to become involved and lastly, project leaders indicated that their motivation to remain involved in the project stemmed from wanting to develop the project further. The study was limited to project leaders in one faculty and only focused on rationales. Engaged scholarship projects are closely intertwined with personal backgrounds. It is recommended that community engagement project leaders reflect on their rationales to build more robust projects.</i></p>
<p>Kata kunci Alasan Beasiswa yang terlibat Motivasi Pemimpin proyek</p> <div data-bbox="268 1621 389 1738"></div> <div data-bbox="177 1753 466 1816"></div>	<p>Alasan untuk terlibat proyek beasiswa di satu perguruan tinggi di lembaga jarak jauh. Artikel ini bertujuan untuk mengeksplorasi alasan para pemimpin proyek beasiswa terlibat untuk memulai proyek beasiswa terlibat mereka di komunitas. Keterlibatan masyarakat (atau keterlibatan beasiswa) telah menjadi bagian wajib dari akademisi dan semakin menjadi upaya ilmiah. Akademisi di fakultas pendidikan di salah satu universitas di Afrika Selatan diminta untuk secara sukarela berpartisipasi dalam studi yang mengeksplorasi alasan mereka untuk memulai proyek beasiswa mereka. Wawancara semi-terstruktur diadakan dengan para pemimpin proyek. Tanggapan menunjukkan empat faktor dalam alasan, pertama, konteks yang dipilih untuk proyek terkait erat dengan pengalaman awal pemimpin proyek dalam pendidikan, kedua, pemimpin proyek memilih mata pelajaran yang dikenal bermasalah untuk diajarkan, ketiga, tantangan dalam konteks memotivasi pemimpin proyek. Untuk terlibat dan terakhir, pemimpin proyek menunjukkan bahwa motivasi mereka untuk tetap terlibat dalam proyek berasal dari keinginan untuk mengembangkan proyek lebih lanjut. Penelitian ini terbatas pada pemimpin proyek di satu fakultas dan hanya terfokus pada alasan-alasan. Proyek beasiswa yang terlibat terkait erat dengan latar belakang pribadi. Direkomendasikan agar para pemimpin proyek pelibatan masyarakat merefleksikan alasan mereka untuk membangun proyek yang lebih kuat.</p> <p style="text-align: right;">Copyright © 2022, Biccard et al This is an open access article under the CC-BY-SA license</p> <div data-bbox="1134 1753 1315 1816"></div>

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INTRODUCTION

Engaged scholarship seeks to understand complex problems from a variety of stakeholder perspectives (van de Ven, 2018). Universities can play a significant role in focusing the research lens on transforming society's problems into academic knowledge while the collaboration between communities and academics can make known academic knowledge useful in the world. Petersen and Kruss (2021) propose the university as a 'change agent' when collaboration with non-traditional partners in community engaged projects. Nkhoma (2020) highlights the positive transformation that can come about in Africa through community engagement. In South Africa, Bhagwan (2017) acknowledges the need for Higher education to embrace community engagement as a means to discovery and innovation while providing for the well-being of communities. This article aims to meet the need identified by Paphitis and Kelland (2015) (in Bhagwan, 2017) that engaged scholarship can help to develop a "unique South African philosophical identity" (p. 173). Furthermore, the South African context is one of a deeply unequal society, with the wealth inequality being rated as one of the highest in the world (statista.com). Engaged scholarship may be one avenue to level some of the inequalities that exist. Since engaged scholarship is one avenue of bridging inequality, this study focuses on the starting point for engaged scholarship projects, that being rationales. Our study will contribute toward the need for global perspectives in community engagement highlighted by Koekkoek, Ham and Kleinhans's (2021) literature review. In addition, we undertake to be cognizant of the sustainable development goals (SDG) as set out by the United Nations, specifically goal 4 which aims to ensure inclusive and equitable quality education and promote lifelong learning opportunities for all (<https://sdgs.un.org/goals/goal4>).

The context of this study is a South African distance institution where engaged scholarship is a part of the job description of academics in their various fields. Academics undertake engaged scholarship with communities for various reasons and set up projects based on their own fields of specialisation and interests. Staff undertake a needs analysis and jointly, with the community, endeavor to solve their most urgent needs. Community engagement is only successful and sustainable if the needs are systematically and comprehensively understood. The university encapsulated that engagement must be scholarly, systematic, transformative and mutually beneficial (Faculty End of year showcasing, 2021) underscoring the institutional values. At one of the Colleges at the university, several community engagement projects are registered that cater for community needs across the nine provinces of South Africa. These projects, their deliverables and outcomes are expected to be factored into research outputs and be re-invested into the courses offered at the university. In this way, CE is conceptualised as a holistic integrated endeavour. The holistic and diverse nature of CE may lead to issues identified by Bhagwan (2017) with inconsistent definitions and lack of consistent terminology in the CE literature.

Although the role of engaged scholarship in the academic project has been proposed (Beaulieu, Breton & Brousselle, 2018) with various models of engaged scholarship identified (Franz, 2009; Holland, Powell, Eng, & Drew, 2010; Dawwas & Daragmeh, 2021), far less is known about the rationale for the choices academics make when embarking on engaged scholarship with communities. Higher education aims to enhance social justice through engaged scholarship projects (Machimana, Sefotho & Ebersohn, 2018) and although Nkhoma (2020) highlights the unique nature of community engagement projects and as such, we endeavored to understand the various personal rationales academics have for undertaking these projects. These personal rationales may assist in understanding the 'tensions and asymmetries' that arise when universities undertake engaged scholarship projects in resource constrained contexts (Petersen & Kruss, 2021).

Beaulieu et al (2018) study highlights the new role of academics when they take on engaged scholarship and place the academic at the center of engaged scholarship. This shift of engaged scholarship from the periphery to the center of the academic project changes the positionality of the academic. Douglas (2012) highlights that when CE becomes the center of the academic's role, then the issue of why (and not how) we engage with communities is important. In drawing on the perspectives of the academics involved in community engagement projects, we consider the perceptions of academics in engaged scholarship. We heed Franz (2009)'s call that "faculty need multiple entry and leverage points to practice and tell the story of their engaged scholarship" (p.175). The purpose of this paper is to explore investigate the rationale of the project leaders in selecting the content, context and community partners for their various projects. These three aspects were selected since they delineate the main areas of academic community engagement projects.

The research questions we sought to answer in this study are: What are the rationales for the choices academics make regarding their engaged scholarship projects? Although institutional motivation for undertaking engaged scholarship has been researched (see Koekkoek et al., 2021) more studies of a qualitative nature are needed to understand individual motivations behind engaged scholarship, although the institutional motivations may drive individual motivations and rationales. While Bhagwan (2020) sets out that the South African Higher Education landscape requires reform so that universities are more alert to and engaged in society's problems there is still a need for a greater conceptualisation of community engagement in local literature (Bhagwan, 2020).

In Beaulieu et al.'s (2018) scoping review of articles published in the field of community engagement or engaged scholarship, a number of themes emanated. These themes underpin the articles published but can also be used to analyse academics' rationales for their choices when engaging in CE. Beaulieu et al (2018) identified values, principles and processes of engaged scholarship articles. The values identified are social justice and citizenship, while they also found five principles of high-quality scholarship, reciprocity, and identified community needs, boundary crossing and democratization of knowledge. While they also highlighted that processes fall into two groups: individual (teaching, research, service) and institutional (mission, reward structure, logistical support and students).

Nkhoma (2020) interrogated how and for whom academics produce knowledge from their community engagement projects using Burawoy's, (2010) framework. Nkhoma (2020, p. 91) found that academics in Malawi had "multiple motives"

and "multiple aims" in their engaged scholarship. Nkhoma's (2020, p. 79) quantitative study found that academics were motivated to engage with communities to improve "their personal knowledge, transform society, use their personal skills to solve problems in society, and fulfill the desire to co-create knowledge with community partners and improve students' capacity to learn". We acknowledge the importance of Nkhoma's work and the usefulness of Burroway's framework. However, we believe that before we can explore the knowledge produced by academics at the particular institution in the study, we want to investigate the rationales and decision-making behind their projects from a qualitative perspective in the South African context. Bhagwan (2020) exposed a "lack of conceptual clarity" in the literature related to community engagement in South Africa, while also pointing out the paucity of benchmarking tools for university community engagement. Machimana, Sefotho and Ebersohn's, (2018) study found that challenges exist in South Africa when rural schools and higher education institutions collaborate in an engaged scholarship partnership. These scholars found structural mismatches and miscommunication regarding expectations. This article seeks to add to the conceptual clarity of engaged scholarship in South Africa by asking questions around the rationale for an engaged scholarship projects and understanding of the term "engaged scholarship".

Existing research reiterates that the university culture should be focused on new practices and its leadership and policies should allow for new ways of doing things (Bhagwan, 2020; Olowu, 2012). Mutually beneficially relationships between those inside the university (e.g. academics) and those outside the university (e.g. the people of South Africa) need to be nurtured if universities are to become and remain relevant in the everyday lives of people beyond the walls of the university and relevant in a decentralized, engaged academic space. While there are calls for the institutionalization of community engagement in South Africa, authentic institutionalization can only occur if all levels of the university (from management to individual project leaders) conceptualise and understand the role that community engagement or engaged scholarship plays in building robust teaching, learning and research spaces.

Theoretically, we also considered Little's (1983) conceptions of the personal project of people. Personal projects are defined as "a set of interrelated acts extending over time [...] that reflect cognitive, affective and behavioral aspects of human conduct" (p. 276). Little proposes four stages in the development of a personal project: inception; planning, action and termination. For the purposes of this study, inception is the relevant aspect of rationales academics have for their engaged scholarship projects. Inception comprises of four sub-phases of awareness, identification, pre-evaluation and acceptance (p. 277). Awareness involves an awakening of the personal need to undertake the project, identification means the project becomes more structured and clarified. Once the individual is aware of the protect potential, the project is pre-evaluated to determine if the project results would be in line with the individual's values and if the individual has the necessary resources to embark on the project. The final stage in the inception of the personal project is acceptance, where the individual decides to embark on the project. A commitment to the project involves private reflection and deliberation.

METHOD

This interpretivist qualitative research can be considered a case study of one faculty's community engagement projects and the rationale behind academics' choices for their projects. An interpretivist paradigm means that we interpret the subjective meanings that people give to their activities (Cohen, Manion, & Morrison, 2017) Our qualitative approach reflects our search for meaning and our need to understand the intentions and decisions of our participants.

We invited all project leaders (n=19) in one college to answer open-ended online questionnaires or take part in an online interview asking the same questions. This includes the reasons for starting the project and details regarding their decisions about the context, content and beneficiaries. The project leaders are all academics in the same faculty.

The participants are all distance education lecturers in the College of Education, with varying degrees of experience in academia. They were lecturing courses across ten different departments and at different levels (undergraduate and postgraduate). Their key performance indicators include teaching and learning, research, engaged scholarship and academic citizenship. The institution actively encourages engaged scholarship and assists with funding registered projects. At the time of the interviews these lecturers had spent a number of months working remotely due to the COVID-19 pandemic and many projects had switched to online contact with stakeholders' partners. During the interviews, we asked questions such as that allowed us to focus on content, context and communities. (1). What was your main reason for becoming involved with community engagement? (2). Why did you select the province/schools/beneficiaries that you are working with? (community) (3). What motivates you to keep working in this context? (context) (4). How did you decide to select the specific content for the project? (content).

In terms of ethical practice, we secured ethical clearance from our institution and further explain our own positionality in this research to the participants. We are both project leaders for engaged scholarship projects in our faculty. One of us is the community engagement manager for the faculty while the other is the community engagement chair for one of the ten departments within the faculty.

Participation in the interviews was voluntary and interviewees could decline at any time and request to remove their responses up until the time that we publish. No identifying information will be presented.

RESULTS AND DISCUSSION

We saved responses from Google forms in Word format and we transcribed the audio recordings. We coded each response according to the values, principles and processes in the rationales and look for central themes in the data. Although Beaulieu et al.'s (2018) work provides broad categories, we were wanting to identify and understand a more fine-

grained analysis of the rationale's each participant had for undertaking their engaged scholarship projects and to further explore their decisions regarding the context, content and beneficiaries for their projects. We will also use open coding when analysing the move from the term community engagement to engaged scholarship.

Reasons for starting the projects

The following three rationales became evident when coding the transcriptions. Project leaders were deeply focused on the context of their projects, both in terms of having had experience in this community and understanding the challenges of the community. They also focused on the difficulty in teaching the specific subject.

1. Own experiences in the same context

I worked under difficult conditions when I was a teacher in this province. I studied the same problem for my DEd study. I decided to help the teachers when I received funding so that I can share my experiences and implement the recommendations from my [D.Ed] study.

Other project leaders echoed this:

The province and the circuit selected is where I worked as a teacher and experienced the same problems

I wanted to fulfil the needs of those specific learners, so I chose that context. I had taught there for over 20 years.

Mbah (2019, p. 29) indicated that "local people can articulate the knowledge of what local community issues are, the knowledge of where local community issues are, the knowledge of when local community issues are apparent, and possibly the knowledge of how local community issues could be addressed, drawing on their lived experiences". It appears that the project leaders, having local knowledge serve the interests of their project communicates better. It may also be possible, that having project leaders who had been part of the community, may mitigate power gaps that can occur in projects involving the academe and communities.

2. Challenges that exist in the context

Project leaders indicated that they were familiar with the challenges in the context that they selected. They showed a deep understanding for the context and a need to serve the community in solving these challenges.

This project leaders spoke about challenges such as access to resources as well as isolation.

The rural community was selected as these schools often face difficulties such as access to resources. The teachers may feel isolated and do not have many opportunities to share teaching strategies and learn from one another.

Another project leader said:

Teaching is already challenging in most schools and the community I work with have additional challenges such as isolation and accessing resources. I just feel that the project can help us all develop an understanding (and perhaps), mediate some of these additional challenges.

3. Challenges with the subject selected

One project leader made specific reference to the school subject that formed the content of the project.

