EFFECTIVENESS OF DISTANCE LEARNING SYSTEM IMPLEMENTATION AT VOCATIONAL SCHOOL IN BANDA ACEH

Yusran Asnawi
Ar-Raniry State Islamic University, Indonesia
yusran@ar-raniry.ac.id

Azizah Lubis
Ar-Raniry State Islamic University, Aceh Provincial Education Office, Indonesia
azizah12lubis@gmail.com

Nurul Fajri
Ar-Raniry State Islamic University, Indonesia

Wiwin Antariyani
Aceh Provincial Education Office, Indonesia
wiwinantariyani@gmail.com

Abstract

This study aims to analyze the effectiveness of the implementation of the Distance Learning System (DLS) for students at Vocational School in Banda Aceh during the Covid-19 pandemic. This study uses descriptive qualitative methods, with the population of all XII graders from the Software Engineering Department (SED), while the sample is the XII SED 1 class students, totaling 27 students. The instruments of this research are interview questionnaires conducted to 10 teachers of productive subjects and questionnaires distributed to 27 students of class XII SED 1 online using Google Form. The results showed that many teachers said that DLS System was not effective to be applied in vocational schools, as well as the results of the student response questionnaire that there were many shortcomings in the implementation of DLS. Furthermore, the researchers suggested that the blended learning method be applied for Vocational School.

Keywords: *Covid-19, Distance Learning, Vocational High School*

INTRODUCTION

Indonesia is experiencing problems in the learning process. The problem that occurs now is the outbreak of *Coronavirus disease* (COVID-19), this has resulted in the quality of Indonesian education experiencing quite serious challenges (Indonesia, 2020). This applies to all central and provincial governments, including the Aceh government. To optimize learning during the pandemic, the central government through the Instruction of the Minister of Education and Culture through its circular number 4 of 2020 concerning the teaching and learning process must be carried out online or the Distance Learning System (DLS)[1].

This outbreak also caused the emergence of new problems experienced by Vocational Schools. Because the learning system at Vocational Schools has more practicum learning time

[1] Indonesia, S. K. (2020, April 22). *"'Social' and 'Physical Distancing' Policies Must Involve Figures Up to RT/RW,"*. Retrieved from Cabinet Secretariat of the Republic of Indonesia.

than learning in the classroom[2]. This is because Vocational Schools students are better prepared to be able to work in certain fields and are expected to be more professional when working when entering the world of work[3]. And it was a challenge for the institution because at that time learning was carried out by distance learning system (DLS).

This DLS resulted in productive lesson teachers having to change practicum learning, which is usually done face-to-face, now it must be done virtually (online). Since the enactment of DLS, many teachers of productive subjects in several vocational schools have begun to implement online practicums or known as virtual practicums, including Vocational School in Banda Aceh. This school has 3 majors in which in each department there are productive lessons that have a practicum schedule in each lesson.

The teachers of productive subjects said that there were only a few students who participated in the virtual practicum, besides that student also complained about the lack of understanding in understanding the material given during the virtual practicum, this is because the teaching aids commonly used at the time of the practicum are not owned by every student, so this causes students to have difficulty in understanding the material given during the virtual practicum.

This is the basis for the author's interest in conducting research on Vocational School students as subjects in the research and choosing Vocational School in Banda Aceh as a research place to follow up on these problems, with the aim of knowing how the DLS System is implemented at Vocational School in Banda Aceh.

METHOD

This research uses a qualitative method with a descriptive approach that is commonly used to examine the status of a group of humans, an object, a set of conditions, a thought system, or a class of events in the present[4]. This method is an analysis, exposure, description and summary of conditions, situations and data obtained in the form of interviews or observations about the problem under study[5].Meanwhile, the data collection of this study was carried out online. This study aims to explain, analyze, and explain the application of the DLS System applied by all teachers at Vocational School Negeri 5 Telkom Banda Aceh so that the effectiveness of the DLS System can be known in this school.

In this study, the research instruments are as follows:

- The questionnaire used *a Google Form* to see the responses of the students to the implementation of the DLS System at Vocational School in Banda Aceh.
- Interviews were with 10 teachers of productive lessons who applied the DLS System to obtain data from this study.

Student Practice Exam results before and after the application of DLS from two subjects, namely Dynamic Web Programming (DWP) and Object-Oriented Programming (OOP).

