



Analysis of Online Learning Student Activities Using the Problem Based Learning (PBL) Model through Lesson Study

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Abstract: Online lectures so far have been less effective and being less attractive to students often makes students passive, bored, and not enthusiastic about attending lectures. Students are not active in the lecture process will not achieve a learning goal. This study aims to describe the analysis of student activities with the Problem Based Learning (PBL) model through lesson study in online learning. The research method used is a qualitative descriptive analysis method. Data validity techniques use triangulation techniques. Data is collected by observing techniques and recording student activities during online learning. Data analysis techniques present calculations in the proportion of observations on student activity. The implementation of research is carried out based on lesson study activities, namely plan, do and see. In the planning stage, model lecturers and observers agreed that the problem to be solved was online learning with the Problem Based Learning (PBL) model. Activities that will be observed 5 aspects, namely oral activities, listening activities, writing activities, mental activities and emotional activities. At the do stage, model lecturers carry out learning through the PBL model. The orientation of the problem is centred on the observation of integrated thematic learning in elementary schools. While the see stage shows the profile of student learning activities in online learning through the PBL model, namely oral activities of 86.1, listening activities of 96.3, writing activities amounted to 89.4, mental activities amounted to 86, and emotional activities amounted to 80.6. Based on the results of the research above, student activity through the lesson study-based PBL model can be categorized as high. This is inseparable from the collaborative role of lecturers in organizing learning, from planning to evaluation.



INTRODUCTION

Indonesia is currently intensively socializing the training model to improve the student learning process, and it has been practised in several schools so that it now tends to be applied to secondary and even higher education (Fernandez & Yoshida, 2012). Lesson study is a model of teacher competency development through a group of teachers' collaboration in improving classroom learning (Cheng, 2019). Lesson study practice encourages teachers to create an interactive learning process, inspirational, fun, innovative, motivating students for improvement, active learning, creative, and independent according to the talents, interests, and physical and psychological development of students and educators (Tosi et al., 2021).

The learning process is a system. Therefore, the achievement of process standards for improving the quality of education can be started by analyzing every component that can shape and influence the learning process. However, the factor that is believed to impact the educational process significantly is the teacher. This is quite obvious, and this is because teachers

lead and treat students directly as subjects and objects of learning (Leonard, 2016). There are two sub-activities, namely teachers and students. A teacher's main task and responsibility in learning are to manage to learn to be more effective, dynamic, efficient, and positive, characterized by awareness. The active role between the two learning subjects is the teacher as the initial initiator and director and conducts guidance, while students as the object to experience and are actively involved in gaining self-change in teaching (Nadiroh et al., 2021). Changes in students' behaviour and attitudes can affect the success of their studies and can even be used as indicators to determine the quality of higher education (Herawati, 2018). High-quality universities are one of the components of success can be seen from the percentage of student independence in learning.

The final result expected from the lecture process in higher education is independent students, including independent learning. Students are expected to depend on lecturers and be active in the learning process. Activeness is a motor in learning

activities; students are always required to actively process and process their learning results. To process and process their learning outcomes effectively, students need to be physically active, intellectually, and emotionally (Ghufron, 2018)

Lectures are also a learning process that cannot be separated from solving a problem. In the lecture process, one of the problem-solving that must be done is a group task, where in the group task, individuals are required to work together in a group with their colleagues. Group tasks are not the responsibility of one person alone but all group members' responsibility. Individuals involved in a group task are required to be active and contribute to the process of doing the task (Zulyusri & Dana, 2019).

In fact, online learning at Universitas Veteran Bangun Nusantara in the 2020-2021 academic year and learning activities in cooperation are not visible. This is shown in group members who are not really actively involved in the group task project or are not serious about work. Often individuals in the group rely on each other, and a friend in the group will do the task. This is

because several people are involved in group tasks and rely on each other's group members. Especially when implementing online learning today, no feature in collaborating groups.