You are aware of how poorly learners perform in mathematics. And for years I have experience problems with the abstractness of mathematics. We did try to use concrete objects, we tried all of that. But, how do you engage all the diverse learners in your class? Through my PhD study, I found that using games would help learners to learn and at the same time motivate and encourage them to take mathematics further. We need mathematics. We need to project ourselves as a South African country and how we achieve improving mathematics in South Africa.

Two of the project leaders specifically mentioned the knowledge they gained in their PhD or DEd studies. It appears that extensive knowledge coupled with the need to serve a known community is motivation for starting engaged scholarship projects. The participants being in the Faculty of Education may have a different outlook and perspective to lecturers in other colleges. One participant indicated that due to knowledge and experience with the subject, her confidence enables her to provide better support to the partners in her project.

I chose to work in this specific subject because I feel that with my experience in having taught this subject together with my experience in offering professional development will assist me in providing the support I would like to. I also feel more confident in supporting this subject than other subjects.

Motivation to continue with the project

When asked about their motivation to continue with their projects, the project leaders displayed beliefs and orientations to teaching as a profession as well as the intrinsic motivations to work with the project.

Teaching is close to my heart and I wanted to see learners succeed in their learning. I want to assist teachers to implement teaching methods that can facilitate learner-centered ideas so that learners can understand the content

It is the most rewarding work.

Richard, Berkey and Burk (2022) proposed that motivation is influenced by the amount of control and agency the person experiences during the activity. The responses indicate a strong sense of reward in terms of agency. In addition, they sense that project leaders are making a difference, engenders intrinsic motivation in community collaboration (Gibbs & Poisat, 2020).

I wish to see the project engaging teachers from different provinces and areas

The engagement also informs module development and my thinking about teaching and learning

Initially it was about trying to improve mathematics, but now I want to take it more out there. Get engagement from stakeholders, write more, present more. Not only in SA, I am going to an international conference, I am going to take my project to Spain.

I continue with the project because I find it rewarding to solve problems or share ideas. Each time we have contact with the community teachers we learn a great deal and we try to solve problems together. The workshops seem to go so quickly, and I feel energized afterwards.

These responses indicate the affinity the project leader has with the project, learning from the project to improve teaching and the aim of growing the project. Their leadership in valuing and growing the projects is evident while their service orientation is also apparent. The projects appear to be meaningful to the project leader since they cite both innate motivation from the project and how the project is beneficial for teaching and research. The motivations cited focus on reciprocity, boundary crossing and identified community needs (Beaulieu et al., 2018). The institution, by creating enabling space for engaged scholarship projects, also promotes motivation in community engagement (Richard, Berkey and Burk (2022)

Broader conceptions around scholarship

The project leaders explained the broader and more holistic conceptions around engaged scholarship reflecting an approach to scholarship and knowledge that reveals their integrated understanding of engaged scholarship. One project leader included the reciprocity of knowledge in the project, showing that she validated the knowledge of the community outside the academe (Janke, Quan, Jenkins & Saltmarsh, 2022).

Scholarship is learning. It means the project aims for our colleagues to learn with the teachers. Knowledge is interrogated, developed and created together. It is an inclusive learning process with the aim to improve education.

The participant appears to set out her concept of engaged scholarship on *purpose and process* and not *activity and place* in shifting terms distinguished by Saltmarsh and Hartley (2011). Furthermore, she focuses on relational knowing and transformative learning (Davis, Kliewer & Nicolaidis, 2017).

Another participant considered the broader impact of the project and the scholarly writing that would emanate from the project.

Engaged scholarship it so much bigger than just working with the community. You are engaging other stakeholders, you are engaging the academia. You are going to be writing, it is not just helping a community. Although I am helping this community, it will help other teachers too if they find out more about what I am doing. It involves engagement and collaboration.

However, her comments appear to be focusing on collaborative betterment and not collaborative empowerment (Himmelman, 2001). She may conceptualise engaged scholarship as a holding environment (Petriglieri, Ashford, & Wrzesniewski, 2019) where she has been able to make sense of her engaged scholarship experiences. Her statement highlights reciprocity in her orientation towards engaged scholarship.

One participant felt that engaged scholarship was more reflective and scholarly than community engagement, highlighting Saltmarsh and Harley's (2011) move away from activity and place to purposes and processes. She also focused on the knowledge gained through the project involvement and not only giving knowledge to the community.

I think scholarship is about integrating the practical knowledge we gain from the project with scholarly practices of knowledge sharing. With scholarship there is a sense that we reflect on our work and the knowledge we have gained, that perhaps we are more responsive to a community problem.

We identify her focus on reciprocity, identified community needs and boundary crossing (Beaulieu et al. 2018) in her statement. She highlights that engaged scholarship crosses boundaries of practical and scholarly knowledge.

CONCLUSION

The aim of this paper was to explore project leader rationales for their engaged scholarship projects. The responses from the participants indicate a close affinity to their projects based on their personal congruence to the context and/or the school subject. This congruence allows for the project leaders to elicit problems that are experienced in this community while also acknowledging their responsibility for engaging with communities. Although none of the project leaders indicated it, being teachers in the same community may have assisted them in gaining trust of the community.

Motivation to continue with the project spanned three areas – serving the community in solving problems, improving their own teaching and engaging more fully in the project by involving others and producing scholarly work from the engagement. In many ways these responses echo Boyer's (1996) model of discovery, integration and sharing that underpins engaged scholarship. Notable is the intrinsic motivation evident in their responses.

When asked to reflect on the broader concepts of "engaged scholarship" the project leaders expressed a deeper understanding of learning and co-creating of knowledge that was imperative to this type of engagement. They saw their work as having more far reaching consequences than working with a single community in keeping with what Barnett (2011) called a university's mission of care.

We acknowledge the project leaders' significant role in working towards SDG 4 since they work with teachers who in turn will impact learners' experiences in the classroom. We recommend that further research be carried out on the multi-tiered approach to rationales that project leaders have in terms of including teacher and students' views and perceptions of the projects.

REFERENCES

- Boyer, E. L. (1996). The scholarship of engagement. *Bulletin of the American Academy of Arts and Sciences*, 49(7), 18-33. <https://www.jstor.org/stable/3824459>
- Barnett, R. (2011). *Being a university*. New York, NY: Routledge
- Beaulieu, M., Breton, M., & Brousselle, A. (2018). Conceptualizing 20 years of engaged scholarship: A scoping review. *PLoS ONE*, 13(2), 1–17. <https://doi.org/10.1371/journal.pone.0193201>
- Bhagwan, P. R. (2017). Towards a conceptual understanding of community engagement in higher education in South Africa. *Perspectives in Education*, 35(1), 171–185. <https://doi.org/10.18820/2519593x/pie.v35i1.13>
- Bhagwan, P.R. (2020). Towards the institutionalisation of community engagement in higher education. *Perspectives in Education*, 32(2), 48-55.55. <http://dx.doi.org/10.18820/2519593X/pie.v38.i2.03>
- Burawoy, M. (2010). Public sociology in the age of Obama. In H.E. Fitzgerald; C. Burack; S.D Seifer (Ed.), *Handbook of engaged scholarship: Contemporary landscapes, future directions, Vol 2. Community-campus partnerships* (pp. 149–160). East Lansing: Michigan State University Press.
- Cohen, L., Manion, L., & Morrison, K. (2017). Research methods in education. In *Research Methods in Education* (8th ed.). <https://doi.org/10.4324/9781315456539>
- Davis, Katherine & Kliewer, B.W. & Nicolaides, Alike. (2017). Power and reciprocity in partnerships: Deliberative civic engagement and transformative learning in community-engaged scholarship. *Journal of Higher Education Outreach and Engagement*, 21(1), 30-54. <https://openjournals.libs.uga.edu/jheoe/article/view/1316>
- Douglas, S. (2012). Advancing the scholarship of engagement: An institutional perspective. *South African Review of Sociology*, 43(2), 27–39. <https://doi.org/10.1080/21528586.2012.694241>
- Dawwas, E., & Daragmeh, A. (2021). A three-stage model for reducing collaboration risks in the community-based learning in Palestine. *The International Journal of Adult, Community and Professional Learning*. (28)1, 29-40. <https://doi.org/10.18848/2328-6318/CGP/v28i01/29-40>
- Franz, N. (2009). A holistic model of engaged scholarship: Telling the story across higher education’s missions. *Journal of Higher Education Outreach and Engagement*, 13(4), 197–216. <https://openjournals.libs.uga.edu/jheoe/article/view/606/606>
- Gibbs, M. D., & Poisat, P. (2020). A framework of key enabling drivers for innovation: perceptions of community engagement scholarship of science fairs. *South African Journal of Higher Education*, 34(1), 80-98. <https://doi.org/10.20853/34-1-3205>
- Holland, D., Powell, D.E., Eng, E. & Drew, G. (2010). Models of engaged scholarship: An interdisciplinary discussion. *Collaborative Anthropologies*, 3(1), 1–36. <https://doi.org/10.1353/cla.2010.0011>
- Himmelman, A. T. (2001). On coalitions and the transformation of power relations: Collaborative betterment and collaborative empowerment. *American Journal of Community Psychology*, 29(2), 277–284. <https://doi.org/10.1023/a:1010334831330>
- Janke, E., Jenkins, I., Quan, M., & Saltmarsh, J. (2022, May 9). Persistence and proliferation: Integrating community-engaged scholarship into 59 departments, 7 units, and 1 university academic promotion and tenure policies. <https://doi.org/10.31219/osf.io/2rdh>
- Koekkoek, A., Ham, M. Van, & Kleinhans, R. (2021). Unraveling university–community engagement: A literature review. *Journal of Higher Education Outreach and Engagement*, 25(1), 3–24. <https://openjournals.libs.uga.edu/jheoe/article/view/1586>
- Little, B. R. (1983). Personal projects: A rationale and method for investigation. *Environment and Behaviour*, 15 (3): 273-309. <https://doi.org/10.1177%2F0013916583153002>
- Machimana EG, Sefotho MM., & Ebersöhn L. (2018). What makes or breaks higher education community engagement in the South African rural school context: A multiple-partner perspective. *Education, Citizenship and Social Justice*. 13(2), 177-196. <https://doi.org/10.1177/1746197917731353>
- Mbah, M. (2019). Can local knowledge make the difference? Rethinking universities' community engagement and prospect for sustainable community development. *The Journal of Environmental Education*, 50(1), 11-22. <https://doi.org/10.1080/00958964.2018.1462136>
- Nkhoma, N. M. (2020). Faculty members’ conceptualization of community-engaged scholarship: Applying Michael Burawoy’s framework. *Journal of Higher Education Outreach and Engagement*, 24(1), 73–96. <https://openjournals.libs.uga.edu/jheoe/article/view/1599>
- Olowu, D. 2012. University-community engagement in South Africa: Dilemmas in benchmarking. *South African Review of Sociology*, 43(2), 89–103. <https://doi.org/10.1080/21528586.2012.694252>.
- Petersen, I. haam, & Kruss, G. (2021). Universities as change agents in resource-poor local settings: An empirically grounded typology of engagement models. *Technological Forecasting and Social Change*, 167. <https://doi.org/10.1016/j.techfore.2021.120693>

- Petriglieri, G., Ashford, S. J., & Wrzesniewski, A. (2019). Agony and ecstasy in the gig economy: Cultivating holding environments for precarious and personalized work identities. *Administrative Science Quarterly*, 64(1), 124–170. <https://doi.org/10.1177/0001839218759646>
- Richard, F. D., Berkey, B., & Burk, H. M. (2022). Motivation and orientation: Faculty perspectives on development and persistence in service learning and community engagement. *Journal of Community Engagement and Higher Education*, 14(1), 12-23. <https://discovery.indstate.edu/jcehe/index.php/joce/article/view/680>
- Saltmarsh, J., & Hartley, M. (Eds.). (2011). "To serve a larger purpose": Engagement for democracy and the transformation of higher education. Philadelphia, PA: Temple University Press



English for tour guide program to improve English Skills of tour guides in Trenggalek’s Tourist Villages

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ARTICLE INFO	ABSTRACT
<p>Article history Received: 2022-09-07 Revised: 2022-10-14 Accepted: 2022-10-24 Published: 2022-12-14</p> <p>Keywords English for tour guide Tourist villages Trenggalek</p>	<p>Trenggalek is one of the potential regencies in East Java, with many beautiful tourist destinations. Realizing this fact, the government of Trenggalek has set a target to develop 100 tourist villages in Trenggalek by 2024. Tourist villages are now becoming one of the main attractions in Trenggalek. To make the villages more known and visited by tourists, some support is needed, one of which is the involvement of tour guides skilled in using English. Therefore, the community service team from UPN “Veteran” Jawa Timur under the scheme PIKAT (Pemanfaatan Ipteks Bagi Masyarakat = Utilization of Science and Technology for Society) held an English for Tour Guide program in Pandean Village, Dongko Sub-district, Trenggalek. Supported by the Department of Tourism and Culture of Trenggalek. This program has been held since July and is still running. The service program consists of three main activities, namely: (1) preparation, debriefing, and pre-departure; (2) implementation; and (3) evaluation. The tour guides joined and attended the program enthusiastically. They were actively involved in the discussions, sharing sessions, and role-plays. It is expected that this program can be impactful for tour guides in tourist villages in Trenggalek and can be extended in a broader scope in the future. In addition, more tourists are interested in visiting Trenggalek, from East Java and around Indonesia.</p>
<p>Kata kunci Bahasa Inggris untuk pemandu wisata Desa wisata Trenggalek</p> <div data-bbox="268 1709 391 1832"></div> <div data-bbox="172 1843 464 1910"></div>	<p>Bahasa Inggris untuk program pemandu wisata untuk meningkatkan Keterampilan Bahasa Inggris pemandu wisata di Desa Wisata Trenggalek. Trenggalek merupakan salah satu kabupaten potensial di Jawa Timur yang memiliki banyak destinasi wisata yang indah. Menyadari fakta tersebut, Pemerintah Kabupaten Trenggalek telah menetapkan target untuk mengembangkan 100 desa wisata di Trenggalek pada tahun 2024. Desa wisata kini menjadi salah satu daya tarik utama di Trenggalek. Untuk membuat desa lebih dikenal dan dikunjungi wisatawan, diperlukan beberapa dukungan, salah satunya adalah keterlibatan pemandu wisata yang terampil menggunakan bahasa Inggris. Oleh karena itu, tim pengabdian masyarakat dari UPN “Veteran” Jawa Timur dengan skema PIKAT (Pemanfaatan Ipteks Bagi Masyarakat) menggelar program English for Tour Guide di Desa Pandean, Kecamatan Dongko, Trenggalek. Didukung oleh Dinas Pariwisata dan Kebudayaan Trenggalek. Program ini telah diadakan sejak bulan Juli dan masih berjalan. Program pengabdian terdiri dari tiga kegiatan utama, yaitu: (1) persiapan, pembekalan, dan pra pemberangkatan; (2) implementasi; dan (3) evaluasi. Pemandu wisata bergabung dan mengikuti acara dengan antusias. Mereka terlibat aktif dalam diskusi, sharing session, dan role-play. Diharapkan program ini dapat berdampak bagi pemandu wisata di desa wisata di Trenggalek dan dapat diperluas dalam lingkup yang lebih luas di masa mendatang. Selain itu, lebih banyak wisatawan yang tertarik untuk berkunjung ke Trenggalek, baik dari Jawa Timur maupun seluruh Indonesia.</p> <p>Copyright © 2022, Wahyuningtyas et al This is an open access article under the CC-BY-SA license</p> <div data-bbox="1134 1832 1315 1899"></div>