In addition, in this study, observations were made on the application of the DLS System running at Vocational School in Banda Aceh with the aim of directly seeing the teaching process of teachers who apply this method, such as observing the interaction process that occurs between teachers and students online and seeing

[2] Hanum, N. S. (2013). Effectiveness of E-Learning as a Learning Medium (Evaluation Study of E-Learning Learning Model of Telkom Sandhy Putra Purwokerto Vocational School). *Journal of Vocational Education, 3*(1), 90-102.

[3] Jaya, H. (2012). Development of Virtual Laboratories for Practicum Activities and Facilitating Character Education in Vocational SchooL. *Journal of Vocational Education, 02*(1), 81-90.

[4] Nazir.Mohammad, P. (2011). *Research Methods.* Jakarta: Ghalia Indonesia.

[5] Sukmadinata, N. S. (2011). *Foundations of the Psychology of the Educational Process.* Bandung: Juvenile Rosdakary.

the activities carried out while the online learning process is being carried out, namely:

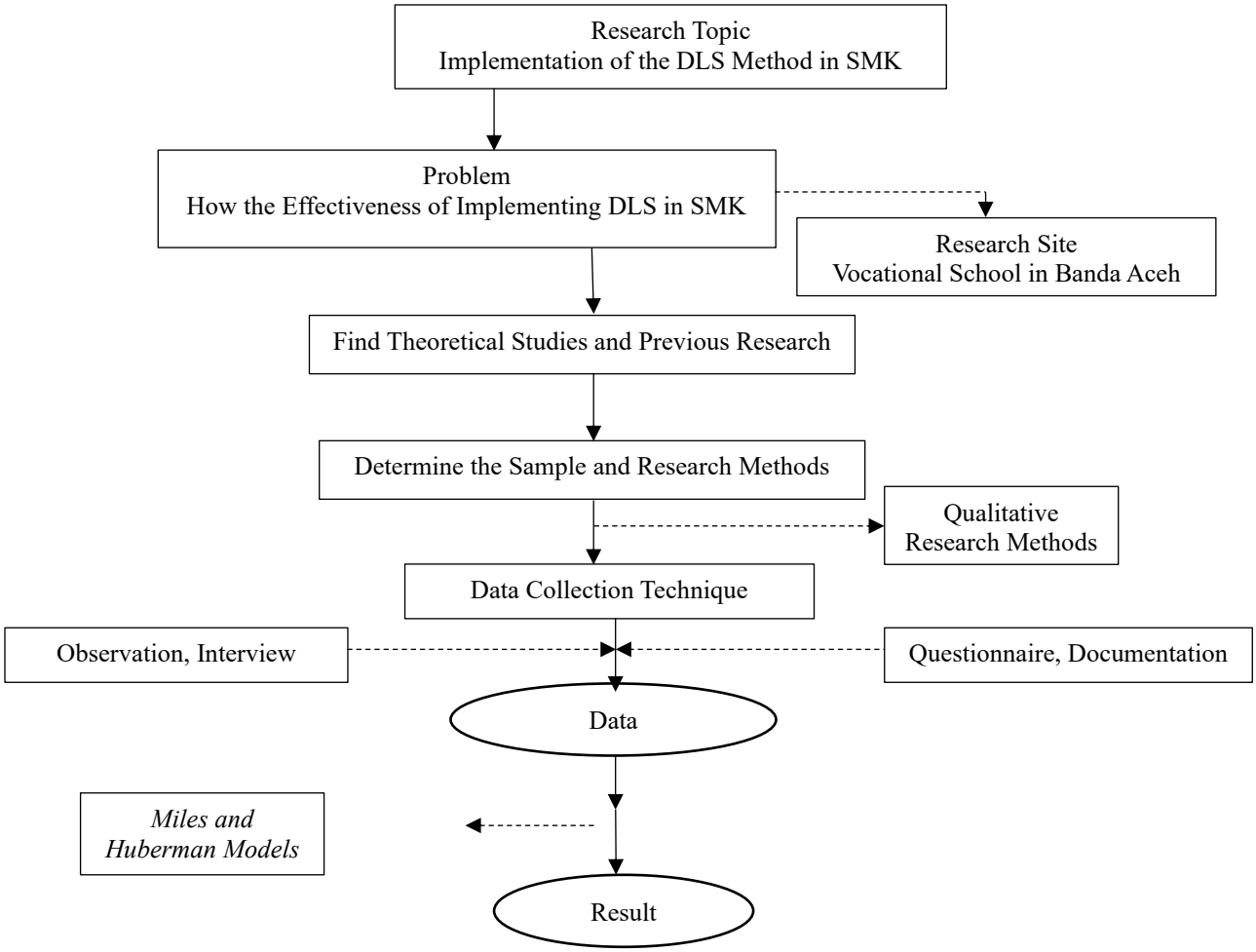

Figure 1. Stages of Research

In this study, data analysis techniques used the steps proposed by Miles and Huberman[6], namely:

