

# Schoology:

# A Technology to Improve Learning Outcomes During the Covid-19 Pandemic

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Abstract—The background of this research is the learning outcomes of students in primary school teacher education decrease, so that needs some efforts to improve it during the Covid-19 pandemic. This study aims to improve the learning outcomes of students of primary school teacher education by using Schoology learning media technology. This research is a classroom action research using Mac Taggart's design, namely planning, implementing, observing, and reflecting. This research shows that there is an increase in student learning outcomes using Schoology learning media technology, namely getting a score of 69.64 for cycle 1, and getting a score of 83.67 for cycle 2. This score proves that using Schoology can improve student learning outcomes in the PSTE department during the Covid 19 pandemic. The implication of this research is as a reference in developing learning during the Covid 19 pandemic.

Keywords—schoology, technology, outcomes, pandemic, covid-19

## I. INTRODUCTION

The Covid 19 pandemic has a significant impact on living systems [1]. The Covid 19 pandemic requires individuals to maintain their distance and no physical contact between individuals. This rule affects human life systems, including the learning process in the education system [2]. During the Covid 19 pandemic, the Indonesian government instructed the learning process not to be face-to-face [3]. This instruction aims to avoid the spread of the covid 19 viruses. This instruction applies to every level of education, both formal and non-formal, including in the learning process in higher education. Therefore, teachers have a big responsibility for achieving learning objectives.

This instruction means that there is no direct interaction between students and teachers during the learning process. Teachers must create non-face-to-face learning innovations. This innovation is related to technological systems [4]. The learning process can be implemented with a technology system [5-6]. This system is not a difficult thing to do in Industry 4.0. The learning process in Industry 4.0 has required teachers to develop technology-based learning innovations [7-11]. Therefore, during the Covid 19 pandemic, teachers should be able to advance technology-based learning. One of the technology-based learning processes is the online learning process. Online learning is carried out without a face-to-face process between teachers and students [12-13]. This online learning process is carried out with the help of technology, namely a digital classroom system. Consequently, even though there is no face-to-face system between teachers and students, learning will continue to run [14]. Therefore, online learning is one of the learning innovations during the Covid 19 pandemic, including the learning system in universities. However, based on a literature review, the learning process during the Covid 19 pandemic was not carried out properly [15-18] in university.

To find out the learning process during the Covid 19 pandemic, researchers conducted observations in the department of Primary School Teacher Education at Samudra University. Observations were made by observing the teaching activities of the lecturers. Based on these observations, lecturers in the PSTE department use the Whatsapp group application as a means of the learning process. Besides, there are also lecturers using the zoom meeting application. To strengthen the results of observations, researchers conducted interviews with lecturers at the PSTE department. The results show that many lecturers carried out the learning process by distributing teaching materials through WhatsApp, and then the lecturers gave assignments. The lecturer stated that the learning process was ineffective because the assignments made by students were not as expected. Besides, some lecturers also use the zoom application. Many lecturers stated that the zoom application could not be carried out continuously because this application would require a fairly strong internet connection. If the signal range is not strong, the learning process will be hampered. The lecturer also stated that the learning process using the WhatsApp and zoom application was not maximally used, and it caused a decline in student learning outcomes.

Based on the researcher's analysis, the learning process carried out by lecturers during the Covid 19 pandemic was not following learning characteristics. Whatsapp group is not a digital class recommendation but as a means of communication. Besides, Whatsapp is unable to provide and facilitate features that can create a learning atmosphere. Likewise, with the zoom application. Zoom application aims to carry out meetings and conferences. So, it is not right if it is used continuously as a learning tool. Besides, the zoom application is quite costly. This problem must be resolved immediately because it relates to student learning outcomes.

After the researcher conducted the analysis, the researcher invited the lecturer to make improvements to the problem. Based on the discussion, it is necessary to improve the learning process carried out during the Covid 19 pandemic. The improvements made are reflected in classroom action research. One of the right solutions in overcoming this problem is by implementing learning using a learning management system (LMS). LMS is a software application that can help to plan and implement a learning process. LMS allows the owner or course maker (teacher) to manage, deliver, and monitor their students [19]. LMS is a means of creating a digital classroom that allows the virtual learning process to occur. One of the LMS for the Covid 19 pandemic is Schoology. Schoology is free of charge. Schoology facilitates students to download subject matter, take quizzes, exams, discussions, and collect assignments given by the teacher [20-21]. Many studies have stated that Schoology is suitable for use during the Covid 19 pandemic because it can carry out the learning process anywhere and anytime with an internet connection [22-23].

The researcher will carry out classroom action research to improve student learning outcomes during the Covid 19 pandemic using Schoology media.

## II. RESEARCH METHODOLOGY

This research is classroom action research. Classroom action research aims to overcome the problems faced by teachers in the classroom learning process [24]. This aim is following the research objectives, namely to improve student learning outcomes, which were still low, during the Covid 19 pandemic. This classroom action research used Mac Taggart's design consisting of planning, implementing, observing, and reflecting. At the planning stage, the researcher arranges everything needed during the research. At the implementation stage, the researcher carries out research based on the planning designed. At the observation stage, the researcher observes the learning process, the lecturer activities, the student activities, and the learning outcomes. At the reflection stage, the researcher conducted a review of the learning process implemented.