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INTRODUCTION

East Java is one of Indonesia's many provinces with vibrant tourism potential (Kristiana et al., 2020; Yunus & Indrasari, 2017), one of which is tourist villages (Aly et al., 2019; Mujanah et al., 2015; Topowijono & Supriono, 2018). East Java has more than a hundred tourism villages, some of which are located in Trenggalek Regency, such as Sawahan (Parmawati et al., 2018) and Karangan Village (Rosyafah et al., 2021). Besides being famous for the beauty of marine tourism (Parmawati et al., 2017; Sarinastiti & Wicaksono, 2020) and its mountains (Zulia & Yanuwadi, 2015), this city, located in the southern part of East Java, also has the potential for village tourism. This tourist village development project was developed and managed by the Trenggalek Regency government very seriously. The Trenggalek Regency Government also developed some targeted tourist villages, such as Duren Sari Tourist Village, Pandean Tourist Village, Masaran Tourist Village, Sumberbening Tourist Village, and some other tourist villages. To make Trenggalek's tourist villages more famous and known by tourists from around Trenggalek and other regions in East Java or even Indonesia, Trenggalek needs some supporting factors, one of which is tour guides.

Tour guides play an important role in the tourism sector. In addition to serving at the tourist attractions information center, tour guides also usually accompany tourists around tourist attractions if necessary. In this regard, tour guides must master English as a media of communication (Zahedpisheh et al., 2017). This will enable foreign tourists who speak different languages to understand what the tour guides are explaining. Further, a tour guide has several roles, such as communicative/interactive, integrative, lingua franca, relation-fostering, economic-business, and functional (Damayanti, 2019). However, not all tour guides were all capable of using English well. A study in Aceh showed that most tour guides in that object faced various problems when speaking English in a popular tourist destination like Aceh Tsunami Museum (Gani & Damayanti, 2018). Research in Buleleng also informs that many tour guides still have low speaking skills (Ratminingsih et al., 2018). Therefore, the facilitators, teachers, and tutors must encourage the guides to practice and use their English more confidently.

A similar situation happens in Trenggalek, where the tour guides who work in the tourist area of Trenggalek Regency have not received adequate training on guiding tourism, especially foreign tourists. The number of foreign tourists is also still relatively low in Trenggalek, even though Trenggalek is an area that has extraordinary tourism potential. To the south, there are beaches and mountains. Meanwhile, the northern Trenggalek area keeps the natural beauty of plantations. The city forest is also well-developed by the Trenggalek Regency government. However, this potential has not been accompanied by the presence of tour guides with sufficient numbers and quality. Even though the role of tour guides is crucial to facilitate tourists from within and outside the country. One of the obstacles or problems that occur is due to the limited ability to speak English of the tour guides scattered in various regions in Trenggalek Regency, which even until now have not recorded the exact number. One of the causes is inadequate training and programs to improve English language skills. With the existence of a tourist village built and developed by the Trenggalek Regency government, the need for English language skills by tour guides is inevitably essential because the tourist village also requires the role of tour guides in promoting it. This then became the background for implementing the English for Tour Guides program. This problem is closely related to point 8 of SDGs, where decent work and economic growth are boosted. This community service program encouraged the tour guides in tourist villages in Trenggalek to master English as part of the marketing of tourist villages in Trenggalek. As the guides' English skill improves, the number of tourists will also increase, boosting the income they get from the tourist villages. This is also in line with the development of 100 tourist villages in Trenggalek, also called Sadewa (Seratus Desa Wisata).

Regarding these issues, community service programs from universities need to be carried out. A community service program conducted in Sukabumi found that some tour guides were not confident in using English (Riyanto et al., 2018). After being encouraged, they tried to use English as part of their skill as a tour guides. Community service in the tour guide community in Tasikmalaya has also trained tour guides to speak English communicatively (Riyanto et al., 2018). In Situbondo Regency, English tour guide training for prospective tour guides is carried out through the Pendidikan Kecakapan Kerja (Work Skills Education) program (Wardhani, 2022). Meanwhile, in Central Lombok, the same training, namely English language training for tour guides, involved Forum Muda Berkarya (Creative Youth Forum) (Kamarudin et al., 2021). Furthermore, in Pekanbaru, English Tour Guide training is aimed at the Himpunan Pariwisata Indonesia (Indonesian Tourism Association) (Syaifullah, 2021). Several similar community service programs were also carried out in several other locations, such as in Bandung (Oktavia et al., 2019) dan Bali (Sujaya, 2021). From these various programs, training activities involving tour guides in tourist villages are rare, especially those held in Trenggalek. Therefore, the purpose of this community service program is to improve the tour guide's English skills in Pandean Village, Dongko Sub-district, Trenggalek. This program will encourage the achievement of Sustainable Development Goals (SDGs) in the creative economy, especially in tourism.

METHOD

Regarding the steps of preparation, the community service team members divide them into three, step 1 (preparation, debriefing, and pre-departure), step 2 (implementation), and step 3 (evaluation).

Preparation, Debriefing, and Pre-Departure

At this stage, the PIKAT (Pemanfaatan Ipteks Bagi Masyarakat = Utilization of Science and Technology for Society) community service team consisting of two English lecturers and two students majoring in Tourism divided tasks and roles. The lecturers involved are English lecturers, and one of the interests of the lecturers is English for Specific Purposes, which is the parent of the English for Tourism field of study. Meanwhile, the two students involved also took the study of Tourism Studies in which these students already knew the ins and outs of the duties of a tour guide. At this stage, the team prepares a planning field survey. Data collection on the number and distribution of tour guides is also carried out at this stage. Mapping the potential of Trenggalek Regency tourism villages was also started, so the community service team found an initial picture of superior and strategic tourism villages in Trenggalek Regency. Coordination with related parties or agencies, namely the Tourism and Culture Office of Trenggalek Regency, is also carried out at this stage. The coordination was held in June 2022 via Zoom, attended by the Head of Tourism Destination Division of the Department of Tourism and Culture, Trenggalek, tour guides in Trenggalek, and the teams of the English for Tour Guide program in Trenggalek. In addition, the team held initial socialization with several tour guides and related agency representatives to find suggestions and inputs for the smoothness and effectiveness of this English for Tourism program. At this stage, data collection on the number of tour guides who are able and interested in participating in this program is also carried out as the materials that are expected to be taught during the training program. It is hoped that at this stage, the community service team will have received an initial overview and accurate input from the tour guides and related agencies so that the implementation of the next stage can run smoothly.

Implementation

The next stage is implementing the English for Tourism program, which is intended for tour guides in tourist villages in Trenggalek Regency. Assisted and coordinated by the Tourism and Culture Office of Trenggalek Regency, the tour guides will later receive English for Tourism training from two lecturers who act as tutors, consisting of one chairperson and one member of the community service team for approximately two months, starting in June until early August 2022. The training will be conducted both offline and online. In addition, the English for Tourism program participants for this tour guide will also be provided with an English for Tourism module, which contains a guide to be a good and correct tour guide. The total number of meetings is estimated at eight meetings, where participants in this program will receive material weekly.

The duration of each meeting is allocated about 1.5 hours following discussion, question, and answer sessions. This program places more emphasis on practice than theory, and participants and tutors can directly discuss the material and practice provided. The students involved will also act as tutor representatives on duty to help prepare materials, become activity contact persons, and become tutors' backups if, at any time, the tutor on duty cannot attend.

Evaluation

At the end of this program, an evaluation will be held, in which the team, participants, and related agencies will discuss and review the program's implementation, whether it has been running quite effectively, and what improvements or improvements need to be made. There were a WhatsApp Group for the participants and the community service team members. There was at least one team in addition, and it is also hoped that the participants and related agencies will provide feedback for the development of similar programs in the future so that similar programs can penetrate other strategic areas and more people can benefit from their implementation. Monitoring during and after the program will be carried out by the community service team and related agencies, so it is hoped that this program will run smoothly and be helpful for the parties involved and the wider community.

RESULTS AND DISCUSSION

The PIKAT community service team held a community service program entitled "English for Tourism Program for Empowering Tour Guides in Trenggalek Regency's Tourism Villages" (Program *English for Tourism* Untuk Pemberdayaan *Tour Guide* di Desa Wisata Kabupaten Trenggalek) This program was initiated by the PIKAT scheme community service team led by a lecturer at the Faculty of Law at UPN Veterans East Java, Dwi Wahyuningtyas, S.Pd., M.A. The service members consist of 3 core members: Ria Arista Asih, Ph.D. (Director of American Corner UMM), Alyaa' Chiquita Fairuzara A. R. and Fredik Yunior Heuvelman (student of UPN Veterans East Java), and one additional member, namely Roro Millatu Al- Ghaniy, M.Pd. (English instructor of UMM language institute).

The opening ceremony was held offline on Thursday, July 7, 2022, at Watu Kandang Park, Pandean Village, Dongko District, Trenggalek Regency. This village is one of the 50 best tourist villages in Indonesia. Among several other tourist villages in Trenggalek are Masaran, Karangturi, Ngulungwetan, Munjungan, Nglebeng, Sumberbening, Wonoanti,

Gandusari, Tegaren, Gading, Wonocoyo Pogalan, Pakis, Depok, and Suruh. The participants are local Trenggalek tour guides who also come from these villages. In addition, the Tourism and Culture Office of Trenggalek Regency, the ranks of the Tegaren Village Pokdarwis, the tour guides of tourist villages in Trenggalek Regency, and Kakang Mbakyu, Trenggalek Regency, also support this program. As shown in figure 1., the event opened with remarks from the head of the community service team. It continued with remarks and an opening from the Head of the Tourism Destinations Division of the Trenggalek Disparbud, Tony Widiyanto, S.Hut., MT., M.Sc. In their remarks, both the head of the community service and the Head of the Tourism Destinations Division expressed their hope that this program can run sustainably, considering how vital it is to support tour guides' English language skills. The event then continued with the symbolic handing over of plaques and English for Tour Guide modules from the head of the community service team to the Head of Tourism Destinations. In addition, participants received souvenirs from the UMM American Corner and a particular English learning module for the tour guide, which was prepared by the service team.

Around 37 tour guides from all tourist villages in Trenggalek and some tourism ambassadors (Kakang-Mbakyu) from Trenggalek attended the events. After the opening, the participants were divided into several groups, led by a facilitator in every group, as shown in picture 2. In this phase, the students were also involved as facilitators. It is expected that they can share their experiences in improving their English skill with the participants. Other than that, the students involved can also know the actual conditions and problems in the tourist villages. Figure 3 shows that the participants well received the program. The participants followed every discussion session well. Although their English skills vary, some still cannot pronounce English well and eagerly participate in every game and discussion. The success of this program was also supported by the tourist village group (Pokdarwis) of Pandean Village, who helped provide the place and venue at Taman Watu Kandang, one of the top tourist destinations in Pandean Village that became one of the best 50 tourist villages in Indonesia. This program was held at Taman Watu Kandang so the participants could immediately practice their English skills in the natural context, place, and condition.

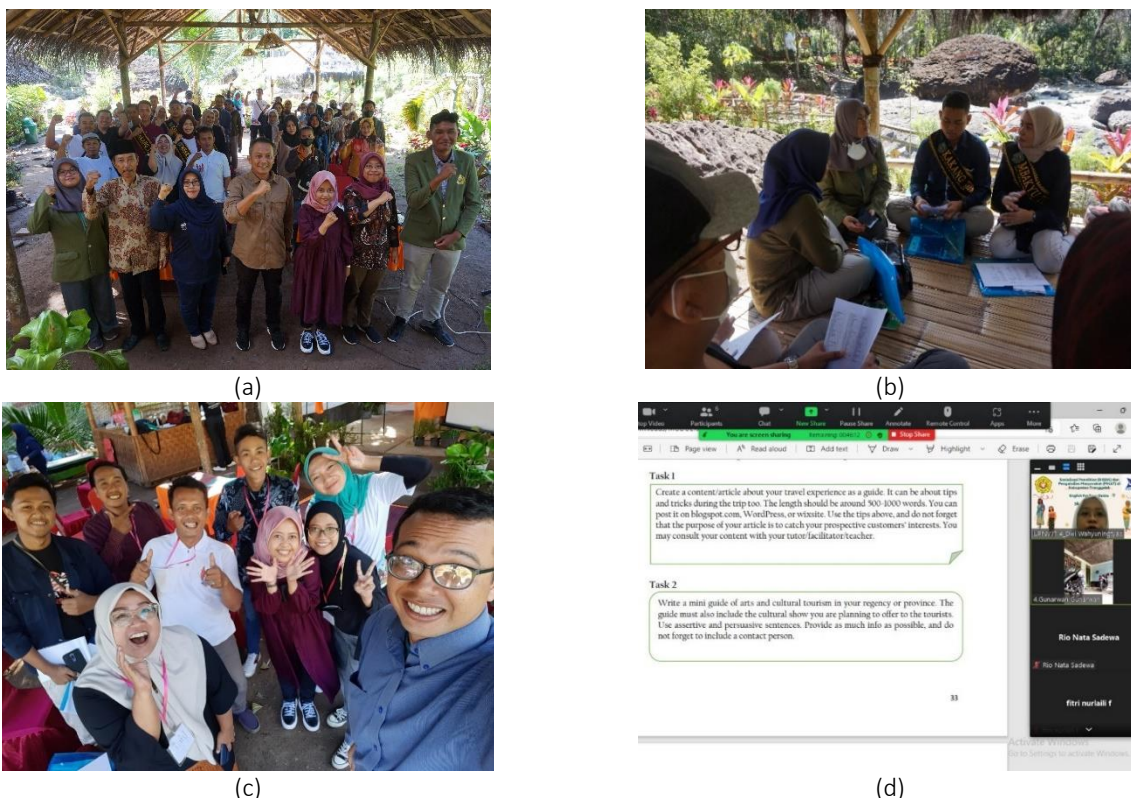


Figure 1. Documentation of community service activities: (a) the opening of the English for Guide program in July 2022; (b) the activities in English for the Tour Guide program; (c) the enthusiasm of participants of the English for Tour Guide program; and (d) the online session of the English for Tour Guide Program

The program continued with the online session, which was held on August 3, 2022. During offline activities, participants were divided into four study groups accompanied by Dwi, Ria, Alyaa' and Fredik. The four groups were joined in different WhatsApp groups where discussion of modules and preparation for learning had begun through conversation. This is an embodiment of language learning with synchronous learning because participants can learn independently according to their time and abilities – supported by interactive sessions with mentors to discuss the materials in the modules that have been distributed.