- Data collection, the research data in question is the result of interviews, observations, and documentation on the application of the DLS System at Vocational School in Banda Aceh.
- Data reduction, during interviews with several teachers, a note is made containing the answers to the questions that want to be asked of these teachers. In addition, the results of the questionnaire, which contains answers from students and parents of students at Vocational School in Banda Aceh, are combined into *an excel* table so that it is easy to sort out the same answers to be converted into diagrams of these answers.
- The presentation of data, which is presented in the form of narrative text, in addition to the presentation of data is also displayed in the form of diagrams and tables to explain the results of the process of implementing the DLS System in students at Vocational School in Banda Aceh.
- Drawing conclusions, processing research data is by providing meaning or interpretation of arguments on the collected data and looking for the meaning of the explanation to be compiled into diagrams so that they are easily understood by readers. After that, the data is connected and compared with each other so that it

[6] Sugiyono. (2008). *Quantitative, Qualitative and R&D Research Methods.* London: Alfabeta.CV.

is easy to draw conclusions as the correct answer to every research problem, which is related to the application of this DLS System.

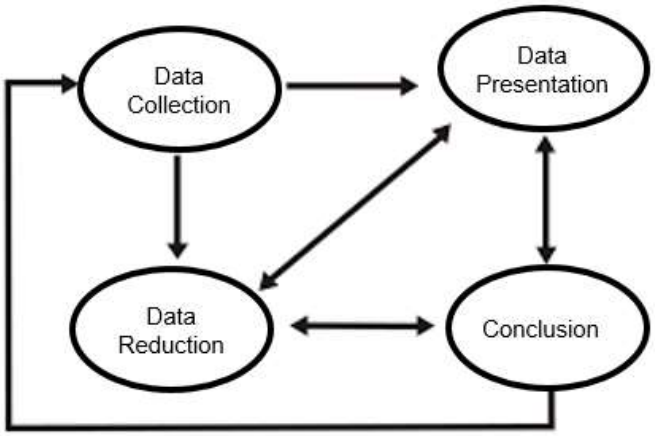

Figure 2. Miles & Huberman Data Analysis Techniques

RESULTS AND DISCUSSION

a. Observation Results

From the results of school observations, information was obtained that teachers in the school carried out online learning using several learning applications, as shown in Table 1. The activities carried out by teachers during online learning take place, as follows:

- Teachers upload or send learning materials to the app
- Teachers provide solutions for students who have difficulty not having facilities or difficulty understanding the material when studying from home.
- Teachers manage online classes.
- Teachers as facilitators of online learning
- Teachers prepare online learning evaluation materials.
- The teacher corrects the work of the learners.
- The teacher uploads or sends the evaluation results to the learners.

Table 1. Applications that teachers use for DLS.

No	Classification	Platform			
		Classroom	Zoom	WhatsApp	Edmodo
1	Productive Teacher	17	1	17	0
2	Non-Productive	26	10	26	1
Total of Productive Teacher					17
Total of Non-Productive					26
Total					**40**

b. Interview Results

The results of the interview said that the application of DLS is not suitable to be applied to productive subjects, because at the time of practicum the teacher will practice the practicum activities of the lesson in front of the students in accordance with the subjects taught. Meanwhile, students must be able to practice practicum activities that have been taught by previous teachers.

However, because the learning process is carried out online, teachers and students have difficulties during practicum because students do not have components for practicum and teachers have difficulty in providing direction to students during practicum and teachers have difficulty supervising students during online practicum.

c. Questionnaire Results

Data collection with *a google form* questionnaire was distributed to class XII students in the SED department, precisely in class XII SED 1 at Vocational School in Banda Aceh. The research questionnaire link is shared *Online* to the students who sampled the research. The questionnaire link was distributed to all students in class XII SED 1 which totaled 27 students, then the questionnaire returned by students totaled 26.

After the data is collected, then data reduction/data sorting is carried out on the results of the questionnaire by grouping student responses into a new, more neatly arranged table and eliminating some data that is not really needed for this study. After the results of the questionnaire data are sorted, the data obtained from sorting the data made into a table.