Veteran Bangun Nusantara University (Univet Bantara) is one of the LPTK still implementing online learning until the first semester of 2021 /2022. The application of lectures in online learning uses blended learning. LMS platforms such as Univet, Zoom Meeting, or Google Meet. The use of the platform that has been provided is sometimes still not optimal for understanding the material and the number of assignments given to students, resulting in a less effective lecture process. This online learning also forms learning independence and also encourages interaction between students. As for lecturers, the online learning method is here to change the old teaching style, indirectly impacting work professionalism. Students' increasing role and activeness in the use of various media and technology for the success of online lectures are greatly influenced by the perceptions of each student.

Problem Based learning helps teachers develop thinking skills and problem-solving skills in students as they learn learning material (Nurlaily et al., 2019). This model facilitates students to play an active role in the classroom by thinking about problems related to their daily lives, finding the necessary procedures for finding needed information, thinking about contextual situations, solving problems, and presenting solutions to those problems (Costa et al., 2020)

Innovative models can make students play an active role and bring students to real-world experiences, one of which is the Problem Based Learning (PBL) model. Student learning activities can be seen when connecting their concepts based on their life problems with inquiry skills. It can be concluded that the PBL model can improve the rate of high-level learning (Santos et al., 2021; Zulyusri & Dana, 2019). More importantly, PBL focuses on what knowledge is acquired and how that knowledge is acquired. However, cooperation between participants, provision of real problems, and available activities and resources (Zulyusri & Dana, 2019).

In addition, the PBL model can increase student activity. This is shown when students conduct conceptual mapping of problem solving, organize existing problems, and present solutions that have been found by students. Students must communicate, discuss, disclose and report in the form of observation reports (Valdez Rojo et al., 2021).

The process of cooperation in solving problems is also found in the lesson study model. Lesson study can examine collaborative and continuous learning based on collegiality and mutual learning to build learning communities (Salmón et al., 2022).

Lesson study can describe the real situation based on the experience of the group of teachers. In this case, the focus on the problem to be solved is the student's problem during online learning. (Bautista & Baniqued, 2021) Therefore, this study aims to describe the analysis of student activities with the Problem Based Learning (PBL) model through lesson study in online learning.

METHOD

The research method used is qualitative descriptive. This study uses a Problem Based Learning model to describe student activities and work through Lesson Study with three phases: Plan, Do, and See. Empirical research aimed at implementing lectures, lecturers, and students involved in Lesson Study activities is examined as data sources.

The involvement of lecturers is as an observer in all lesson study activities, starting from a plan, do, and see. The lecturers involved provided a lot of input and suggestions on RPS and implementation so that there would be an increase in student activity. In addition, this lesson study activity involved several teachers at SD Negeri Sukoharjo 04. This aims as a teaching practitioner to provide input and suggestions for an overview of the implementation of thematic learning in elementary schools in real terms.

Meanwhile, educational activities will be carried out for students of Semester V-B of the Integrated Thematic Learning Course. Coaching and research on general subjects with

particular themes are carried out in three stages:

1. Planning the preparation of lesson plans and teaching materials (plan).
2. Implementation of SAP-based lectures (do).
3. Conducting reflective discussions (references) based on observation.

Data triangulation techniques were used in this study. The data analysis technique used is the Miles and Huberman model. The steps are data reduction, data presentation, and conclusions. For data reduction, researchers sort out data following the purpose of the study, namely the systematic arrangement and content in student activities during online learning. The validity of the data in this study used triangulation techniques. Observation, documentation and interview techniques carry out data collection. Student activities include oral, listening, writing, mental, and emotional activities.

In this study, the data will be displayed as numbers. To obtain the relative frequency/percentage number, a calculation is carried out using the formula as follows:

$$P = \frac{f}{N} \times 100$$

Description:

f = The frequency with which the percentage is being sought

N = Number of frequencies/
Number of individuals

P = Conservation Number

RESULT & DISCUSSION

Result

The initial condition of online lectures at Universitas Veteran Bangun Nusantara Sukoharjo is learning asynchronously through LMS Spada Univet Bantara, as for using Zoom Meetings or Google Meetings for synchronous learning activities. However, student activities in lectures are not paid enough attention to, so students become bored and tired with all assignments. The tasks given by lecturers are rarely given follow-up so that student learning activities in analyzing, giving suggestions, and answering lecturer questions are not visible. In UAS learning outcomes, students only copy answers from Google and never hone students analytical skills.