However, some obstacles encountered by the team of the community service program; busy schedules, the stability of the Wi-Fi network, and the availability of the gadgets are some of them. During the online session, the number of participants decreased by almost half. They were more interested in offline sessions; they could meet the facilitators directly. In addition, they joined the session while doing another activity, which made the result not optimal. Another thing that happened during online sessions easily distracted them and made it difficult to focus. Other than that, the internet or Wi-Fi network quality was not too good in Pandean Village. Most participants also used mobile phones, which made them unable to see and read the instructions. The facilitators were also challenged to keep monitoring their progress in improving their English skills. They also had busy schedules, and so were the tour guides, whose primary jobs were teachers, farmers, and students. This became an evaluation for the facilitators, the community service team members, and the tour guides as the participants.

Before this program was held, the efforts to develop tourism in Trenggalek have also been apparent in some programs. Prambudi and Retnowati (2014) created a virtual tour guide application that enables tour guides in Trenggalek to get information about tourism in Trenggalek besides using manual guidebooks. Besides developing applications for tour guides in Trenggalek, there is a development of English for tour guide books (Prasetyo & Rukmini, 2019). They both wrote a local-based English for a tour guide book for students in Trenggalek. The development of tour guides in Trenggalek is influenced by some factors, one of which is the involvement of Pokdarwis in tourism villages in Trenggalek. Participation from the community is highly needed (Rahayu et al., 2019). Aside from the universities, the government of Trenggalek has also conducted a certification for tour guides in 2018. Through the program, the government expected to empower the tour guides in Trenggalek with the skills required to become tour guides. From the program, it can also be concluded that the mapping of English skills of tour guides is needed, and some studies have been conducted regarding this. In addition, Wahyuningtyas et al. (2022) analyzed the English-speaking and writing levels of tour guides in tourist villages in Trenggalek. The study revealed that tour guides' skills were divided into two levels; basic and intermediate. However, the number of tour guides who guided tourists using English was still limited. With the result of the program, it can be inferred that tourist villages in Trenggalek strongly need English for tour guides. Moreover, by mapping their English speaking and writing skills, practitioners, teachers, facilitators, and tutors can prepare the English materials suitable for their English for tour guide training.

Communication skills are important skills that must be mastered by tour guides. In order to optimize the tourism sector on an international scale, English communication skills are also urgently mastered by today's tour guides. With an English language training program for tour guides in Trenggalek, the achievement of the SDGs through the tourism sector will be even more optimal. The development of the tourism sector will help both directly and indirectly in achieving the SDGs (Dube, 2020; Sharpley, 2020; Spenceley & Rylance, 2019). In this regard, the tourism sector in Indonesia is an economic sector that absorbs millions of workers (Gendhis Saras Zandy, 2019) and has a significant effect on improving the community's economy (Antara & Sumarniasih, 2017; Haryana, 2020). If the tour guide is skilled in English, the opportunities for tourists from abroad to visit Trenggalek will be even greater. Tourists will also be easily directed to the economic centers of the Trenggalek community.

CONCLUSION

As one of the government's main focuses now is to develop tourism, English for Tourism with a focus on English for Tour Guide was strongly needed. Therefore, the English for Tourism with the focus English for Tour Guide program was successfully held in Pandean Tourist Village, Dongko Sub-district, Trenggalek, East Java. Divided into two sessions, offline and online, this program was attended by tour guides in Trenggalek, the ambassadors of Trenggalek tourism (Kakang-Mbakyu Trenggalek), and the Department of Tourism and Culture, Trenggalek. This program also offers some materials for the participants, including how to be a tour guide, culinary tourism, adventure tourism, etc. In addition, by considering some factors such as the English speaking and writing level of the tour guides and the marketing target of the tour guides in Trenggalek, the practitioners, teachers, tutors, and all parties involved in the program can detect and prepare the materials suitable for the improvement of tour guides in Trenggalek. Therefore, with the government, practitioners, educators, tour guides, and some other parties, the program English for tour guides can be developed in Trenggalek and other tourist villages.

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REFERENCES

- Aly, M. N., Yuliawan, R., Noviyanti, U. D. E., Firdaus, A. A., & Prasetyo, A. (2019). Public policy and rural tourism development in East Java Province, Indonesia. *African Journal of Hospitality, Tourism and Leisure*, 2019(Special Issue), 1–8.
https://www.researchgate.net/publication/342512795_Public_policy_and_rural_tourism_development_in_East_Java_Province_Indonesia
- Antara, M., & Sumarniasih, M. S. (2017). Role of tourism in economy of Bali and Indonesia. *Journal of Tourism and Hospitality Management*, 5(2), 34–44. <https://doi.org/10.15640/jthm.v5n2a4>
- Damayanti, L. S. (2019). Peranan keterampilan Berbahasa Inggris dalam industri pariwisata. *Journey: Journal of Tourismpreneurship, Culinary, Hospitality, Convention and Event Management*, 2(1), 71–82.
<https://doi.org/10.46837/journey.v2i1.42>
- Dube, K. (2020). Tourism and sustainable development goals in the African context. *International Journal of Economics and Finance Studies*, 12(1), 88–102. <https://doi.org/10.34109/ijefs.202012106>
- Gani, S. A., & Damayanti, C. I. (2018). The ability to speak English of the local tour guides for promoting tourism at the Aceh Tsunami Museum. *Studies in English Language and Education*, 5(2), 269–278.
<https://doi.org/10.24815/siele.v5i2.11178>
- Gendhis Saras Zandy, L. R. (2019). The roles of the tourism sector in the labor absorption in the trade, restaurant, and accommodation sectors in Bali Province in 2013–2017. *Journal of Applied Economics in Developing Countries*, 4(1), 30–38. <https://jurnal.uns.ac.id/jaecd/article/viewFile/42560/27438>
- Haryana, A. (2020). Economic and welfare impacts of Indonesia's tourism sector. *Jurnal Perencanaan Pembangunan: The Indonesian Journal of Development Planning*, 4(3), 300–311. <https://doi.org/10.36574/jpp.v4i3.127>
- Kamarudin, K., Tawali, T., & Imran, F. (2021). Training Bahasa Inggris dasar peramu wisata untuk Forum Muda Berkarya (FMB) Desa Wisata Hijau Bilebante Kabupaten Lombok Tengah. *Jurnal Pengabdian UNDIKMA*, 2(1), 91–97.
<https://doi.org/10.33394/jpu.v2i1.3706>
- Kristiana, Y., Pramono, R., Nathalia, T. C., & Goeltom, V. A. H. (2020). Tourism and original local government revenue in Indonesia Tourism Provinces: The Java Island experience. *Systematic Reviews in Pharmacy*, 11(9), 745–750.
<https://doi.org/10.31838/srp.2020.9.105>
- Mujanah, S., Ratnawati, T., & Andayani, S. (2015). The strategy of tourism village development in the hinterland Mount Bromo, East Java. *Journal of Economics, Business & Accountancy Ventura*, 18(1), 81.
<https://doi.org/10.14414/jebav.v18i1.385>
- Oktavia, A., Poerwantika, T. R., Kunkunrat, K., & Afriantari, R. (2019). Pengembangan kemampuan tour guide Desa Warnasari Kecamatan Pengalengan Kabupaten Bandung. *Kaibon Abhinaya: Jurnal Pengabdian Masyarakat*, 2(1), 8–14. <https://doi.org/10.30656/ka.v2i1.1686>
- Parmawati, R., Leksono, A. S., Yanuwadi, B., & Kurnianto, A. S. (2017). Exploration of marine tourism in Watulimo, Trenggalek Regency: Challenges, potentials, and development strategies. *Journal of Indonesian Tourism and Development Studies*, 5(3), 175–184. <https://doi.org/10.21776/ub.jitode.2017.005.03.06>
- Parmawati, R., Saktiawan, Y., Wibowo, F. A. A., & Kurnianto, A. S. (2018). Analysis of village tourism development in Sawahan, Trenggalek Regency, Indonesia: A sustainable livelihood approach. *E-Journal of Tourism*, 5(1), 46–53.
<https://doi.org/10.24922/eot.v5i1.35181>
- Prambudi, A. R., & Retnowati, N. D. (2014). Pembuatan virtual tour guide Kabupaten Trenggalek menggunakan metode tracing map. *Compiler*, 3(2), 41–48. <https://doi.org/10.28989/compiler.v3i2.76>
- Prasetyo, W., & Rukmini, B. S. (2019). Pengembangan buku tour guide berbasis kearifan lokal untuk mata kuliah English for hotel and tourism di STKIP PGRI Trenggalek. *Karya Ilmiah Dosen*, 5(2), 209–229.
<http://journal.stkipggritreggalek.ac.id/index.php/kid/article/view/156%0Ahttps://journal.stkipggritreggalek.ac.id/index.php/kid/article/download/156/103>
- Rahayu, S. P. P., Anantanyu, S., & Mulyanto, M. (2019). Partisipasi masyarakat kelompok sadar wisata dalam pembangunan kepariwisataan di Kabupaten Trenggalek. *Prosiding Industrial Research Workshop and National Seminar*, 10(1), 1348–1356. <https://doi.org/10.35313/irwns.v10i1.1421>
- Ratminingsih, N. M., Suardana, M., & Martin, A. A. N. Y. (2018). English for tour guide: A need analysis of a contextual-based language teaching. *SHS Web of Conferences*, 42, 1–6. <https://doi.org/10.1051/shsconf/20184200012>
- Riyanto, S., Krisnawati, E., & Tiswaya, W. (2018). Penyuluhan memandu turis dengan Bahasa Inggris kepada Karang Taruna di Geopark Ciletuh Kabupaten Sukabumi. *Jurnal Pengabdian Kepada Masyarakat*, 2(9), 746–750.
<https://doi.org/10.36423/jec.v2i1.401>
- Rosyafah, S., Alim, S., & Rianto, B. (2021). On-line based tourist village development in the village of Karang, Trenggalek District. *Academia.Edu*, 16(1), 1–5. <https://doi.org/10.9790/2834-1601010105>
- Sarinastiti, E. N., & Wicaksono, M. S. (2020). Mapping coastal ecotourism potential in Panggul District, Trenggalek, East Java. *IOP Conference Series: Earth and Environmental Science*, 530(1). <https://doi.org/10.1088/1755-1315/530/1/012024>

- Sharpley, R. (2020). Tourism, sustainable development and the theoretical divide: 20 years on. *Journal of Sustainable Tourism*, 28(11), 1932–1946. <https://doi.org/10.1080/09669582.2020.1779732>
- Spenceley, A., & Rylance, A. (2019). The contribution of tourism to achieving the United Nations Sustainable Development Goals. In *A Research Agenda for Sustainable Tourism* (pp. 107–125). Edward Elgar Publishing. <https://doi.org/10.4337/9781788117104.00015>
- Sujaya, N. (2021). Pelatihan Bahasa Inggris untuk tour guide di Kelurahan Semarapura Kaja dalam rangka pengembangan pariwisata terintegrasi. *Linguistic Community Services Journal*, 2(1), 30–37. <https://doi.org/10.22225/licosjournal.v2i1.3134>
- Syaifullah, S. (2021). Pelatihan english for tourist guide untuk Himpunan Pramuwisata Indonesia (HPI) Kota Pekanbaru. *Dinamisia : Jurnal Pengabdian Kepada Masyarakat*, 5(4), 953–957. <https://doi.org/10.31849/dinamisia.v5i4.5368>
- Topowijono, T., & Supriono, S. (2018). Analysis of sapta pesona (seven enchantments) implementation in tourism village: study at Pujon Kidul tourism village of Malang Regency, Indonesia. *Proceedings of the Voronezh State University of Engineering Technologies*, 80(2), 458–463. <https://doi.org/10.20914/2310-1202-2018-2-458-463>
- Wahyuningtyas, D., Sumarno, W. K., Asih, R. A., Endriana, F., Windiarti, K. R., & Mafruudloh, N. (2022). An analysis of the English speaking and writing skill level of tour guides in Trenggalek's tourist villages. *Journey: Journal of English Language and Pedagogy*, 5(2), 293–303. <https://doi.org/10.33503/journey.v5i2.2079>
- Wardhani, D. T. M. (2022). Pelatihan dan pendampingan English for tour guide pada program pendidikan kecakapan kerja 2021 di Kabupaten Situbondo. *Jurnal Abdi Panca Mara*, 2(2), 18–21. <https://doi.org/10.51747/abdipancamara.v2i2.849>
- Yunus, E., & Indrasari, M. (2017). Opportunities and challenges of tourism industry. *International Journal of Economic Research*, 14(7), 277–291. <http://repository.unitomo.ac.id/336/1/1495188757.pdf>
- Zahedpisheh, N., B Abu bakar, Z., & Saffari, N. (2017). English for Tourism and Hospitality Purposes (ETP). *English Language Teaching*, 10(9), 86. <https://doi.org/10.5539/elt.v10n9p86>
- Zulia, Z., & Yanuwadi, B. (2015). The natural and cultural resources for ecotourism development in Trenggalek Regency, East Java. *Journal of Indonesian Tourism and Development Studies*, 3(2), 45–52. <https://doi.org/10.21776/ub.jitode.2015.003.02.02>