Based on questionnaire data, information was obtained from respondents that students of Vocational School in Banda Aceh started learning online in March 2020, then online learning for 6 days per week and online learning was carried out 6-8 hours per day. In addition, students take part in online learning using *the Google Classroom*, *Edmodo* and *Zoom* applications. Then there was also a response from class XII SED 1 student regarding the advantages and disadvantages / obstacles of students during online learning, the results can be seen in the diagram as follows:

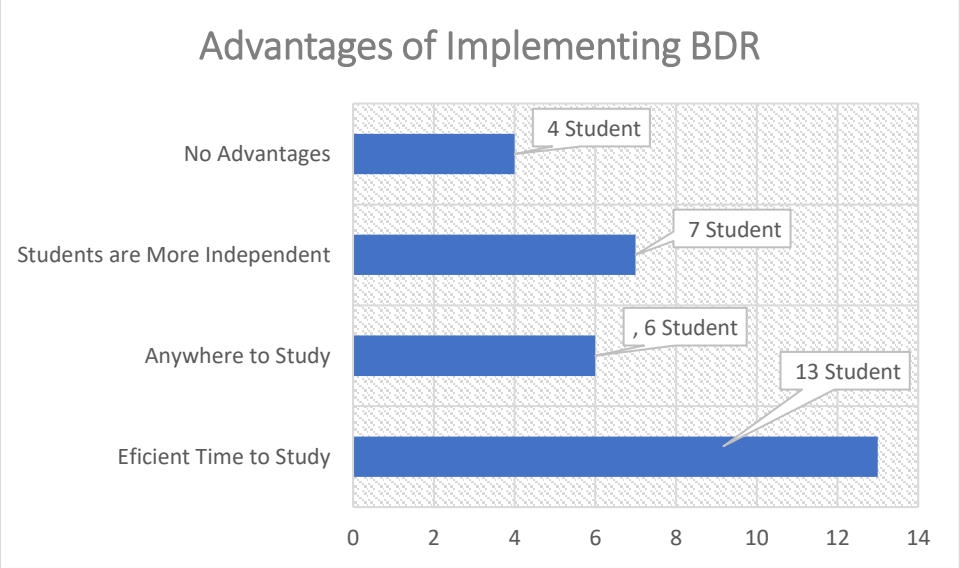

Figure 3. Advantages of implementing DLS

In the diagram above, the advantages of applying DLS only have as many as four reasons for the advantages of DLS. This amount is less when compared to the shortcomings of the following DLS applications.

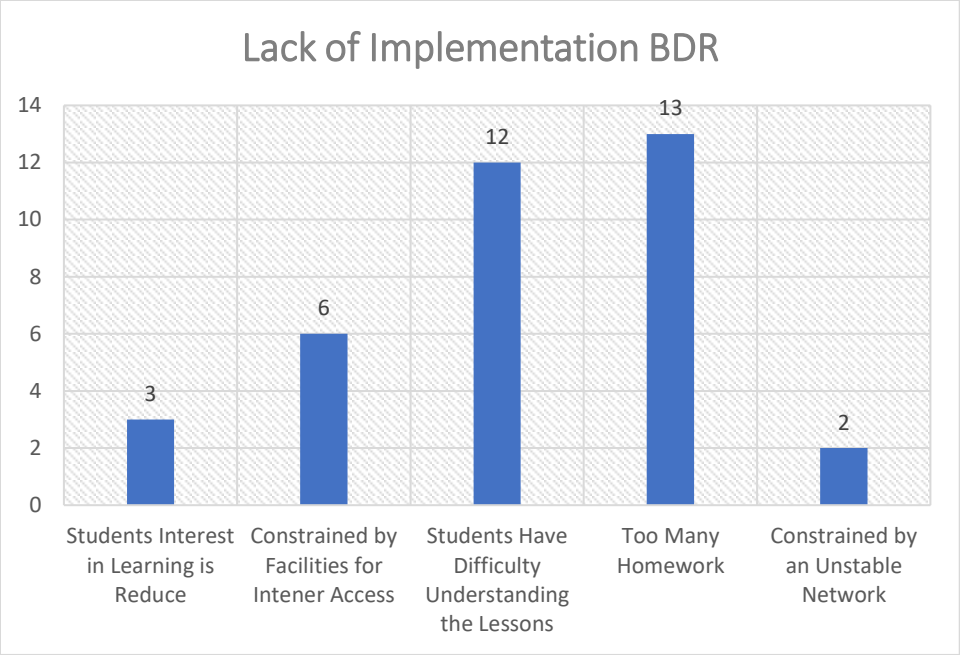

Figure 4. Disadvantages of implementing DLS

According to the diagram above, the disadvantages of applying DLS have more points than the advantages of applying DLS. The deficiency diagram of the application of DLS has five points of reason for its lack based on the responses of students of class XII SED 1 regarding the shortcomings of the application of DLS in the previous table.