The lesson study includes 3 stages of activities, namely planning (Plan), implementation learning (Do),

observation and reflection (See). The details are as follows:

1. Plan

The implementation of the plan was carried out by a team of PGSD Univet lecturers Bantara Sukoharjo agreed on one lecturer to become a model lecturer. In this activity, a joint study was carried out on the design of planned lecture meetings and teaching materials, including RPS courses, materials that would teachable, model lecturers who will play a role, student activity sheets and evaluation instruments needed. Design lecture meetings that will be open lessons in integrated thematic learning courses. In this planning stage, lecturers who are the lesson study team members collaborate to compile RPS that uses an approach or focuses on students (student-centered learning). Good planning is carried out in collaboration between lecturers or between several lecturers with the help of other lecturers as resource persons to enrich ideas. With planning using a student-centred learning approach, students are expected to be able to participate actively.

The choice of the course is because students have yet to understand integrated thematic learning directly. As a result, during microteaching, students find it challenging to carry out integrated thematic learning. The thematic teaching course is a course that elementary school teachers need to help their students understand a concept while learning, especially media that can attract students' attention and active engagement.

Planning begins with activities to analyze the needs and problems faced in online learning, such as student boredom with too many tasks given by lecturers through asynchronous activities and the selection of online learning methods or models that do not involve students. As a result, students become bored listening to lecturers' lectures. The conclusion of the results of the needs and problems analysis should be a part that must be considered in the preparation of RPS so that it becomes a plan that can anticipate all possibilities that will occur during the implementation of learning, both in

the early stages, core stages to the final stage of learning. The assessment results are used for the necessary improvements to the learning plan prepared. Given the many problems commonly faced by lecturers, it is necessary to formulate strategies and priorities to overcome them. Which problem to solve first and which problem to solve next needs to be established.

In the Forum Group Discussion (FGD) activity about the teaching experience of lecturers on integrated thematic learning characteristics material. If there is a design for using teaching materials such as media and new Student Worksheets (MFIs), it is necessary to give advice first to the model lecturer who made the design. At this stage, resource persons can be brought in who will provide input to lecturers to improve the quality of problem-solving plans, especially in terms of the correctness of theoretical studies and the possibility of their implementation.

2. Do

At the implementation stage (do), model lecturers carry out

learning following the learning plan that has received joint assessment and improvement (revision) in accordance with suggestions and input. The implementation of this activity involves class teachers at SD Negeri Sukoharjo 04 acting as observers (other than model lecturers). Observation is aimed at student learning activities during lectures and documentation through photo and video recordings (audio-visual). Teachers of SD Negeri Sukoharjo 04 observed and recorded the findings of student activities during ongoing lecture activities. Then at the see stage, the report becomes a reflection material for model lecturers.

The learning activities applied are online learning. Asynchronous and synchronous activities last for 2 x 45 minutes process. So the learning model used is the Problem Based Learning model. The issue to be raised is a practice video as a case that must be analyzed by students about the characteristics of integrated thematic learning (<https://youtu.be/sP7i7SIoEOI>).

Learning activities use PBL learning steps: 1) Independent activities that include student orientation to problems. 2) Students form small groups to discuss problems and find solutions. 3) The provision of reinforcement is carried out by the lecturer, and the conclusion by the student.

Before the synchronous learning process, students carry out asynchronous learning through Spada Univet Bantara. Students observe the practice video of grade 1 thematic learning with the theme "My Activities" on the Univet Spada. Students conduct investigations (looking for data/references/sources) for group discussion materials based on video observations of learning practices. These individual observations' results will be discussed later through synchronous learning in the break-out room Zoom Meeting.

