Improving Understanding of Human Reproductive System Materials Using Padlet Application: Utilization of Digital Literacy in Science Learning

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Abstract
This article aims to improve understanding of human reproductive system material by using padlet applications. This is a digital literacy application for class IX students at the UNP Laboratory Development Junior High School. Padlet application is an online learning application that is synchronous online. In learning by using the padlet application, students and teachers can be present together in one learning platform. This research is a classroom action research (action research) with quantitative descriptive data processing techniques. The results of this study indicate an increase in student literacy, both data literacy and technological literacy by using padlet applications in science learning, especially material for the human reproductive system. This can be seen from the increase in learning outcomes from the first meeting to the third meeting.

Keywords: padlet, data literacy, technology literacy, online learning.

Introduction

Learning is very important in life. Without the learning process, we will be static and left behind. Learning and learning are two words that need deep attention from a teacher. Learning can be defined as a process of change in a person as a result of conscious experience, while learning can simply be interpreted as a process of making someone learn (Gasong, 2018; Nofrion: 2018)

. a set of external events designed to support some internal learning process. Furthermore, Gagne & Gagne (1985) put forward a more complete theory by saying that learning is intended to produce learning, external situations must be designed in such a way as to activate, support, and maintain the internal processes contained in each learning event.

Literacy is a person's ability to process and understand information when carrying out the reading and writing process (Subandiyah, 2017). The definition of literacy always evolves according to the challenges of the times. If in the past the definition of literacy was the ability to read and write (Subandiyah, 2017), now the term literacy has been used in a broader sense. According to Dikti, there are at least six basic literacy skills that need to be mastered, including: reading and writing literacy, numeracy literacy, scientific literacy, digital literacy, cultural literacy and financial literacy (Prastiwi, 2020). He further explained that digital literacy is the ability to use digital media ethically and responsibly to obtain information and communicate. Digitalliteracyis also known as the ability to use and manage technology, information and communication systems. This is often called technology, information and communication literacy (Maphosa & Bhebhe, 2019). This digital literacy ability feels very important during a pandemic.

Thus, literacy is a person's ability to read, write, speak, calculate and solve problems at the level of expertise required in work, family and society (Dema, 2020). So literacy is related to the ability to read, listen, analyze and make thinking conclusions based on existing data (Bu'ulolo, 2021; Subandiyah, 2017).

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In this industrial era 4.0, data is very important to be interpreted and studied (Maphosa & Bhebhe, 2019) because with its existence it can be understood how conditions are happening in the present and the past. This can also make data as a guide to do something better and more efficient. Moreover, in this era, digital technology plays a very important role in almost all activities carried out by the community, including in the field of education.

Increasingly sophisticated technology makes it easier for us to find and use data. The data that has been processed can then become information that can be used to solve a problem. For example in learning, we must be able to read, understand and process data well from various sources including sources from information technology (Maphosa & Bhebhe, 2019).

The existence of a padlet application used in science learning shows clear activities in the learning process. Several previous studies have examined padlets including, Nofrion (2021) said that padlets are synchronous online learning platforms because educators and students can attend together at the same time. In another study, Vivianti (2021) explained that padlets were able to create real learning because the teacher and students were at the same time. Meanwhile, Fitriani (2021) also explained that the padlet resembles a virtual wall in the classroom, because students and teachers can write anything on the padlet. In this application it is also possible for the teacher to guide students to improve literacy because in pre-learning activities students are asked to do literacy first about the material to be studied.

During this pandemic, various learning applications have been implemented by teachers at schools, such as WhatsApp, video, etc (Mukhlisa, Ardi, & Addinna, 2021) including in Development Junior High School. However, from some of these applications it has not been seen that there are clear student activities in the learning process. This can happen because of the low literacy of students in the UNP Laboratory Development Junior High School. This can be seen during direct learning, students are very lazy to read, understand and process the information they can get from the internet or information technology.

Based on the results of interviews with parents of students, it turns out that students at home are also very minimal to do literacy. For this reason, this study aims to discuss the use of information technology as an interactive learning media based on the padlet as a form of implementing digital literacy for class IX students at the UNP Laboratory Development Junior High School.

Method

This article was written from the results of the implementation of classroom action research (action research). Classroom action research is research carried out in the classroom by using an action to improve the quality of the teaching and learning process in order to obtain better results than before (Arikunto, 2021).