“Career festival: My dream job”, career introduction to primary school graders in Malang

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ARTICLE INFO	ABSTRACT
<p>Article history Received: 2022-10-26 Revised: 2022-11-12 Accepted: 2022-12-12 Published: 2022-12-15</p> <p>Keywords Career festival My dream job Primary school</p>	<p><i>SD Negeri 1 Jambesari is one of the elementary schools which has 119 students ranging from grade 1 to grade 6. Based on interviews, observations, and dialogue with teachers at SDN Jambesari 1, several problems were found related to students' lack of information on careers or professions. This activity aims to empower the community through a career introduction program that is carried out at SD Negeri 1 Jambesari. The methods used by the team are preparation, program planning, and program implementation. The implementation of career introduction is carried out through an informative and demonstrative profession by the project team, so that it becomes the result of this program. As a result, students are better able to explain a number of professions that they did not know before. Also, students have real-life experience through observing and demonstrating the tools of each profession. This community service has succeeded in increasing the cognitive aspects of students in recognizing various kinds of careers or professions, so that they can visualize their dream job in the future.</i></p>
<p>Kata kunci Festival karir Pekerjaan impianku Sekolah dasar</p> <div data-bbox="263 1332 375 1444" style="text-align: center;"> </div> <div data-bbox="172 1460 464 1527" style="text-align: center;"> </div>	<p>“Festival karir: Pekerjaan impianku”, pengenalan karir kepada siswa SD Di Malang. SD Negeri 1 Jambesari merupakan salah satu sekolah dasar yang memiliki 119 siswa mulai dari kelas 1 sampai kelas 6. Berdasarkan wawancara, observasi, dan dialog dengan para guru di SDN Jambesari 1, ditemukan beberapa permasalahan yang berkaitan dengan kurangnya informasi siswa dalam mengetahui karir atau profesi. Kegiatan ini bertujuan untuk pemberdayaan masyarakat melalui program pengenalan karir yang dilaksanakan di SD Negeri 1 Jambesari. Metode yang digunakan tim adalah persiapan, perencanaan program, dan pelaksanaan program. Pelaksanaan pengenalan karir dilakukan melalui profesi yang informatif dan demonstratif oleh tim proyek, sehingga menjadi hasil dari program ini. Hasilnya, mahasiswa lebih paham untuk menjelaskan sejumlah profesi yang sebelumnya tidak mereka ketahui. Juga, siswa memiliki pengalaman kehidupan nyata melalui mengamati dan mendemonstrasikan alat dari masing-masing profesi. Pengabdian kepada masyarakat ini berhasil meningkatkan aspek kognitif siswa dalam mengenal berbagai macam karir atau profesi, sehingga mereka dapat memvisualisasikan pekerjaan impian mereka di masa depan.</p> <p style="text-align: right;">Copyright © 2022, Wahyuningtyas et al This is an open access article under the CC-BY-SA license</p> <div data-bbox="1136 1456 1316 1523" style="text-align: right;"> </div>
<p>How to cite: Ingarianti, T. M., Hasanati, N., Istiqomah, I., Elfina, M. L., Djudiah, D., & Shohib, M. (2022). “Career festival: My dream job”, career introduction to primary school graders in Malang <i>Journal of Community Service and Empowerment</i>, 3(3), 156-161. https://doi.org/10.22219/jcse.v3i3.23043</p>	

INTRODUCTION

Jambesari is a village in the Subdistrict of Poncokusumo, Malang Regency-East Java which is known as milk producer village (Nugroho, 2011). This village has destination tour as known as JES or Jambesari Embung Sunset. The village serves a pond or lake completed with facilities such as gazebos and Wi-Fi access (Irfan et al., 2020). In addition, there is education facilities, one of them is SD Negeri 1 Jambesari which consists of 119 students start from grade 1st to 6th. Based on the interview and observation with the teachers, it was found a number of problems that is related to the lack of information about career or profession in students. A number of students know profession in general only and some have less information, so that they only have a plan to work based on what they know after finishing senior high school education.

In Indonesia, career introduction should be started since primary school education. Wijaya (2017) says that since this level, students should be familiar with some careers to reach their future dreams so that they can make a right decision for their future education, explore themselves, and solve problems. A survey conducted by Wijaya (2017) found that there are many students do not know well about careers. Some students in grades 1, 2 and 3 only know a number of work types only, while others only know about name of professions; however, they do not understand about the attribute yet as well as the duty of that profession. As it is highlighted that My Dream Job is a material that is congruent to primary school graders' context, it is also designed in an English thematic lesson textbook (K. Khoiriyah et al., 2022).

Lacking knowledge about careers will have an impact on confidence in making decisions in choosing a career. The theory puts forward by Holland emphasizes that accuracy regarding self-knowledge and career information is needed in making career decisions (Osborn & Zunker, 2015). Good quality of career information obtained by an individual is a crucial factor as a first step in making career decisions. Career information includes relevant education, jobs, and their characteristics, and job opportunities in the community market (Abubakar, 2013).

Primary school graders need a variety of information to understand the career that they will pursue so that they can make plans regarding their life and future. This understanding can be obtained through career information services. Career information service is a service intended to help people of all ages and at any point throughout their lives to make education, training, and employment choices and to manage their careers (Y. M. Khoiriyah & Nursalim, 2011).

The implementation of this program become one of the Sustainable Development Goals (SDGs), which are sustainable development agreements based on human rights and the principle of realizing that no community is left behind. This program has goals with 17 goals that belong to the SDGs. Among them are related to the 4th goal which is about the quality of education and the 8th goal is about decent work and economic growth. Quality education means programs promoting and ensuring inclusive and equitable quality education and promoting lifelong learning opportunities for all. Decent work and economic growth mean the program promotes sustainable, inclusive, and sustainable economic growth, full and productive employment opportunity and decent work for all (Kementerian PPN/ Bappenas, 2017).

Education is the main vehicle for preparing quality human resources (Adam, 2022; Agustini et al., 2021; Arifin et al., 2021; Muhlasin et al., 2022; Muninda et al., 2021; Octaviana et al., 2021; Prasetyo et al., 2022; Rohmania et al., 2022; Sari et al., 2021; Varisa & Fikri, 2022), including in preparing careers according to the wishes and aspirations of children. Activities related to career information services can be carried out in various ways, one of them is through career day activities (Muriyawati & Rohmah, 2016). Career day is held like a festival, in this way, it is expected to attract more students to be involved. Career Festival is an activity held as a means of introducing various types of work to students. At this festival, students will be invited to play an active role in exploring various types of work. Seeing and understanding of careers in primary school graders, especially those in grades 1, 2 and 3 can be actively and enthusiastically involved so that they have better knowledge and understanding of careers and have enough information related to career planning in the future.

When the team conducted an initial assessment as a preparatory stage for activities, the principal and teachers greeted very well and were very open. This means that there is a need for career introduction information to students. Based on the problems above, the team provide a program in the form of career introduction to students at the elementary level of education in Jambesari Poncokusumo Village, Malang as an optimization effort in determining career choices from an early age by students. Therefore, this activity aims to empower the community through a career introduction program that is held at SD Negeri 1 Jambesari.

METHOD

Several stages of community service activities were carried out in the Figure 1.

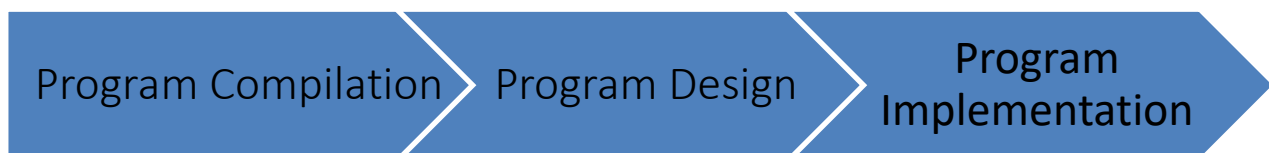


Figure 1. The stages of community service activities

Program Compilation

Preparation for the implementation arranged by the conditions and time of the program. The first thing to do was to observe the target area in order to know the field conditions and human resources at SD Negeri 1 Jambesari. Starting from licensing to the Jambesari village head and to the principal of SDN 1 Jambesari. In addition, the team also observed the interests and potential of human resources in SDN 1 Jambesari.

Program Design

The preparation of the program planning was a follow-up to the results of the field assessment and the preparatory stages that had been carried out previously. Based on the results of the analysis of the assessment of the village apparatus and the school, the program planning made by the team could increase students' knowledge and information about various careers. In addition, it could also improve the standard of living of the local community in the long term. Therefore, it was expected that the programs would receive full support from various parties who had worked together.

Program Implementation

The program held on October 1, 2022 at SD Negeri 1 Jambesari starting at 07.00 – 10.30 am WIB. The implementation of the program was carried out by a team of lecturers and students who were supported by SD Negeri 1 Jambesari teachers as partners. There were two activities, the first activity was for grades 1, 2 and 3 introduced various kinds of professional videos and coloring activity in the library hall, while for grades 4, 5 and 6 introduced all kinds of professions with practice through 7 professions by moving post activity.

RESULTS AND DISCUSSION

The "Career Festival: My Dream Job" activity was held on October 1, 2022 at SD Negeri 1 Jambesari. This activity provides practical knowledge to primary school graders in grades 1 to 6 about various kinds of work by making 7 posts or corners, each of which consists of a variety of jobs. Through the introduction of various professions, it is hoped that students can make choices of their dream job from an early age. There are professional props and costumes that support the visual appeal of students in every corner of the profession. Giving information about career guidance for student can be beneficially and very important to give career introductory for them (Sura & Mulyadi, 2019).

The application of career recognition through direct demonstration is in accordance with the stages of cognitive development in children of elementary age. Cognitive development at this age is at concrete operational stage, which means that children can think logically about concrete situations but need guidance in solving abstract problems, so it is important to provide direction and learning in concrete and practical forms (Desmita, 2009). Career introduction through the career festival prioritizes direct methods by providing understanding through visuals and demonstrations. This learning can be referred to as visual art, where visual art learning is a suitable method for primary school graders by building their knowledge through collaboration between creativity and even direct discussion between students and educators (Conway, 2019).

It is not only important to experience directly related to the profession being introduced, but career introduction will also have an impact on students' confidence and learning motivation to achieve their goals. Research shows that career recognition increases students' learning motivation. Providing information about various kinds of careers can improve career counseling strategies to increase self-efficacy in making career decisions so that it leads to increased motivation in making one's career decisions (Marinas et al., 2014).

Students who initially did not know directly about the use of the tools used by each profession, through this activity they obtain many information about careers (Figure 2 to Figure 8), for example (ring lights, tripods for content creator profession; drafts of building drawings in the architect profession; army clothes in the civil service profession; how to present or product promotion in the entrepreneurial profession; stethoscope and thermometer in the medical profession, new knowledge related to the professionalism of a "cook" who works in hotels, restaurants, etc.; as well as direct demonstration of the tools used by football athletes). As well as information that obtained by the students, hopefully they can make a best decision for their future. Students can improve their career decision making using career guidance and counseling strategies or by alternatives services to get more information about careers (Akhsania et al., 2021).



Figure 2. Army (TNI)



Figure 3. Architect



Figure 4. Businessman



Figure 5. Doctor



Figure 6. Chef 's



Figure 7. Content Creator



Figure 8. Athlete

Along with the implementation of career introduction in each corner for students in grades 4,5,6, there was a "career festival: my dream job" for students in grades 1,2,3 in the library hall of SD Negeri 1 Jambesari. The activities carried out were the screening of animated videos introducing various professions, from doctors, police, TNI, teachers, content creators, and other professions. In addition, there are coloring activities that aim to train the creativity of grade 1, 2 and 3 students. It is in line with the work of Farah et al (2021) who developed textbook activities for primary graders by considering kinesthetic activities as a way of attracting students' engagement. In addition, Er (2013) affirms that the use of Total Physical Responses is the best approach to teach students learn a language.

Different activities are carried out by grade 1,2,3 students where they draw activities to increase their creativity (Figure 9). The pictures they colored were pictures of professions which they hoped would make it easier to internalize learning outcomes related to explanations of various professions through presentations by the team. Fun activities through coloring activities could increase students' enthusiasm to get to know more about the various kinds of professions that exist. This was in line with research's finding that fun activities for children can increase motivation or enthusiasm in the learning process. Learning with the integration strategy of using instructional media involving videos, practical activities, flashcards, colors will increase student motivation (Al Mardhiyyah et al., 2021). Students who are motivated in learning can be indicated through involvement and attachment to class, this program process run very interactively and students were able to expressively show work results and there were lively discussion situations (Piaget, 1954).