The synchronous learning process carried out by model lecturers must motivate students to acquire knowledge, understanding, and application as well as analysis or synthesis and integrate various

information. Ask students, "Have you ever observed learning? How is thematic learning happening now?" a student's answer will be written on Jambroad. The activity explores students' initial knowledge about the thematic learning process based on experience when observing classroom teachers. In creating learning that allows students to be actively involved in more than one activity, points become the subject of discussion in the break-out room Zoom Meeting, namely findings that are holistic, meaningful, and active findings in the Grade 1 Thematic Learning Practice Video with the theme "My Activities".

At the end of learning, students give conclusions that are meant by thematic learning characteristics in 4 aspects: holistic, meaningful, authentic and active. Furthermore, each group was given themes 1-6 in grade 1 to design learning steps based on thematic learning characteristics. The results of the design were then collected in LMS Spada Univet Bantara.

3. See

At the Reflection (See) stage, after the learning process ends, a Discussion Group Forum (FGD) is conducted. Reflection starts from conveying the impressions of lecturers who have practised learning by giving comments or general impressions or special impressions of the learning process they do, especially regarding the difficulties and problems felt in carrying out the RPS that has been prepared. In addition, focus on analyzing learning observation findings more analytically to find valuable solutions or lessons.

Table 1 Results of Conservation of Student Activities in the Learning Process

Types of Activities	Indicator	Student activities
<i>Oral activities</i>	Expressing an opinion	84,8
	Give advice	83,3
	Flexibility of attitude in the presentation of material	90,2
Average		86,1
<i>Listening activities</i>	Listen to a presentation	97,0
	listen to other people's opinions	95,5
Average		96,3
<i>Writing activities</i>	Write a report	95,5
	Completeness of the report	83,3

Average		89,4
Mental activities	Observe	95,5
	Analyze	76,5
Average		86
Emotional activities	Feel not bored	75,5
	Excited	85,6
Average		80,6

Based on observations on aspects of oral activities and listening activities, 86.1% and 96.3% of students were active in synchronous learning activities through zoom Meetings. Students held discussions in small groups to agree and equalize the findings in the practice video. The discussion can be seen when expressing opinions and giving advice to other students. Meanwhile, the flexibility of attitude in presenting the material when students present the results of the discussion in the main room at the Zoom Meeting. In addition, student ethics expressed opinions on Jamboard seen diverse opinions about thematic learning based on the experiences of individual students.

Students analyze the findings of learning activities that have been carried out holistically, actively, and meaningfully or not. Then the

results of his observations were written on the MFI at the LMS Spada Univet Bantara. The result from exposure of each group and assessment of reports collected through Spada Univet.

Mental activities can be seen when filling out Student Worksheets (MFIs). This can be seen in the aspect of mental activities 86% and writing activities by 89.4%. While the emotional activity aspect showed an average of 80.6%, it was seen that 19 out of 32 students were still enthusiastic about participating in learning at Zoom Meetings; the discussion process also went well even though it did not there are model lecturers in each room.

Based on the results of see activities, lecture activities in the following material are more focused on variations in learning models so that student activities in the emotional activity aspect can increase. The problems displayed in the next learning must be more able to make students challenged and curious in finding solutions based on student data collection. The use

of media is also able to provide a more pleasant atmosphere.

Discussion

Student activity in online learning can show varying results. This means that research results cannot be generalized to all levels and conditions of the learning environment. This is influenced by several factors, such as lecturer teaching competence in online learning and the ability of lecturers to monitor student activities in the learning process; students need Direct verbal explanation from the lecturer. Therefore, it is also important for lecturers to create a pleasant learning atmosphere by changing learning models, methods, and others (Septiani & Morning, 2021). Learning activities appear in several learning activities in the aspects of oral activities, listening activities, writing activities, mental activities and emotional activities (Afiani & Faradita, 2021; Jayusman & Shavab, 2020).