Then in the diagram of the shortcomings of applying DLS, it is known that on the reason for too many homework assignments, it has the most reasons that students fill in, namely as many as 13 student responses. Meanwhile, in the diagram of the advantages of applying DLS, the reason for efficient learning time that most students fill is 13 student responses.

So based on the two diagrams, it can be concluded that the application of DLS for students at Vocational School in Banda Aceh has advantages that can make students have efficient learning time and can be done anywhere. However, the application of DLS still has many shortcomings and obstacles that students experience during this DLS learning process.

d. Student Exam Results

The student exam result data used as a research sample is the data on the results of the SED student practice exam with the subjects of Dynamic Web Programming (DWP) and Object-Oriented Programming (OOP) from 27 SED students who took the practicum exam.

- Dynamic Web Programming (DWP) Lessons

The following is a diagram of the percentage of student indicator achievement for PWD lessons before the implementation of DLS and after the application of DLS at Vocational School in Banda Aceh.

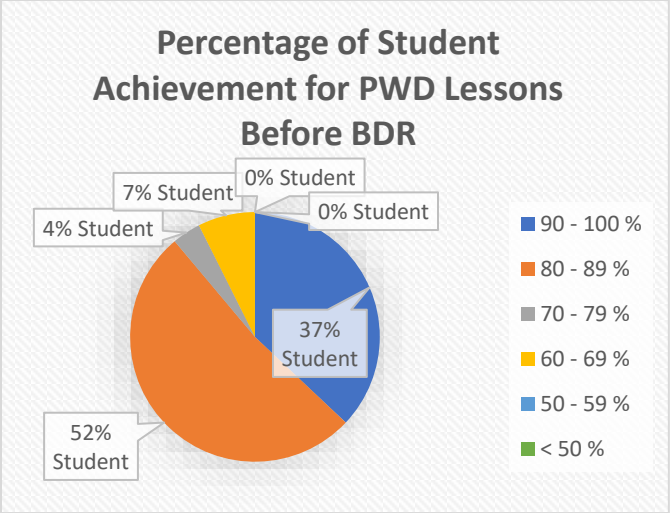

Figure 5. PWD Lesson Achievement Scores Before DLS

At the time before the implementation of DLS, students who achieved assessment indicators were more than 90%, namely 37% of 27 students. Students who can achieve more than 80% of the assessment indicators have the highest number, which is 52% of the 27 students. Then, the students who achieved the assessment indicators were less than 70% only 11% of the 27 students.

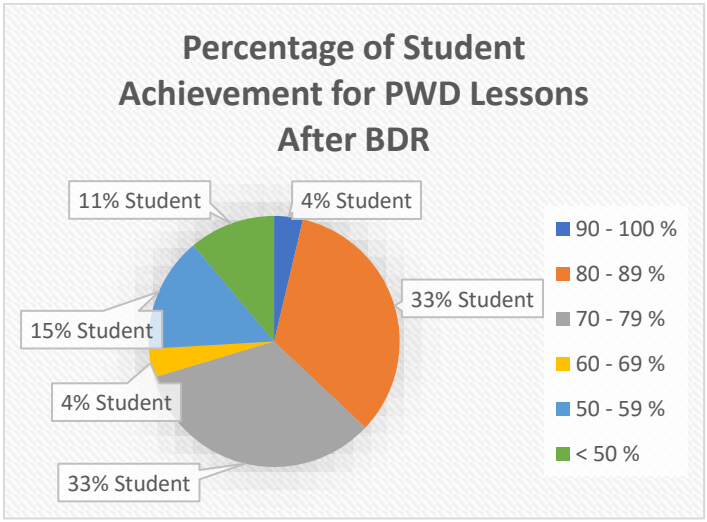

Figure 6. PWD Lesson Achievement Scores after DLS

However, after DLS was applied, students who achieved the 90% assessment indicator decreased by 32% so that the number was only 4% of 27 students. Students who achieved assessment indicators of more than 80% also experienced a decrease in numbers to 33% from 27 students. Meanwhile, the number of students who achieved assessment indicators of more than 70% increased by 22% so that the number became as many as 33% of 27 students, this number is as many as students who achieved the 80% assessment indicator.

