

USE OF DRAGONLEARN INTERACTIVE MEDIA IN MATHEMATICS LESSON

Arif Hidayat
{rif99rif@gmail.com}

Postgraduate State Islamic University Prof. KH Saifuddin Zuhri

Abstract. Mathematics lessons are considered complex and tedious eventually; students are not interested in learning mathematics. In the end, students have difficulty understanding mathematical concepts. For learning to be more exciting and instil mathematical concepts correctly, interactive learning media are needed. This study aimed to determine the use of *dragon knows* interactive media in improving learning outcomes in mathematics. The method used is *quasi-experimental*, with *Pretest-Posttest Control Group Design* research design. The group that was given the treatment was called the experimental group, and the group that was not treated was called the control group. The study results concluded that dragon learns interactive media can improve mathematics learning outcomes and students are more active in the learning process.

Keywords: interactive media, dragon learn, mathematics.

INTRODUCTION

Not a few students consider mathematics a complex subject. Labels are complicated, making students lazy to learn mathematics. Most teachers confirm this. When determining the minimum completeness criteria, the teacher finally gives a lower standard of mathematics scores than other subjects, rather than trying to use the correct method in delivering mathematics lessons.

Why is math considered difficult? Because the characteristics of mathematics learn the material in stages. Students must master certain materials to learn other materials. The materials are interconnected. If students cannot master the primary material as a prerequisite for studying other sub-materials, then this is why mathematics is considered problematic. This is by Ruseffendi's findings that it was found that there were still many students after learning mathematics with reasonably simple material, many having difficulties, and also many mathematical concepts being misconstrued. Mathematics is considered a complex, empowering and challenging subject (Asyhar, 2022).

Mathematics learning aims to make students understand mathematical concepts and explain the relationship between one idea (Permendiknas, 2006). If students are not given mathematical concepts correctly, they will continue to assume complex mathematics to the secondary school level. This aligns with *Bruner's* opinion that learning mathematics is learning about mathematical concepts and structures in the material being studied and looking for relationships between ideas and mathematical systems (Hoyo, 1990). Students must find order by tinkering with materials related to the intuitive order that students already have. Thus students in learning must be actively involved mentally to recognize the concepts and structures included in the material being discussed; the child will understand the material that must be mastered.

The reality in the mathematics learning process is still using conventional learning. That doesn't mean traditional education is always wrong. However, formal learning can only be followed by children who have more ability and interest in mathematics. What about children who are lacking in math skills. This is where the role of learning media is involved. Without knowing media, the

teacher becomes the centre of learning. The teacher is dominant, so the students are passive; the students listen to the explanation from the teacher. Mediocre children finally find learning to be boring and less attractive. In general, the benefits that can be obtained from learning media are that the learning process becomes more interesting, more interactive, time-effective, and the quality of learning increases (Suryani, 2019).

To understand mathematical concepts, media is needed so that students' understanding becomes correct, especially with the presence of information technology and computers in today's digital era. Wrigley had long ago seen that at a time when the information age arrived, the role of teachers in education diminished in line with advances in computer technology, smartphones and networked internet as sources of new knowledge that knew no boundaries. According to Rayanda Asyar, learning media are anything that can channel messages received by recipients from sources in a planned, efficient, effective manner and occur in the environment where the learning process is carried out (Darmawan, 2012). Dian Novitasari, in her research, concludes that the ability to understand mathematical concepts of students who use interactive multimedia states that this interactive multimedia affects students' ability to understand mathematical concepts (Russefendi, 1991).

Learning media that can be used for learning mathematics is the interactive media *dragon learn*. *Dragonlearn* is made in such a way so that students can learn the material from theme to theme until they master the music. On the *dragonlearn.org* web page, it says after this lesson, students will be able to tackle any assignments in school textbooks with ease. One of the research results on the use of *DragonLearn* is online learning in the Covid-19 era, written by Aniq Amalia. This observational study showed that students were more active in learning mathematics using *dragon learn* interactive media (Sugiyono, 2007).