This research was conducted for 2 months starting from October 5, 2021 to November 23, 2021. This research was carried out in class IXa with 30 students consisting of 16 boys and 14 girls. This research was conducted by applying LSLC and using a padlet application. The implementation of this research was carried out in 3 cycles with 3 meetings. At the first meeting on October 5, 2021, the second meeting was held on October 26, 2021 and the third meeting was held on November 16, 2021.

The data collection tool used a learning observation sheet to see students' digital literacy and an assessment sheet to see learning outcomes after using the padlet application. The data were analyzed using qualitative descriptive techniques.

Results and Discussion

a. The dynamics of student attendance in virtual learning with the padlet application.

The use of information technology in science learning using the padlet application shows that class conditions are getting better. Indications can be seen from the increase in attendance and decrease in the number of students who are late. The following table shows the condition of student attendance at each learning meeting when using padlets in learning the reproductive system for three meetings.

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Table 1. Student attendance at meeting 1

No.	Student attendance	Total
1	Student arriving on time	5 people
2	Student arriving late	20 people
3	Student absent (no news)	5

Table 2. Student attendance at meeting 2

No.	Student attendance	Total
1	Student attended on time	13 people
2	Students arrived late	14 people
3	Students did not attend (no news)	3 people

Table 3. Student attendance at the meeting 3

No.	Student attendance	Total
1	Student arrived on time	29 people
2	Students arrived late	-
3	Students did not attend (because of illness)	1 person

From the student attendance data in table 1, it can be seen that at the first meeting there were only 5 students who attended on time, then 20 students who came late and 5 students who did not attend. Students who attend late are generally caused because they do not understand how to learn with padlets, the difficulty of signal access is also part of the obstacles they face. For students who were not present at the time of learning, 3 of them felt they did not care about learning, their lazy and indifferent nature made them ignore learning, while 2 of them reasoned that they did not get an internet signal.
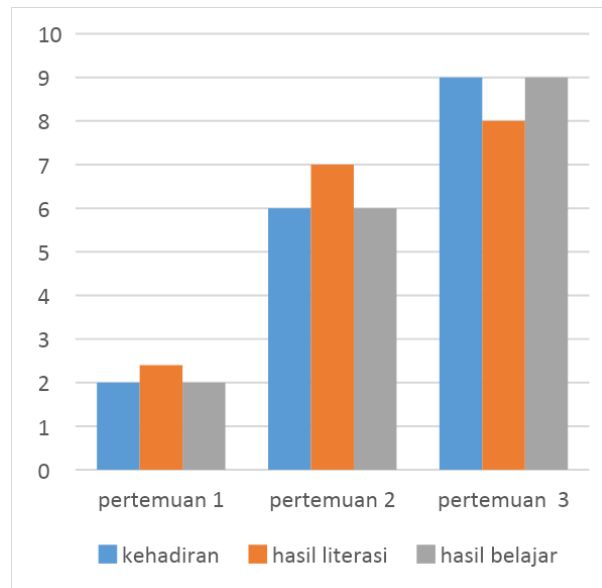
In the second meeting (Table 2) the attendance of students who were on time increased to 13 people, there were 14 students who were late and there were 3 students who did not attend. From the results of observations, students who were still late, 8 of them admitted that they still did not understand how to enter the padlet application, this was also because some students still felt new to padlets while 6 people were caused by internet network disturbances. Meanwhile, 1 student was absent because he was sick and 2 admitted that he had fallen asleep during the lesson, this is because the learning at the second meeting took place in the first hour, at 07.00 WIB. The third meeting showed a very good attendance rate. Table 3 shows that there are no more students who come in late, it's just that there are students who are absent 1 person due to conditions that are still sick.

From table 1-3 shows the presence of students in the virtual padlet class there is an increase. From the initial meeting to the next meeting, it looks more conducive. With the increasing understanding of students about padlet applications, attendance and activity participation indicate that there is an increase in students' motivation to participate in learning

b. Improved learning outcomes with the padlet application as an implementation of digital literacy

To ensure student attendance increases in learning using padlets, the teacher's efforts are to increase student digital literacy. This is done by means of every student who is present in the first 10 minutes is asked to do a digital literacy analysis, the results they do are sent in the form of physical evidence in the form of photo screenshots and short conclusions from the readings they understand. After they carry out literacy activities in learning, they are continued by holding exams/quizzes according to their literacy results.