In addition, based on the diagram above after the application of DLS, there were students who only achieved an assessment indicator of less than 50%, which was 11% of 27 students. Whereas before the implementation of DLS, none of the students achieved an assessment indicator below 50%.

- Object-Oriented Programming (OOP) Lessons

The following is a diagram of the percentage of student indicator achievement for PBO lessons before the implementation of DLS and after the application of DLS at Vocational School in Banda Aceh.

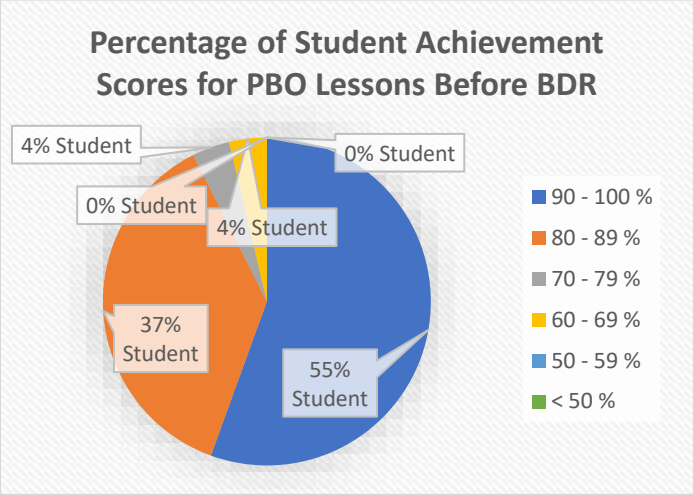

Figure 3. PBO Lesson Achievement Scores Before DLS

It can be seen in students who achieved assessment indicators of more than 90% as many as 55% of 27 students, this is the student's achievement score before the application of DLS. In addition, before the implementation of DLS, students who achieved an assessment indicator of 60% were only 4% of 27 students.

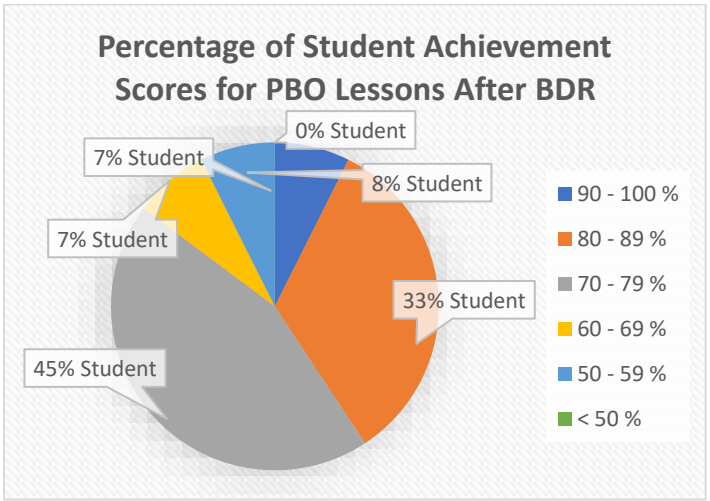

Figure *9*. PBO Lesson Achievement Scores After DLS

After the implementation of DLS was carried out, students who achieved assessment indicators of more than 90% experienced a decrease in the number only to 8% from 27 students. In addition, after the implementation of DLS, the number of students who reached the 60% assessment indicator increased in number, namely to 7% from 27 students. There are even 7% of students out of 27 students who only achieve assessment indicators below 60% which is only 50-59%.

So, based on the difference in the results of student achievement scores from the two subjects, it was found that many students who achieved KKM scores also experienced differences. The Minimum Completion

Criteria (KKM) is the lowest completion score to state that students achieve completion of one subject [13]. As for the Dynamic Web Programming (PWD) and Object-Oriented Programming (PBO) lessons, the KKM score that a student must achieve is 75.

- PWD Lessons

The following is a diagram of the percentage of the number of students who reach KKM before and after the application of DLS for PWD lessons at Vocational School in Banda Aceh.