Figure 9. Activities of coloring for grades 1, 2, and 3 at SDN 1 Jambesari

- Irfan, M., Mokhtar, A., & Pringga P, O. (2020). Pengembangan potensi ekonomi desa melalui wisata embung pintar. *BERDIKARI : Jurnal Inovasi Dan Penerapan Ipteks*, 8(1), 24–29. <https://doi.org/10.18196/bdr.8173>
- Kementerian PPN/ Bappenas. (2017). *Terjemahan tujuan dan target global Tujuan Pembangunan Berkelanjutan (TPB)/Sustainable Development Goals (SDGs)*.
- Khoiriyah, K., Farah, R. R., & Anggraeni, L. (2022). Integrating Islamic values in CLIL materials: a syllabus design for Islamic primary school. *Journal of English Language Studies*, 7(1), 12–26. <https://doi.org/10.30870/jels.v7i1.13297>
- Khoiriyah, Y. M., & Nursalim, M. (2011). Meningkatkan pemahaman karer siswa dengan pemberian layanan informasi karier di kelas xi is-4 SMA Negeri 13 Surabaya (suatu penelitian tindakan dalam bimbingan dan konseling). *Jurnal Mahasiswa Bimbingan Konseling Universitas Negeri Semarang*, 01(01).
- Marinas, C., Igrat, R. S., & Agoston, S. I. (2014). Students career motivation – a pilot study. *Proceedings of the 8th International Management Conference “Management Challenges for Sustainable Development,” November*.
- Muhlasin, W. Y., Handayani, F., Demak, I. P. K., & Fitriana, Y. (2022). Learning media development of the cheap skin-based model for medical faculty students at Tadulako University. *Research and Development in Education*, 2(1), 12–18. <https://doi.org/10.22219/raden.v2i1.19875>
- Muninda, Y. S., Pantiwati, Y., Purwanti, E., & Permana, T. I. (2021). “Liver as excretory organ”: Developing Android-based flash learning media for middle school students. *Research and Development in Education*, 1(2), 86–97. <https://doi.org/10.22219/raden.v1i2.19033>
- Muriyawati, & Rohmah, F. A. (2016). Pengaruh pemberian token ekonomi terhadap motivasi belajar siswa sekolah dasar. *Jurnal Pendidikan Sekolah Dasar*, 2, 58–72.
- Nugroho, E. (2011). Status sosial ekonomi peternak sapi perah di Kecamatan Poncokusumo Kabupaten Malang. *TERNAK TROPIKA Journal of Tropical Animal Production*, 12(2), 44–51.
- Octaviana, R., Sari, N. P., & Agustina, F. (2021). Development of echinoderm comic as learning media in Junior High School. *Research and Development in Education*, 1(2), 98–104. <https://doi.org/10.22219/raden.v1i2.18978>
- Osborn, D. S., & Zunker, V. G. (2015). *Using assessment results for career development*. Cengage Learning.
- Piaget, J. (1954). *The construction of reality in the child*. Ballantine.
- Prasetyo, I., Rofieq, A., Sukarsono, S., & Permana, T. I. (2022). How kidneys work? Developing of Android-based Adobe ani-mate media for senior high school students. *Research and Development in Education*, 2(1), 19–32. <https://doi.org/10.22219/raden.v2i1.20378>
- Rohmania, Q. N., Afifah, I. N., Fatnatin, F., Primandiri, P. R., Nurmilawati, M., & Santoso, A. M. (2022). Electronic module protist material based on ASICC learning strategies. *Research and Development in Education*, 2(1), 40–50. <https://doi.org/10.22219/raden.v2i1.2036>
- Sari, E. N. F. T., Amin, M., Hudha, A. M., Fatmawati, D., & Fauzi, A. (2021). Development of HOTS-based biology learning documents using ADDIE Model. *Research and Development in Education*, 1(2), 61–70. <https://doi.org/10.22219/raden.v1i2.19049>
- Sura, H., & Mulyadi, M. (2019). Career guidance and introduction services career students in SMKN 1 Enrekang. *Edumaspul: Jurnal Pendidikan*, 3(2), 41–49. <https://doi.org/10.33487/edumaspul.v3i2.132>
- Varisa, N., & Fikri, A. A. (2022). Development of biology learning media based on video blogs (vlog) on environmental change topic. *Research and Develeopment of Education*, 2(1), 33–39. <https://doi.org/10.22219/raden.v2i1.22056>
- Wijaya, A. D. (2017). Tingkat pemahaman karier siswa SD kelas rendah di Kecamatan Banguntapan. *E-Journal Bimbingan Dan Konseling*, 239–251.



Development of web-based administration system for Mandeh Pasir Fisherman Group, Marunggi Village, Pariaman City

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ARTICLE INFO	ABSTRACT
<p>Article history Received: 2022-11-07 Revised: 2022-12-15 Accepted: 2022-12-16 Published: 2022-12-16</p> <p>Keywords Fisherman Information technology Marunggi Web-based administration</p>	<p><i>As an area close to the sea, the life of the people of Kota Pariaman is highly dependent on marine products. One of the villages in Pariaman City that is very dependent on marine products is the community of Pasir Marunggi Village, South Pariaman District. The strategic location of Pasir Marunggi village, namely the road to go to the Minangkabau international airport and to Pariaman City, automatically makes this village a frequent stopover, especially with the sek rice stalls in Pasir village, which have characteristics with those around Pariaman. Some of the obstacles faced in addition to the lack of knowledge in the field of Information Technology in the process of promoting aquaculture and catches by fishermen, resulting in a decrease in sales turnover for fishermen. This community service was aimed to web-based administration system for Mandeh Pasir Fisherman Group, Marunggi Village, Pariaman City. The computer-based administration system is given because there are still many fishermen who are members of the Mandeh - Fisherman Group who do not understand how to manage a computer-based administration system. The expected result is that business groups can do bookkeeping with a computer by introducing Microsoft Word and Excel for administrative facilities and adding block making training to facilitate the promotion of business groups so that they can be known in other areas and increase revenue turnover.</i></p>
<p>Kata kunci Administrasi berbasis web Marunggi Nelayan Teknologi Informasi</p> <div data-bbox="268 1556 391 1680"></div> <div data-bbox="172 1691 462 1758"></div>	<p>Pengembangan sistem administrasi berbasis web untuk Kelompok Nelayan Pasir Mandeh, Desa Marunggi, Kota Pariaman. Sebagai daerah yang dekat dengan laut, kehidupan masyarakat Kota Pariaman sangat bergantung pada hasil laut. Salah satu desa di Kota Pariaman yang sangat bergantung pada hasil laut adalah masyarakat Desa Pasir Marunggi, Kecamatan Pariaman Selatan. Letak desa Pasir Marunggi yang strategis yaitu jalan menuju bandara internasional Minangkabau dan menuju Kota Pariaman, otomatis membuat desa ini sering disinggahi, apalagi dengan warung nasi sek di desa Pasir yang memiliki ciri khas dengan yang ada di sekitar Pariaman. Beberapa kendala yang dihadapi selain kurangnya pengetahuan di bidang Teknologi Informasi dalam proses promosi budidaya dan hasil tangkapan nelayan, mengakibatkan turunnya omzet penjualan bagi nelayan. Pengabdian masyarakat ini bertujuan untuk sistem administrasi berbasis web untuk Kelompok Nelayan Mandeh Pasir, Desa Marunggi, Kota Pariaman. Sistem administrasi berbasis komputer diberikan karena masih banyak nelayan yang tergabung dalam Mandeh – Kelompok Nelayan yang belum memahami cara mengelola sistem administrasi berbasis komputer. Hasil yang diharapkan kelompok usaha dapat melakukan pembukuan dengan komputer dengan memperkenalkan Microsoft Word dan Excel untuk sarana administrasi dan menambah pelatihan pembuatan blok untuk memudahkan promosi kelompok usaha sehingga dapat dikenal di daerah lain dan meningkatkan omzet pendapatan.</p> <p style="text-align: right;">Copyright © 2022, Nasir et al This is an open access article under the CC-BY-SA license</p> <div data-bbox="1133 1724 1316 1803"></div>

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INTRODUCTION

Education is the main vehicle for preparing quality human resources (Adam, 2022; Agustini et al., 2021; Arifin et al., 2021; Muhlasin et al., 2022; Muninda et al., 2021; Octaviana et al., 2021; Prasetyo et al., 2022; Rohmania et al., 2022; Sari et al., 2021; Varisa & Fikri, 2022), including fisherman community. West Sumatra is a province located on the west coast of Sumatra Island (Adry et al., 2018). This province is part of the territory of Indonesia, which has a wider ocean than land. West Sumatra has approximately 200 islands that already have names and 91 that have not been named (Kamarni et al., 2019). A total of 99 islands are located in the Mentawai Islands Regency, And the rest are on the coast of West Sumatra (Deliana & Lubis, 2020). The existence of the islands in West Sumatra is connected by ships and traditional boats (Nova, 2017). Traditional boats and boats play an important role, both as a means of transportation for trade and as a means of fishing (Hanafi et al., 2019). Of the 19 cities/regencies located in West Sumatra, not all are located on the coast of West Sumatra.

Pariaman City is a city located on the coast of West Sumatra (Yusuf et al., 2021). Pariaman City is located on the west coast of West Sumatra with an area of 73.36 square kilometers, consisting of an ocean area of 12 square kilometers and a coastline of 12 kilometers (Fasdiah et al., 2022). As an area close to the sea, the life of the people of Kota Pariaman is highly dependent on marine products. One of the villages in Pariaman City that is very dependent on marine products is the community of Pasir Marunggi Village, South Pariaman District (Ophiyandri et al., 2019).

The strategic location of Pasir Marunggi village, namely the road to go to the Minangkabau international airport and to Pariaman City, automatically makes this village a frequent stopover, especially with the Nasi sek stalls in Pasir village, which have a characteristic similar to those around Pariaman (Haryani & Aditya, 2020). Village Community is an effort to develop independence and community welfare by increasing knowledge, attitudes, skills, behavior, abilities, awareness and utilizing resources through the establishment of appropriate policies, programs, activities, and assistance. In 1990, fishermen from Pasir Marunggi Village experienced a declining economy, due to fishermen from outside Pasir Marunggi village such as: Taluk village, Karan Aur, Tiku and even Sibolga who caught fish in Pasir Marunggi village. Fishermen who come from outside are already using machines, while fishermen from Pasir Marunggi still use hooks and nets to catch fish in the traditional way (Arif et al., 2016). This makes fisherman catches not optimal. The catch is sold on the beach and some are sold to the Fish Auction Place (TPI).

The interesting thing for researchers is that there are only slight changes in the fishing methods or tools used by the fishermen in Pasir Marunggi village to find fish. In fact, many fishermen still catch fish in the traditional way, namely canoes and hooks, when they still rely on the wind factor to catch fish (Lumbantobing et al., 2022). In 1990 the income of fishermen in Pasir Marunggi Village did not increase significantly. However, from 2000 to 2015 the life of the fishermen in Pasir Marunggi village began to develop along with the emergence of technology and the business of rice stalls (restaurants) as one of the tourist attractions in Pariaman City (Nursanty et al., 2022).

Some of the obstacles faced in addition to the lack of knowledge in the field of Information Technology in the process of promoting aquaculture and catches by fishermen, resulting in a decrease in sales turnover for fishermen (Varudharajulu & Ma, 2018). The development of fishermen's lives in the village of Marunggi received attention from the government in the form of assistance in both aquaculture and capture cultivation (Haligamo et al., 2022). The aid is in the form of ships, ranging from 5 tons to 30 tons, either in the form of wooden or fiber boats. Meanwhile, assistance in the field of Information Technology such as computers, Internet facilities for marketing promotions and knowledge of the use of computers in managing the administrative system has never been done to the actors of aquaculture and capture culture. In the process of aquaculture and capture cultivation, it is managed by a partner called the Mandeh - Fisherman Group (Rahim et al., 2018). In the process of cultivating and capturing networks, there are obstacles, but this Fisherman Group has problems related to marketing (Nasution et al., 2022). Marketing carried out by Fisherman Group is still classified as conventional which relies on mobile phones (Noor et al., 2022). And there are also cultivated products, and their catch is handed over to the shelter or sold directly to traditional markets (Anshari & Afriansyah, 2022). With a marketing system like this, it can reduce profits for Fisherman Group or the fishermen themselves (Adrimas et al., 2019).

This community service was aimed to web-based administration system for Mandeh Pasir Fisherman Group, Marunggi Village, Pariaman City. This training related to the computer-based administration system at the Mandeh - Fisherman Group is very much needed (Jalinus et al., 2019). The computer-based administration system is given because there are still many fishermen who are members of the Mandeh - Fisherman Group who do not understand how to manage a computer-based administrative system. Management of computer administration systems such as providing training in Microsoft Office Word, Excel and Power Point at the Mandeh - Fisherman Group. Therefore, this community service is very much needed to avoid the occurrence of a digital divide for people in the Marunggi village.

METHOD

The transfer of science and technology carried out by the coaching team is carried out at each stage using the concept that all these activities involve the Mandeh - Fisherman Group. Joint Business Groups are given guidance through the process of listening, knowing, training, evaluating, giving, receiving and implementing. Through the coaching process, it is

hoped that all Fisherman Group can utilize science and technology related to the computer-based Management of the Fisherman Group Administration System in managing their business, such as managing sales reports and correspondence. To manage the sales administration system, it must be clearly recorded in the bookkeeping, all sales notes must be recapitulated into a computer system that utilizes MS Excel. In the process of offering aquaculture and catch, an electronic bidding system is needed, such as using MS Word in writing letters, sending emails by utilizing internet facilities.

In order for the Fisherman Group. To implement a good administrative system, it is necessary to provide incentives for the Fisherman Group. After the coaching was carried out, the team provided briefing to introduce computer equipment to the two Fisherman Group, with the aim of Fisherman Group being able to manage the administrative system independently. So, with this coaching, it is expected to improve the administrative system, increase sales and finally get big profits. So that each process goes well, the delivery of innovation to KNM members is taken through the stages of explanation, discussion, practice and stages of mentoring and evaluation of service results. In general, the approach process to assist KNM for managing computer-based administrative systems is shown in the Figure 1.