This experimental model research proves whether *DragonLearn* media can improve mathematics learning outcomes based on the description above. Meanwhile, this research aims to know the use of *dragon learns* interactive media in learning mathematics.

RESEARCH METHOD

The method used in this study is a *quasi-experimental* type. Research *quasi-experimental* research is used to search for a specific treatment effect against the others in those conditions (Sugiyono, 2007). The main characteristic of a *quasi-experimental design* is developing a *proper experimental design*, which has a control group but cannot fully control the external variables that affect the implementation of the experiment (Novitasari, 2016)

The design used is the *Pretest-Posttest Control Group Design*. In this design, two groups are selected at random, then given a *pretest* to determine the initial state. Is there a difference between the experimental and control group? Pretest results are good if the experimental group values are not significantly different. The first group was given treatment, and the other group was not. The group that was given the treatment was called the experimental group, and the group that was not treated was called the control group (Amalia, 2020).

The population in this study were students of class V MIN 1 Purbalingga. The *sampling technique* was *purposive sampling*, which took two groups of treatment classes with nearly the same mean and variance in the initial ability test. The experimental group *consisted* of ten students with the learning process using interactive media based on *dragon learn*. The control class also has ten students in the learning process using conventional learning. This experimental process uses two hours of education.

They collect data using instruments in the form of questions, both *pretest* and *post-test*. The learning materials being tested are prime numbers and prime factors. The device, before being used,

was tested for validity and reliability. Instruments are valid when they can reveal data from variables appropriately and do not deviate from the actual situation. Agents are said to be reliable when they can disclose reliable data (Sugiyono, 2017). After the data was collected, the results were analyzed to determine the mathematics learning outcomes of the two groups. The *post-test* results of the two groups were then compared.

RESULT AND ANALYSIS

This study focuses on using dragon learn as an interactive learning medium in mathematics. The material given to the two groups is the material of Prime Numbers and Prime Factors. The discussion descriptions include 1) dragon learn as a learning medium, 2) statistical analysis of the experimental class and control class, 3) the method of using dragon learn in learning.

Dragonlearn as interactive mathematics learning media

Many teachers who give mathematics lessons have difficulty, especially with the Covid-19 pandemic. The problems of learning mathematics are experienced by teachers and students who have difficulty understanding the material presented by the teacher through online learning (Sri & Arita, 2021). One of the difficulties is the limitation of the internet network so that all students do not follow the use of learning via zoom. Seeing cases like this, what needs to be done is to use interactive learning media. One of these interactive media is dragonlearn.org. Dragonlearn org is a partner platform for the Ministry of Cultural Education to be used as an online learning medium (Eka & Angga, 2021).

Dragonleran.org is an online and free platform. The presentation of the material is made interactive. This media concept uses an individual approach to each student. Interactive dialogue between the media and students. Hofstede states that multimedia is defined as the use of computers to create and combine text, graphics, audio, moving images (video and animation) by combining links and tools that allow users to navigate, interact, be creative, and communicate (Arikunto, 2010). In a book entitled Multimedia Digital Iwan Binanto describes interactive multimedia. According to him, interactive multimedia is media that can be controlled and controlled by the user and then the multimedia elements will be displayed (Binanto, 2010).

This system responds to every activity carried out by students, positive responses in the form of praise and invitations to work on new practice questions will be given in terms of correct answers, while in response to incorrect answers, students will be given appropriate questions to assist them in choosing the correct answer. more precise.

In order to use the dragonlearn media, students must be registered by the teacher. So the teacher first registers. Registration is quite easy like registering on any other internet account. Once registered, students can work on interactive questions and assignments in stages. The teacher's role is more as a facilitator and companion in learning.

