



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 style="text-align: center;"> </div> <div 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 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.

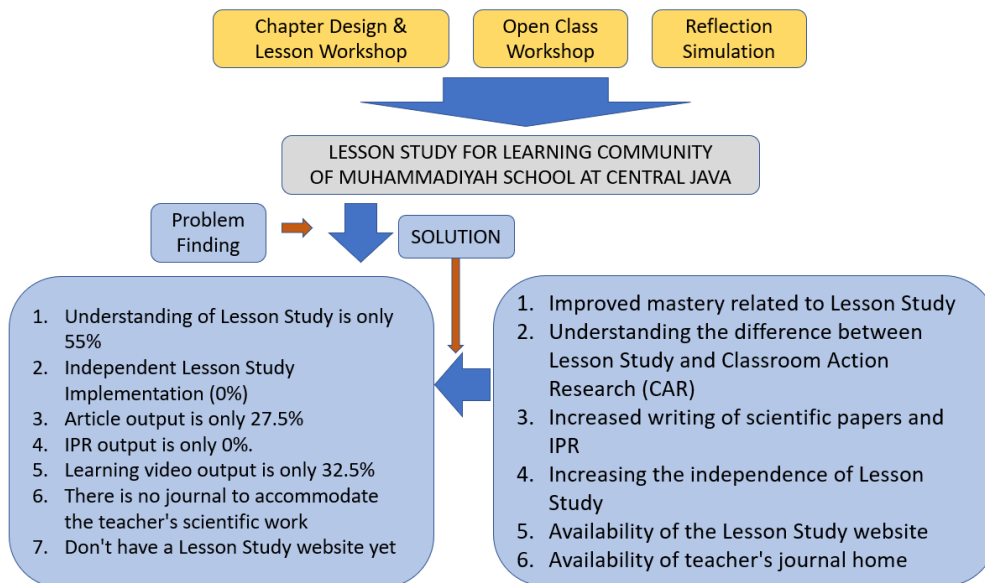


Figure 1. Direction of community service activities

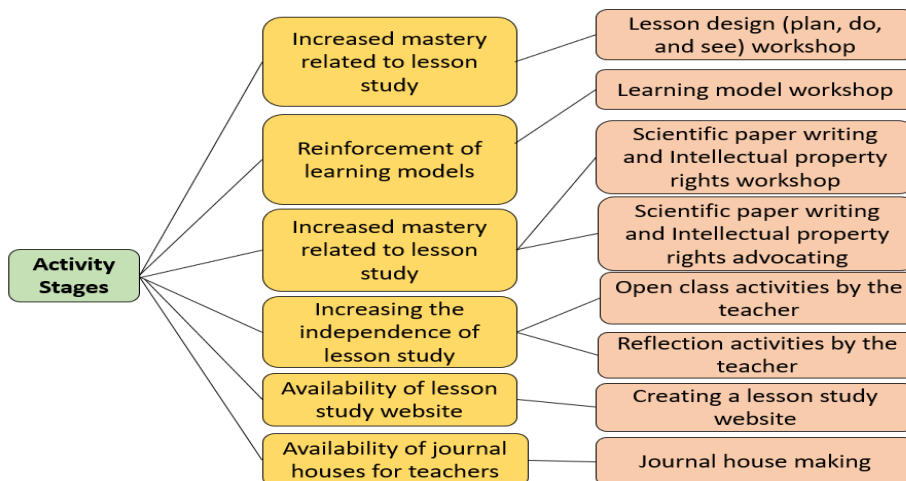


Figure 2. Stages of activities

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 Bloro; 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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