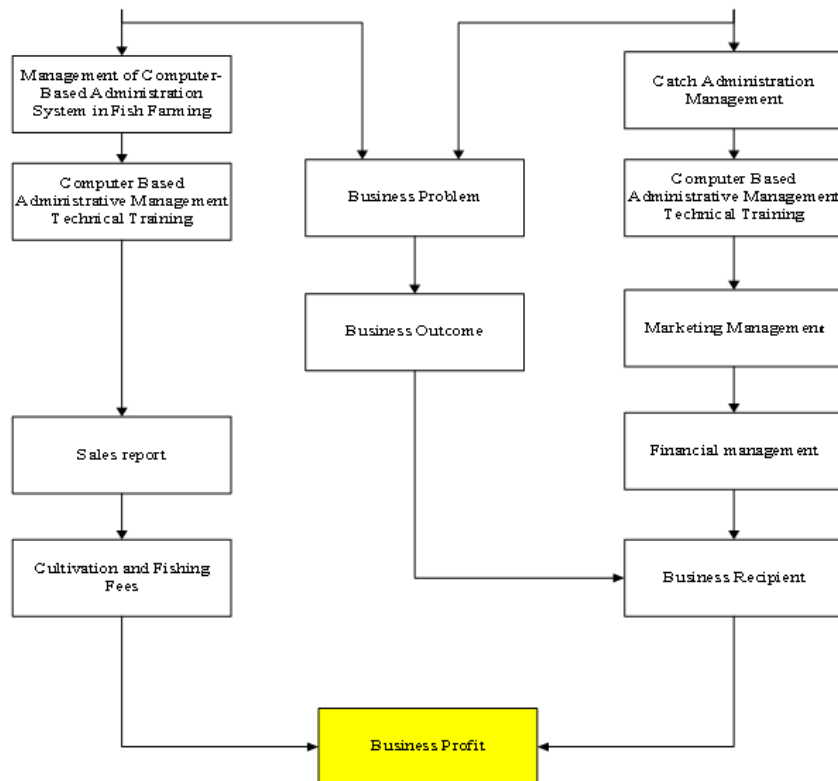


Figure 1. Flow of Service in Marunggi Village

Solutions and Output Targets

Solutions The solution given to the Pasir Mandeh Fishermen group, which is in Pasir Sigadondong, Marunggi Village, Pariaman City. Providing guidance on the introduction of computers as a means of using technology in everyday life to avoid the digital divide. Train Joint Business Groups in managing administrative systems-based computer like using Microsoft Office. Providing guidance on how to manage finances recorded in a computerized manner, to make it easier to access financial data and organize document archives so that if one day is needed, they can be quickly and easily accessed.

The target to be achieved through efforts to improve the ability of fishermen joined in the Pasir Mandeh Fishermen Group from the administrative form conventional into a computer-based administration system. If the Computer-Based Administration System in the prayer fishermen group is stagnant is implemented so it can reduce the digital divide and the fishermen's economy increase. And to provide broad value benefits, this coaching can carry out to a similar Pasir Mandeh Fishermen Group in Pasir Sigadongdong, Marunggi Village, Pariaman City, to be in the form of new coaching, good Computer development and marketing. Furthermore, it is expected to increase turnover for fishermen and understand the use of computer-based administrative systems. Specific outputs are listed in Table 1.

Table 1. The outcome of community service

No	Type of Outcome	Indicator Achievement
1	Scientific Publications in Journals/Proceedings	Publish
2	Publication in Mass Media	No
3	Increase in Turnover for the Pasir Mandeh Fishermen Group engaged in the economy	There is
4	Product Quality and Quantity Improvement	There is
6	Improvement of Community Understanding and Skills	There is
7	Improvement of Public Peace / Health	There is
8	Services, Models, Engineering, systems and Products	There is
9	Intellectual Property Rights (Patents, Simple Patents, Copyrights, Trademarks, Trade Secrets, Industrial Product Designs, Plant Variety Protection, Topographic Protection)	No

RESULTS AND DISCUSSION

Action

This training takes the theme of Computer-Based Administration System at the Mandeh - Fisherman Group in Marunggi village. The coaching consists of three main materials delivered by the Service Team, namely Introduction to Computers and Introduction to MS Office. Both materials were given in a structured manner for 3 consecutive days. For the introduction of computers, the material provided includes Computer Systems which are divided into: Hardware, Operating Systems, Application Programs, Brainware (users). The material assignments given are as follows: (1) Introduction to Hardware, of course, introduces the computer device itself, such as the functions of the CPU, Memory and Hard disk. (2) For the operating system to introduce the computer operating system itself, the computer will not be able to work properly without an operating system. The operating system introduced in the training was Windows Operations Student. While other operating systems are not provided, due to time constraints. (3) Application Programs on computers are ready-to-use software that will later be used to help carry out the work of its users. In a computer this application is prepared according to their respective needs.

Outcome of Devotion

The output target of holding a lecturer service regarding the development of administrative systems using computers in the Mandeh - Fisherman Group on Marunggi Island is that the community is able to understand computers among the introduction of devices such as. Motherboard, memory, hard disk, how the processor works and input devices such as keyboard, mouse, and output such as monitors, speakers, printing machines and how to run applications on computers, especially Offices applications where we explain what Microsoft Office Word is (Hananto et al. al., n.d.). As we know, Microsoft Word is used to help create documents in the form of reports or papers. And in Microsoft Word there are functions, namely: (1) Outline Creation; (2) Use of Break Section; (3) Page Numbering; (4) Table Listing; (5) Creating a Table of Contents; and (6.) Editing with Document Map

Which is useful for the administrative system, especially the administration of the Mandeh - Fisherman unit group on Marunggi Island where for correspondence it still uses a manual, namely writing instruments to check or calculate the income of the Mandeh - Fisherman group. With the dedication in the form of coaching that we do, we hope that the Marunggi community can at least understand what a computer is and be able to use computer applications, especially MS Office.

Discussion

Based on the results that have been described, all members of the Mandeh - Fishermen Group in Marunggi village can operate computers and understand how computers work themselves and recognize the devices on their own computers and can make administrative bookkeeping reports for fishermen without having to do it manually. Such as writing correspondence with Microsoft Office Word, understanding the tools in Word and typing with 10 fingers and a little understanding of computer networks and calculations using Microsoft Office Excel to calculate the income of the Mandeh - Fisherman group. And all Mandeh - Fishermen Group members can report their catch to the Pariaman City Fisheries Service.

The discussion of the results of the service that we carried out in Marunggi village can be described in general as follows. Format Text Word in making Letters You can set the text format by using one of the following methods, Block

the text that you want to format, then set the format as you want. Place the cursor at the initial position and then set the format. This way, all text that you type starting from the initial position will follow the format you selected until you make changes back or move the cursor position to another part of the document. Creating Tables and Calculations with Formulas Make a daily wage list worksheet from Mandeh - Fishermen Group Fishermen as shown in Figure 2. Also enter the contents of the Empty Working Time and Total Wage, and then change the form to a table form. Question Provisions: Working Time = Hours Out- Hours In; Total Wage = Working Time * 24 * Wage Rate/Hour.

TARIF HONOR PER JAM		3500		
NAMA KARYAWAN	JAM	JAM	WAKTU	TOTAL
	MASUK	KELUAR	KERJA	HONOR
Asih Winantu				
Haikal Azhar				
Evi sulasih				
Ardian S				
			JUMLAH	

Figure 2. Examples of Materials Provided

Setting Design in Power Point

One of the important elements of a good presentation, including presentations for presentation assignments that can be done by Mandeh - Fishermen Group members in presenting their reports, is using power point (Figure 3). One of them uses the default themes from PowerPoint as follows: (1) Click the Design tab of the ribbon in PowerPoint. (2) Click on the Themes arrow. The arrow in the middle is for scrolling the themes screen, while the arrow at the bottom is for all existing themes. You can choose it by clicking on one of the built-in themes, etc.

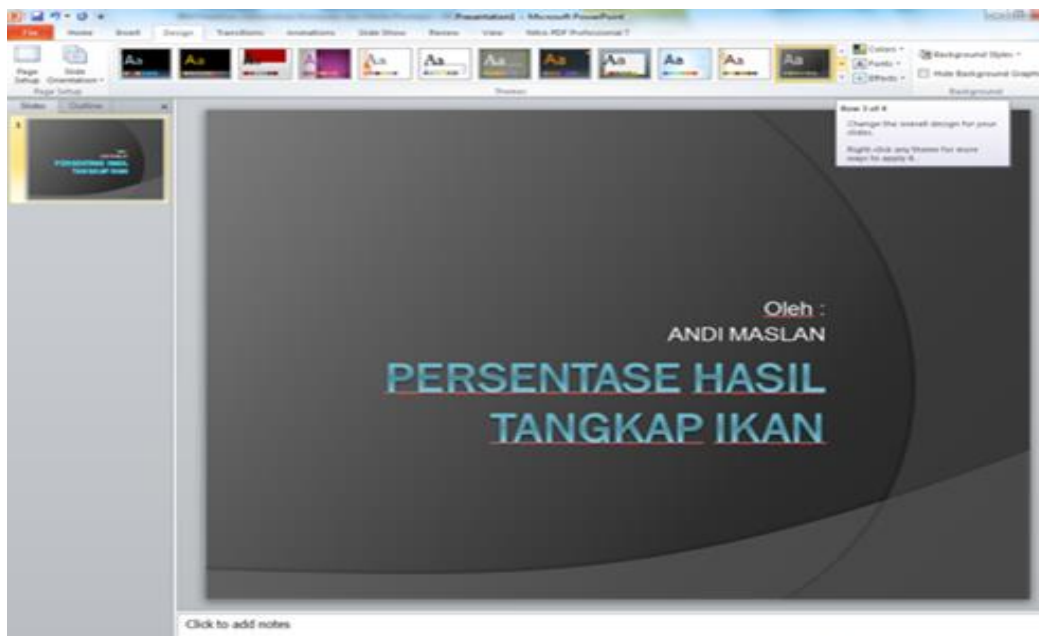


Figure 3. Power Point Presentation Design Materials

Evaluation of Service results

After serving for three days in a row, the level of achievement of participants in understanding the material provided can be seen in the Table 2.

Table 2. Evaluation components

No	Evaluation Component	Observed aspects	Observation result (%)	Scale
1	Reaction	Training Participants Satisfaction	82	Very satisfied
2	Study	Training Participants Activities	85	Very satisfied
		Coach Activities	78	Well
		Infrastructure	70	Well
		Learning strategies	75	Well
		Training materials	76	Well
3	Behavior	Member Participation	70	Well
		Support Village Apparatus	80	Very satisfied

From the results of the service evaluation carried out in Marunggi village, it can be seen from the graph that all indicators are well fulfilled. Thus, the community was very satisfied with the training. The level of satisfaction of participants reached 82%, the achievement of the learning process of participants was 85%, good activities during the activity reached 78%, the facilities used were good 70%, teaching methods were good 75%, good material reached 76%, and participation of fisherman group members reached 70% and village apparatus support reaches 80%. The results of this evaluation become a reference for continuing service in the village of Marunggi, South Pariaman District. The documentation of the community service was shown in Figure 4, Figure 5, Figure 6, and Figure 7.



Figure 4. Socialization of community service

The community service activity began with a field survey and direct questions and answers with the Pasir Mandeh Fishermen's Group and the Marunggi village head with questions and answers on the problems that occurred regarding the promotion of facilities.



Figure 5. Material presentation

Furthermore, community service activities carried out presentations and learning how to use computers as a means of promotion for the Sigadongdong sand fisherman group, Marunggi village.

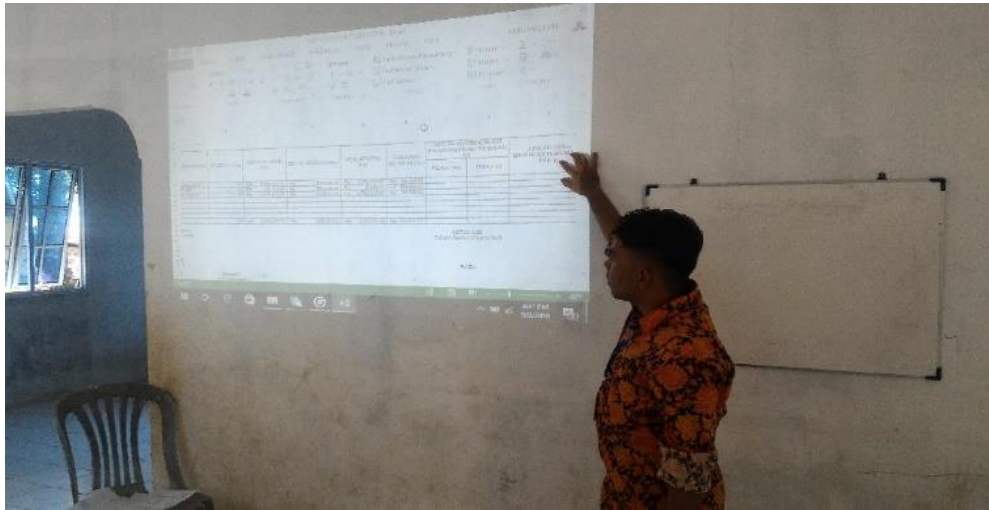


Figure 6. Introduction to administrative system with excel

Delivering material on Microsoft Excel and bookkeeping for administrative facilities and giving tutorials on how to make blocks.



Figure 7. science and technology transfer process

The speaker's activities are underway with enthusiasm from the fishermen's group and Marunggi village officials with supplies delivered by the service team. Planned activities for fostering a Computer-Based Administration System for Fishermen in Mandeh prayer fishermen groups may experience the following problems: Socialization Program Development: In order to carry out outreach to Fishermen Groups, prior approval is required that the Fishermen Group is willing to be given guidance. Because each fishing group has a minimum of 10 members and this development must go through their approval. And these members play a role to achieve the success of this activity. During the initial survey to the location of the fishermen's group, they were very interested in the training plan, so that all fishermen's wishes to know technology could be realized. Action Plan: Details of coaching activities need to be conveyed in detail to the fishermen group, because every step of coaching requires participation. The action plan for this coaching is to provide an introductory coaching and computer-based administration system. Selection of places and equipment for computer development is a step to produce useful training for fishermen groups. The coaching place is in Sigadongdong sand, Marunggi village. Business Recording, Bookkeeping and Business Evaluation: All business activities, both related to activities and cash flow, must always be properly recorded. This part is a difficult part to do, because in general conventional entrepreneurs never keep records. Business recording and bookkeeping is an important part of business monitoring and evaluation. Without proper recording and bookkeeping of business monitoring and evaluation, implementing a computer system and web-based promotional media can improve the business results of the fishing

groups. To carry out this service, the service team first conducted a preliminary survey, the survey was carried out on August 23, 2022. The survey included a site survey, determining a coaching schedule and granting an official permit to Marunggi village. After the letter is received, socialization is needed to the fishermen's group for prior approval that the fishermen's group is willing to be given guidance. Because each fishing group has a minimum of 10 members and this development must go through their approval. And these members play a role in achieving the success of this activity. During the initial survey to the location of the fishermen's group, they were very interested in the development plan, so that all fishermen's wishes to know technology could be realized.