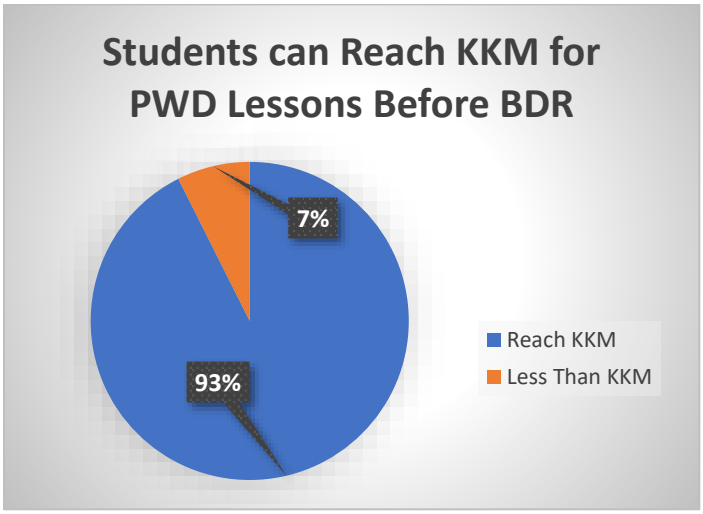

Figure 4. Achievement of KKM PWD Lessons Before DLS

The diagram above shows the difference in the number of students who reached KKM in PWD lessons before the implementation of DLS as many as 93% of students from 27 students, while after the application of DLS, students who reached KKM decreased to as many as 63% of students from 27 students.

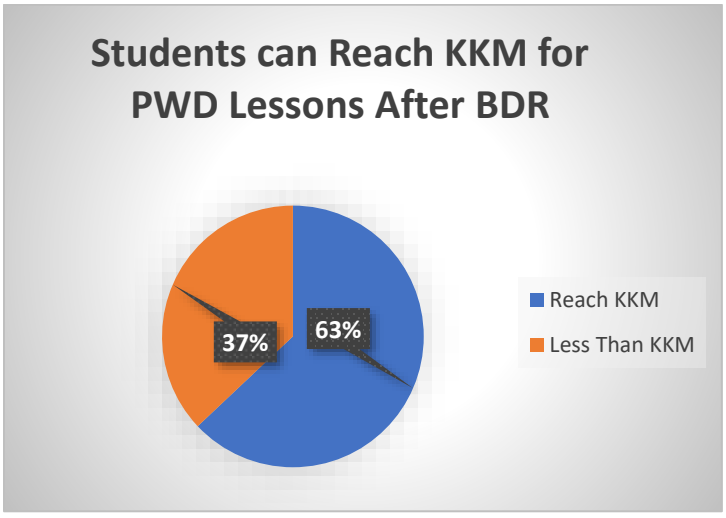

Figure 5. Achievement of KKM PWD Lessons After DLS

After the implementation of DLS was carried out by students who were less than KKM experienced an increase of 37% of students from 27 students, this number was more than the number of students who were less than KKM before the implementation of DLS which was only 7% of students out of 27 students.

- PBO Lessons

The following is a diagram of the percentage of students who reach KKM before and after the application of DLS for PBO lessons at Vocational School in Banda Aceh.

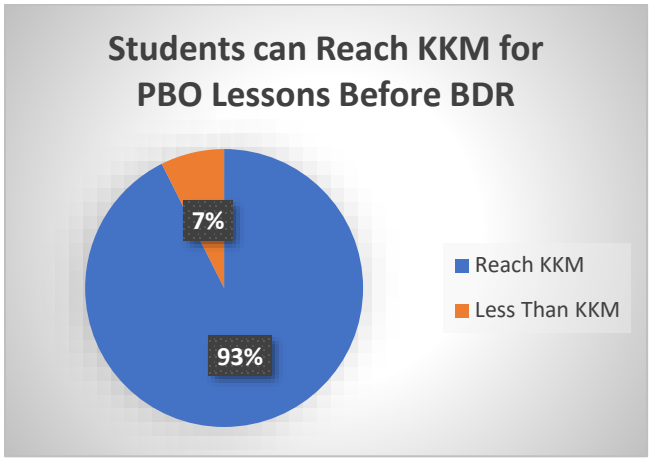

Figure 6. Achievement of KKM PBO Lessons Before DLS

The diagram above shows students who achieved KKM in PBO lessons before the implementation of DLS as much as 93% of 27 students while after the application of DLS experienced a decrease in the number of students to 81% of students from 27 students.

Then, for students who were less than KKM before the implementation of DLS, only 7% of students from 27 students, this is different from the number of students who are less than KKM after the implementation of DLS, which is as many as 19% of students from 27 students. This number is more when compared to before the implementation of DLS was implemented at Vocational School in Banda Aceh.

Based on the data on the results of student practice exams from these two lessons, it can be concluded, that this DLS System is not effective to be applied at Vocational School in Banda Aceh, especially for productive subjects. Because the scores of students who experienced a very significant decrease in the two lessons after the implementation of DLS was implemented at Vocational School in Banda Aceh.