This research was conducted in class unit 2, fifth semester, majoring in PSTE, Samudra University, with a total of 30 students. This research was conducted in 2 cycles. Data collection techniques used teacher and student observation sheets in the form of checklists and learning outcomes tests.

The data analysis technique consisted of Analysis of classical learning completeness and analysis of individual activities. The formula is as follows:

• Analysis of Classical Learning Completeness

#### Annotation

NP =  $R/SN \times 100$ 

NP = Percentage value

R = The number of students with a score of  $\geq 76$ 

SN = The total number of students.

Analysis of Classical Learning Completeness

Pa = A/N X 100

- Pa = Percentage value of process skills
- A = Number of values reached
- N = Total number of full marks

This research is successful if:

- The average grade learning outcomes obtained  $\geq 76$
- There is an increase in the activities of teachers and students with a final score of  $\ge 76$
- There is an increase in students' scientific literacy

# III. RESULTS AND DISCUSSION

The first activity carried out in this study is the planning stage, which consists of arranging a lesson plan implementation. The preparation of this lesson plan aims to become a guide for lecturers in carrying out improvement activities. This lesson plan is completed by following the procedure using an LMS. Besides, teachers and researchers also prepare the teaching materials, discussion materials, and project materials. Also, lecturers and researchers arrange guidelines for observing aspects of lecturers and students using Schoology and test sheets. After arranging the plan, then the research implementation process is carried out.

At the beginning of the activity, the lecturer asked students to log in to Schoology. The lecturer asks students to fill in the absences. Then, the lecturer asks students to read the teaching materials and learning videos provided by the lecturer. Lecturers provide discussion topics and ask students to respond through the discussion forum feature. After that, the lecturer asks students to work on a project on the assignment feature. The lecturer asks students to present their projects by sending a presentation video to the LMS. At the end of the activity, the lecturer asks students to open the test feature to evaluate learning.

During the implementation process, an observation process is also carried out. Observations were made by peers. The score for the lecturer activity was 67.89, and the score for the student activity was 66.87. Besides, learning outcomes get an average score of 69.64.

Furthermore, the reflection process is carried out. The reflection stage aims to review the activities carried out. From the observations, the final score has not reached the success indicator with a low category. Based on field notes, lecturers do not guide and motivate students to carry out discussions and work on projects. Consequently, students are slow to give

comments and implement projects. Besides, in the process of project activities, students do not actively find information from various learning sources. The results of this note will be updated in the next cycle. Lecturers must pay more attention, guide, and motivate students to carry out discussions and work on projects. Due to bad results of reflection, the teacher and researcher agreed to continue the research in the second cycle.

The first activity carried out in this second cycle was arranging lesson plans, teaching materials, discussion materials, and project materials. Besides, lecturers and researchers also arrange guidelines for observing aspects of lecturers and students in carrying out learning using Schoology and test sheets. After arranging the plan, the research implementation process is then carried out.

The learning implementation is following the lesson plan developed. At the beginning of the activity, the lecturer asked students to log in to Schoology. The lecturer asks students to fill in the absences. Then, the lecturer asks students to read teaching materials and learning videos. Lecturers provide discussion topics and ask students to respond through the discussion forum feature. In this activity, the lecturer stimulates, motivates, and directs students to be actively involved in the discussion.

After that, the lecturer asks students to work on a project on the assignment feature. Lecturers provide direction to students about projects and guide students online. The lecturer asks students to present their projects by sending a presentation video to the LMS. At the end of the activity, the lecturer asked students to open the test feature to evaluate learning.

During the implementation process, an observation process was also carried out. Observations were made by peers. Based on the observations, the score for the lecturer activity was 85.67, and the score for the student activity was 88.78. Besides, learning outcomes get an average score of 83.67.

The next stage is the reflection stage, which aims to review the activities carried out. From observations, the final score had reached the indicator of success. In conclusion, there was an increase in student learning outcomes using Schoology media during the Covid 19 pandemic. The research summary graph can be seen in the graph below



Fig. 1. The results of study.

From the Figure 1, there is an increase in lecturer activity, student activity, and learning outcomes. Research has shown an increase in student learning outcomes using Schoology during the Covid 19 pandemic. Schoology is one of the LMS as a means of digital classrooms [25]. Schoology can improve

student learning outcomes because it has more advantages than group WhatsApp and zoom applications. Schoology can create learning outside the classroom [26]. This advantage is following the conditions of the Covid 19 pandemic. Schoology can also create online learning. This is following the characteristics of students in industry 4.0, who like technologybased learning. Schoology can present a process of discussion, project, and evaluation using a technology system [27]. Besides that, Schoology has many interesting features and functions for students [28]. Schoology provides teaching materials in the form of video, audio, and images that can attract students' interest and encourage students to use technology in learning. Schoology also provides a blog facility to facilitate users who want to post blogs on Schoology accounts [29]. In particular, Schoology also has a feature to send letters/messages via direct post, so that you can send letters anywhere through the available massage facilities [30]. This feature facilitates the communication process to lecturers and fellow students. In conclusion, Schoology can become an alternative technology in the learning process during the Covid 19 pandemic.

#### IV. CONCLUSION

This research shows that there is an increase in student learning outcomes using Schoology learning media technology, namely getting a score of 69.64 for cycle 1, and getting a score of 83.67 for cycle 2. This score proves that using Schoology can improve student learning outcomes in the PSTE department during the Covid 19 pandemic. The implication of this research is as a reference in developing learning during the Covid 19 pandemic.

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