CONCLUSION

From the results of community service activities, it can be said that the introduction of a computer-based administrative system on Marunggi Island is very much needed by the local community, especially members of the Mandeh - Fisherman Group. The service material has been given well and it can be seen that there is an increase in participants' knowledge based on the results of the evaluation that has been carried out. The average service success rate reaches 77% as measured by the results of participant observations during the activity.

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REFERENCES

- Adam, A. S. (2022). Pop-up question on educational physics video: Effect on the learning performance of students. *Research and Development in Education*, 1(2), 1–11. <https://doi.org/10.22219/raden.v2i1.20271>
- Adrimas, A., Rivai, H. A., & Sartika, D. (2019). Analysis of economic growth and structural changes and the implication for choice of development strategy: A Case study of Pasaman regency. *Econpapers*, 5(11), 1649–1656. https://econpapers.repec.org/article/arptjssrr/2019_3ap_3a1649-1656.htm
- Adry, M. R., Putri, D. Z., Riani, N. Z., & Marta, J. (2018). The potency of sea fishery in West Sumatra. *Advances in Economics, Business and Management Research*, 57(Piceeba), 391–396. <https://doi.org/10.2991/piceeba-18.2018.20>
- Agustini, I. N., Sa'adah, S., & Paujiah, E. (2021). Digital comics learning media for high school on the human excretory system concept. *Research and Development in Education*, 1(2), 71–85. <https://doi.org/10.22219/raden.v1i2.18911>
- Anshari, F. A., & Afriansyah, A. (2022). Marine and fisheries development policy after the enactment of the job creation act. *Sasi*, 28(2), 199. <https://doi.org/10.47268/sasi.v28i2.776>
- Arif, E., Darwis, Y., & Lestari, Y. (2016). The communication behaviour of Pariaman society and the government in order to support pariaman as a tourism city faculty of social and political science. *International Journal of Humanities and Social Science*, 6(12), 195–200. http://www.ijhssnet.com/journals/Vol_6_No_12_December_2016/21.pdf
- Arifin, S., Amin, M., Husamah, H., Hudha, A. M., & Miharja, F. J. (2021). Development of a biology practicum module with microtech-nical preparations on the structure and function of plant tissue. *Research and Development in Education*, 1(2), 45–60. <https://doi.org/10.22219/raden.v1i2.18919>
- Deliana, ., & Lubis, M. (2020). *Local wisdom of Badoncek as oral tradition in pariaman ethnic-group wedding ceremony. Icosteerr 2018*, 1296–1300. <https://doi.org/10.5220/0010072212961300>
- Fasdhah, N., Nurhascaryani, P., & Rahmah, M. (2022). Implementation of the Gandoriah-Sunur beach tourism destination development program as a Pariaman City Tourism Strategic Area (KSPK), West Sumatra Province, Indonesia. *TRANSFORMASI: Jurnal Manajemen Pemerintahan*, 13(2), 133–144. <https://doi.org/10.33701/jtp.v13i2.1934>
- Haligamo, D., Honja, S., & Tagele, D. (2022). Assessing community members' knowledge and attitude towards Community-Based Education practices in Southern Ethiopia. *Journal of Community Service and Empowerment*, 3(1), 45–54. <https://doi.org/10.22219/jcse.v3i1.16167>
- Hanafi, A., Riniwati, H., & Afandhi, A. (2019). Fishing gears assessment based on Code of Conduct for Responsible Fisheries (CCRF) at Probolinggo. *J-Pal*, 10(2), 107–114. <https://doi.org/10.21776/ub.jp.al.2019.010.02.05>
- Haryani, H., & Aditya, E. (2020). Assessment of Beach abration vulnerability levels and directions for space utilization in Central Pariaman District Pariaman City. *Sumatra Journal of Disaster, Geography ...*, 4(2), 225–233.
- Jalinus, N., Rizal, F., Wulansari, R. E., Zaus, M. A., & Islami, S. (2019). Design and need analysis of Computer Devices' expert system using forward chaining method. *International Journal of GEOMATE*, 17(61), 202–207. <https://doi.org/10.21660/2019.61.icee408>

- Kamarni, N., Anshori, M., & Sukmana, R. (2019). Poverty alleviation through social capital in coastal areas: Pariaman coastal case. *Journal of Innovation in Business and Economics*, 3(1), 1–10.
<https://doi.org/10.22219/jibe.v3i01.7561>
- Lumbantobing, R., Tampubolon, L. D. R., Iskandar, D., Purnama, E. D., & Frederica, D. (2022). Financial literacy and inclusion for millennial UMKM Owners in West Jakarta. *International Journal Of Community Service (IJCS)*, 2(3), 290–295. <https://doi.org/10.51601/ijcs.v2i2.66>
- Muhlasin, W. Y., Handayani, F., Demak, I. P. K., & Fitriana, Y. (2022). Learning media development of the cheap skin-based model for medical faculty students at Tadulako University. *Research and Development in Education*, 2(1), 12–18. <https://doi.org/10.22219/raden.v2i1.19875>
- Muninda, Y. S., Pantiwati, Y., Purwanti, E., & Permana, T. I. (2021). “Liver as excretory organ”: Developing Android-based flash learning media for middle school students. *Research and Development in Education*, 1(2), 86–97.
<https://doi.org/10.22219/raden.v1i2.19033>
- Nasution, R. P., Elvina, E., & Nasution, N. L. (2022). Building a young entrepreneur soul with king bean. *International Journal Of Community Service (IJCS)*, 2(3), 360–365. <https://doi.org/10.51601/ijcs.v2i3.111>
- Noor, S. M., Hasaruddin, H., Rizal, M., Dwi, I. M., & Adnyana, M. (2022). Class improvement strategies for the Binuangun fish landing base in Lebak Regency, Banten. *Marine Fisheries*, 13(2), 123–136.
- Nova, S. A. R. (2017). Illegal, Unreported and Unregulated Fishing: the Impacts and Policy for Its Completion in Coastal West of Sumatera. *Indonesian Journal of International Law*, 14(2). <https://doi.org/10.17304/ijil.vol14.2.689>
- Nursanty, E., Ratnawati, H., Putranti, D., & Fatarina, E. (2022). Yoghurt making training to build women’s resilience in developing local economy and healthy lifestyle. *Journal of Community Service and Empowerment*, 3(2), 64–71.
<https://doi.org/10.22219/jcse.v3i2.21034>
- Octaviana, R., Sari, N. P., & Agustina, F. (2021). Development of echinoderm comic as learning media in Junior High School. *Research and Development in Education*, 1(2), 98–104. <https://doi.org/10.22219/raden.v1i2.18978>
- Ophiyandri, T., Istijono, B., & Hakam, A. (2019). Community empowerment in planting vegetation to reduce coastal abrasion in West Sumatra. *International Journal of GEOMATE*, 16(54), 68–73.
<https://doi.org/10.21660/2019.54.8118>
- Prasetyo, I., Rofieq, A., Sukarsono, S., & Permana, T. I. (2022). How kidneys work? Developing of Android-based Adobe ani-mate media for senior high school students. *Research and Development in Education*, 2(1), 19–32.
<https://doi.org/10.22219/raden.v2i1.20378>
- Rahim, A., Hastuti, D. R. D., Pradipta, D., Bustanul, N., & Azizah, N. (2018). The influence of respondent characteristics and different areas on small-scale fisherman household income of urban coastal areas in Pare-Pare City, South Sulawesi. *Journal of Socioeconomics and Development*, 1(2), 63. <https://doi.org/10.31328/jsed.v1i2.733>
- Rohmania, Q. N., Afifah, I. N., Fatnatin, F., Primandiri, P. R., Nurmilawati, M., & Santoso, A. M. (2022). Electronic module protist material based on ASICC learning strategies. *Research and Development in Education*, 2(1), 40–50.
<https://doi.org/10.22219/raden.v2i1.2036>
- Sari, E. N. F. T., Amin, M., Hudha, A. M., Fatmawati, D., & Fauzi, A. (2021). Development of HOTS-based biology learning documents using ADDIE Model. *Research and Development in Education*, 1(2), 61–70.
<https://doi.org/10.22219/raden.v1i2.19049>
- Varisa, N., & Fikri, A. A. (2022). Development of biology learning media based on video blogs (vlog) on environmental change topic. *Research and Develoepment of Education*, 2(1), 33–39. <https://doi.org/10.22219/raden.v2i1.22056>
- Varudharajulu, A. K., & Ma, Y. (2018). A Survey on Big Data Process Models for E-Business, E-Management, E-Learning, and E-Education. *International Journal of Innovative Research in Computer and Communication Engineering*, 220–222. <https://doi.org/10.15680/IJIRCCCE.2018>
- Yusuf, H. N., Suman, A., Suhermanto, A., Yeka, A., Syamson, I., Rahmani, R. M., Fitri, Y., Kusmedy, B., & Nugraha, E. (2021). The growth rate of *fenneropenaeus indicus* in seneboy waters, south sorong, papua, indonesia. *AAFL Bioflux*, 14(3), 1150–1162.

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INTRODUCTION (bold, 11pt)

This section could also provide the expected results. The introduction must be written in single line spacing. The introduction comprises of:

- 1) Analysis of the general situation (global) and followed by a description of the main problems of the target community. The authors must explain that the problem is a problem related to 17 goals/169 targets of SDGs. Summary of literature review: theoretical studies, results of the present study, and report/article on the publication of previous community service activities, which shows that the problem is indeed "strong" (state of the art). Do not describe the literature review as author by author but should be presented as a group per method or topic reviewed, which refers to some kinds of literature)
- 2) The sentence confirms that the problem must immediately require a solution (gap analysis).
- 3) The problem solves planning (Describe the novelty of the technology / approach used to solve the problem).
- 4) Affirmation sentence about the purpose of community service.
- 5) Affirmation about the purpose of writing the article.
- 6) Affirmation of article contribution (a. For the development of science and technology, b. For the achievement of SDGs).

The introduction section must be written in Calibri Light, font size 10, 0 pt before spacing, and 0 pt after spacing.

METHOD (bold, 11pt)

This section must contain:

- 1) The description of the target community (description of the "background" of the community, how many people are, and how is the role/involvement of community in this community service activity).
- 2) The parties involved in this service activity (including the number and role or contribution of each, not explaining the name but background/expertise).
- 3) Implementation method that explains the stages or steps in implementing the solution offered to resolve the problem.
- 4) Overview of science and technology transferred/introduced.
- 5) Instruments or tools and materials used in community service activity (including to measure the success of service activities).
- 6) Data collection techniques
- 7) Measures / indicators of success of community service activities, and
- 8) Data analysis techniques.

The method section must be written in Calibri Light, font size 10, 0 pt before spacing, and 0 pt after spacing.

RESULTS AND DISCUSSION (bold, 11pt)

Guidelines for writing results and discussion:

- 1) Results must be relevant to the objectives and methods.
- 2) The results explanation of the activities must be simple and straightforward.
- 3) Write data in the form of figures or tables (highly recommended, especially those relating to indicators of success of activities).
- 4) Describe clearly the data and various results of the resolution of relevant problems.
- 5) Discussion of activities: comparing with theory and similar community service activities that have been published or reported (it is highly recommended to recite references that appear in the introduction, especially the state of the art and gap analysis).
- 6) Describe the successes or impressive achievements that are appropriate as best practices for other servants/authors (associate with contributions to the achievement of SDGs).
- 7) Figures or tables must be related to explanatory text (narration in paragraphs).
- 8) Don't put figures/illustrations that are not discussed in the text
- 9) Describe the obstacles that might be encountered in the community service activities (the obstacles must be logical, not solely because of the weak implementation of the activity, completely beyond the control of the team, and existing references support these constraints).

The results and discussion section must be written in Calibri Light, font size 10, 0 pt before spacing, and 0 pt after spacing.

Figures and Tables

Place the labels above for tables and below for figures. Write the table label in specific, for example Table 1, in case the author refers the Table 1 mentioned. The example of writing table and figure information is as below.

Table 1. Table format

Table Head	Table Column Head		
	Table column subhead	Subhead	Subhead
copy	More table copy ^a		

^a Sample of a Table footnote. (Table footnote)

Figures must be discussed in paragraphs. The figures quality must be good and high resolution. Figures are numbered in the order in which they are presented (Figure 1., etc.). The title of the figure is placed under the image with the center position (center justified).

Fig. 1. Example of figure information

CONCLUSION (bold, 11pt)

Guidelines for writing a conclusion:

- 1) Relevant to the objectives written in the introduction.
- 2) Claims in conclusion must be supported by facts/data from the results of activities.
- 3) Write the conclusions concisely.
- 4) The implications of the activities need to be put forward to clarify the benefits resulting from the service activities.

The conclusion section must be written in Calibri Light, font size 10, 0 pt before spacing, and 0 pt after spacing.

ACKNOWLEDGMENT (bold, 11pt)

This section can be written in case there are certain parties need to be acknowledged, such as sponsors/funding (complete with contract number and year). The acknowledgement must be written in brief and clear. Besides, avoid hyperbole acknowledgment.

The conclusion section must be written in Calibri Light, font size 10, 0 pt before spacing, and 0 pt after spacing.

REFERENCES (bold, 11pt)

Citation and referencing must be written based on APA style 6th Edition which is organized by using Mendeley software's latest version. References used at least 30, 80% primary sources (reputable journals and research reports or community service report) and 10 (ten) years of publication. All references must be tracked online (have DOI or URL).

The references section must be written in Calibri Light, font size 10, 0 pt before spacing, and 0 pt after spacing.

Supplementary Material

Supplementary material that may be helpful in the review process should be prepared and provided as a separate electronic file. That file can then be transformed into PDF format and submitted along with the manuscript and graphic files to the appropriate editorial office.