Implementing the PBL model begins with criticizing the implementation of thematic learning at SD Negeri Sukoharjo 04. Students can solve problems in thematic learning to make solutions. The presentation and

analysis of the work of students are then presented. In the process of solving these problems, train students in skills to solve problems, think critically and acquire new knowledge (Aziz et al., 2016).

Based on the study's results, the average student activity in each spec was oral activities 86.1, listening activities 96.3, writing activities 89.4, mental activities 86 and emotional activities 80.6.

Student activities in the oral activities amounted to 86.1; this was seen when the presentation material activities and dared to ask questions related to material that had not been understood from thematic learning practice videos in elementary schools. In the evaluation stage in the PBL model, activities in students submit opinions during presentations. During online learning using LMS, only three students commented on problems, but when synchronous, students can directly express their opinions. This is in line with the fact that the PBL model can improve communication skills in students (Najah et al., 2019)

In the aspect of listening activities, the indicator observed is listening to the

presentations and opinions of others. Students can listen to the results of the analysis by matching the results of the study to their groups through the listening process when students carry out group discussions and presentations of discussion results and respond to other friends' opinions. In the discussion process, students listened more to the opinions of other students (Febiyanti et al., 2021).

In indicator aspect writing activities, students record important things related to implementing thematic learning on video. In addition, write a practice video analysis report. The results of the discussion can be submitted in the discussion report on the student worksheet (Zulyusri & Dana, 2019).

The mental activity was observed, namely that students could solve and analyze the problem in practice videos at SD Negeri Sukoharjo 04. Students' critical thinking skills in problem-solving on thematic learning characteristic material. At the beginning of learning, lecturers explain thematic learning problems in elementary schools, and students can criticize whether or not they are appropriate for

the teaching carried out by the teacher Curriculum 2013. In addition, when observing and analyzing integrated thematic learning practice videos in grade 1 on the theme "My Activities", students can find activities based on characteristics of online learning.

Indicator emotional activities show that students are excited and dare to express every idea. So far, students have dared to express their opinions. However, students feel bored with writing opinions in the system when implementing learning through LMS.

Improving the quality of the learning process is characterized by student learning activities. Judging from the increasing number of active students, lectures are not boring because most students are seen to be enthusiastic about learning. The need for collaborative learning development will result in a maximum learning process. For lecturers, they can collaborate with peers to improve learning. Developing teaching models and materials is very important for lecturers to improve student activities (Murtisal et al., 2017). In addition, the increase in student activity in the learning process can be seen from the

planning and implementation carried out by lecturers.

This can be done *through* lesson study learning, in addition to improving the quality of learning while also fostering aspects of good cooperation in a team in the course Thematic and integrated learning. This can be seen from the responsibility in decision making, not separating yourself from others, interaction with learning resources, the interaction between students, completing activities problems and students are not passive (Rozimela, 2020). In the lesson study activities, lecturers make preparation (plan), implementation (do), and reflection (check or see) (Wood & Cajkler, 2018). Lecturers can find valuable input submitted during discussions in this follow-up stage can be capital for lecturers when teaching or become an observer lecturer to develop the learning process in a better direction (Prayejti & Rasyimah, 2012; Wiharto, 2018).

CONCLUSION

Based on the results of the research and discussion above, it can be concluded that the profile of student learning activities in carrying out online

learning through the Problem Based Learning (PBL) model gets average student activities in each spec are oral activities of 86.1, listening activities of 96.3, writing activities of 89.4, mental activities of 86 and emotional activities of 80.6. The level of student activity can be categorized as high, inseparable from the collaborative role of lecturers in organizing learning, from planning to evaluation. Collaboration is established in lesson study activities.

Based on the conclusions, it is recommended that learning design pay attention to student activities. Increased learning activities will also increase the quality of learning. The quality of learning can be improved through lesson study. The team of lesson study participants increased exercises for lectures and other materials. Therefore, leadership needs support so that lesson study activities become better and student learning outcomes can increase. In addition, similar research can be continued against other study programs so that the quality of learning in Higher Education and the quality of lectures can be even.

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