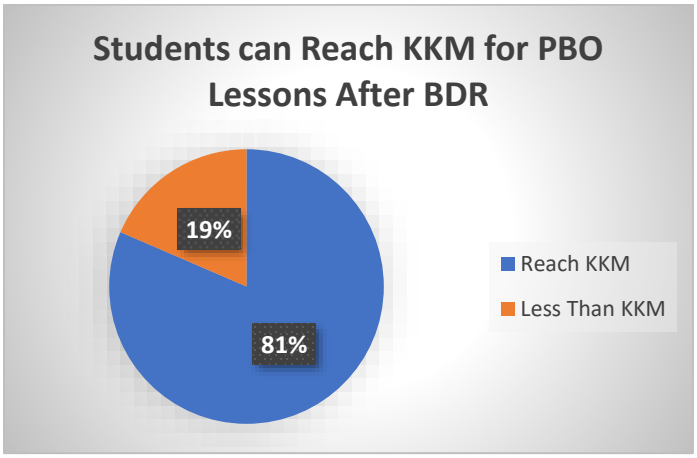

Figure 7. KKM Achievements PBO Lessons After BDR

Another reason is also because productive subjects have practicum hours that can only be done offline or face-to-face. This is because in these practical activities the teacher will practice to the students how to use the props and utilize materials for practicum which are only provided in schools and are only carried out in the available labs. This opinion also corresponds to an interview excerpt that says the following.

Mrs. RM.: "because during that practice the student must hold directly the components for the network installation and the student must see firsthand what the teacher is practicing. "

Mr. ZK: "because the father's lesson is that during practice, you have to hold all the components to connect a network and also those components have been provided in the school for the purposes when they practice. "

The interview excerpt above proves that practicum activities for productive subjects should be carried out face-to-face so as not to make it difficult for both parties, both for teachers as parties who teach and provide practicum activity lessons and good for students as parties who receive the practicum lessons so that they can be applied again. This is because the learning system at Vocational School has more practicum hours than theoretical learning hours[7]. So that the practicum is very influential for all Vocational School students.

The implementation of the DLS System or online learning at Vocational School still has many shortcomings because students and teachers are hampered by inadequate facilities due to lack of preparation from the school and the students. Online learning makes students lazy to learn and makes students undisciplined both when entering class and in collecting assignments given by the teacher. This is in accordance with the following interview excerpt.

Mr. HS: "There are so many students who are not present to take part in this online learning, so there are many students' absences. "

Pak RA: "Since studying online, this has made students undisciplined in time. "

The application of the DLS System is considered unsuitable to be applied to productive subjects, because the practicum carried out online makes it difficult for teachers to practice the activities in the lesson[8]. In addition, students also do not understand the practicum material provided by the teacher because students cannot directly practice the practicum activities and the unavailability of practicum tools and materials in their respective homes.

The implementation of the DLS System makes the achievement of student indicator scores drop drastically when compared to before the implementation of the DLS System was implemented at Vocational School in Banda Aceh. In the table of achievement scores from the two productive subjects on the previous page, it can be seen the many differences in grades that students get between before the implementation of the DLS System and after the implementation of the DLS System. This is in line with the results of research by Adhetya C.[9]. several previous studies discussing the application of the DLS System which said that the DLS System made the learning motivation of students who took part in online learning decrease.

In addition, this online learning is considered less effective because of the low learning independence of students who take part in this online learning, thus making it difficult for teachers to organize online learning activities [10]. The many obstacles that interfere with the online learning process make it difficult for students to

[7] Sarwo Edi, S. I. (2017). Development of Standards for the Implementation of Industrial Work Practices (PRAKERIN) for Vocational School Students of the Machining Engineering Expertise Program in the Surakarta Region. *Scientific Journal of Vocational Engineering Education (JIPTEK), X*(1), 20-30.

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follow this learning. One of the obstacles is that the number of students who complain about the problem of a network/signal that is not strong enough for those in remote areas and the high cost of internet quota is also a challenge in this online learning [11].

From the explanation from previous research, the application of DLS is still considered ineffective to be applied, because there is still much to be prepared before the DLS System is implemented end masse at all levels of education in Indonesia [12].

CONCLUSION

The Distance Learning System is not effective to be applied to Vocational School in Banda Aceh and other vocational schools in general. And it should be implemented through the Blended Learning Method because it will continue to carry out learning with a practical approach that is the spirit of learning at Vocational School.

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