From the first meeting to the third meeting, there was a significant increase between literacy results and the scores they got. The following is a graph of the relationship between student literacy results and the value of learning outcomes.

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Graph 1. The relationship between attendance, literacy, learning outcomes

From the graph above, at the first meeting the number of students who did digital literacy activities only amounted to 10%. When viewed from the quiz results, the average quiz score is still in the range of 45-60. This score is still very low, so there needs to be an increase and the teacher's effort at the next meeting.

At the second meeting, the results of the *screenshots* they sent rose to 78% and the average quiz results of students ranged from 60 - 78, although this number had not yet reached the maximum number, there had been an increase in learning outcomes along with the increase in student literacy results. At the third meeting the results of the screenshots sent by students had reached 95% and the quiz results ranged from an average number of 85-98.

From the research findings it was found that an increase in students' digital literacy with the padlet application, Seen significant results between literacy and learning outcomes obtained by students in each learning meeting. This is in accordance with what was stated by Puspitasari (2015) in his research that students' literacy skills in learning have a strong relationship with learning outcomes. This significant learning outcome also has a close relationship with student attendance when learning using the padlet application. This is in accordance with what was stated by Yudiawan (2019) that student attendance in learning has a strong correlation with learning outcomes.

Conclusion

From the results of this study, it can be concluded that student involvement in learning by using the padlet application can improve science learning outcomes in SMP UNP Laboratory Development. The use of padlets as a product of information technology development is the implementation of digital literacy in science learning. Indications of increased attendance, student participation, and learning outcomes also show an increase in student motivation when learning uses technology as a digital literacy application.

Acknowledgment

References

Arikunto, S. (2021). Classroom action research: Revised edition. Earth Literature.

Bu'ulolo, Y. (2021). Building a Literacy Culture in Schools. Indonesian Prima (BIP), 3(1), 16-23.

Dema, RD (2020). Literacy movement in Indonesia: a 2016-2019 meta-synthesis study (Doctoral dissertation, State University of Malang).

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Fathurrohman, M. (2015). Learning Models. Jogjakarta: Ar-Ruzz Media.

Gagne, RM. (1977). The Condition of Learning, 2nd edition, New York: Holt, Rinehart, and Winston.

Gagné, RM, & Gagné, RM (1985). Conditions of learning and theory of instruction. Holt, Rinehart and Winston.

Gasong, D. (2018). Study and learning. Depublish.

Maphosa, C., and Bhebhe, S. (2019). European Journal of Education Studies digital literacy: A musta must for open distance and e-learning (odel) students. European Journal of Education Studies. 5(10): 186–199.

Mukhlisa, F., Ardi, H., & Addinna, A. (2021, September). Teaching English Strategies During the Covid-19 Pandemic at SMKN 1 Lembah Melintang. In Eighth International Conference on English Language and Teaching (ICOELT-8 2020) (pp. 285-288). Atlantis Press.

Nofrion. (2019). EXO-OLO Task Learning Model. Patent No. 4,373,104.

Nofrion. (2021). Padlet as a learning platform during a pandemic (a simple guide). UNP

Puspitasari (2015) The relationship between students' literacy skills and the learning outcomes of fifth graders at SDN Bunulrejo 3 Malang. FIP UM.

Prastiwi, Mahar. (2021). "Recognizing 6 Basic Literacy that Needs to be Mastered and Their Benefits", Url: https://www.kompas.com/edu/read/2021/04/04/205529771/kenali-6-literasi-dasar-yang-perlu-dikuasai- and-benefits?page=all.

Subandiyah, H. (2017). Learning literacy in Indonesian subjects. Paramasastra, 2(1).

Vivianti (2021). The effect of the use of the padlet application on the learning outcomes of Indonesian students in class V MIN 2 Sidoarjo.

Yeni Fitriani (2021). The use of padlet applications in learning to write expository texts. Suraya Kencana

Yudiawan University (2019). Correlation analysis of absenteeism level with learning outcomes of MTs students. Science al gebra, Sorong City, West Papua. STAIN Sorong