Statistical analysis of experimental class and control class

Before conducting the research, the researcher developed an experimental research design. Due to time and other reasons, it was decided to form an experimental class and a control class. Each class consists of ten students from the fifth grade of MI Negeri 1 Purbalingga for the 2020/2021 academic year. To determine a total of twenty students who have the same ability, the researchers looked at the documentation data from the classroom teacher and from the madrasa. After getting twenty children who have the same mathematical ability, the next step is to divide the class into two classes. The first class is called the experimental class, with a total of ten children. While the next ten children entered the control class.

After the experimental class and control class were formed, the next stage was to conduct a pretest. The assessment instrument is in the form of questions that have been validated by the class teacher. After the pretest continued with the application of interactive media in the experimental class and conventional learning in the control class. The time used in this two-group learning is three hours of meetings.

At the end of the second class learning, do the post-test. From the results of the pretest and post-test, the data were analyzed using the SPSS application. The results of the analysis to answer the formulation of the problem in this study. The temporary answer to this research is that there is an effect of learning mathematics with interactive media dragonlearn. Hypothesis is a statement or accusation while the research problem whose truth is still weak so it must be tested empirically. The hypothesis according to GER Brurrough can be done for: (1) Research on calculating the number of things (magnitude), (2) Research on differences (differences), (3) Research on relationships (relationship) (Sugiyono, 2007).

Table 1: Statistics Description

Jenis Sumber Belajar	Pengertian	Contoh By	
		By Design	Utilization
<i>Message</i>	Information to be passed by components others in the form of ideas, facts, meanings or data.	Lesson materials.	Folklore, fairy tales, advice.
<i>People</i>	The person who saves information or distribute it (not including those who carry out the function of securing and managing learning resources).	teacher, actor, students, players (excluding technicians, curriculum team).	Source person, community leaders, agency leaders, respondents.
<i>Materials</i>	Something, we might call software media, that contains messages for served.	Transparent, slide, tape, book, picture.	Mosques, books, engineering equipment.
<i>Devices</i>	Something, one might call hardware media, that support delivery	OHP, TV, camera, whiteboard.	Generators, machines, tools car.

Descriptive statistical analysis is useful for describing and describing research data, including the amount of data, maximum value, minimum value, average value and standard deviation. The descriptive statistical data describes the number of participants in each group. Both the experimental group and the control group consisted of ten participants. The results of the pretest of the experimental group and the control group recorded have the same average value, which is 47.00. However, the standard deviation is larger than the experimental group. Thus, it can be concluded that the experimental group is more heterogeneous in terms of the abilities of each participant.

After descriptive analysis, the data were tested with the normality test. The normality test was conducted to determine whether the research data were normally distributed or not. Normal data is an absolute requirement before conducting parametric statistical analysis, namely the paired-sample t-test and the independent sample test

Table 2: Normality Test

Based on the normality test, the data from the pretest and post-test results of the two groups were normally distributed. It is indicated by the value of Sig. Kolmogorov Smirnov and Shapiro-Wilk tests are greater than 0.05. Because the research data is normally distributed, then the data is then tested using parametric statistics. In this study, the paired sample t-test was used.

Table 3: Paired Sample Test

The paired sample test is used to determine whether there is a difference in the mean of two paired samples. The paired test in this study was used as an answer to the problem formulation, namely whether the use of DragonLearn interactive media could improve mathematics learning outcomes. The paired sample test was carried out on the experimental class pretest data with the experimental class post-test using dragonlearn interactive media. Then the experimental class pretest data with the control class post-test data using conventional learning. Different tests are used to evaluate certain treatments on the same sample at two different observation periods (Widiyanto, 2013). Paired sample t-test t is one of the testing methods used to assess the effectiveness of the treatment, marked by the difference in the average before and after the treatment is given (Hengky, 2012). The basis for concluding that there is a difference in the use of dragonlearn learning media with conventional learning is if the value of Asymp.Sig. < 0.05 then the hypothesis is accepted while the hypothesis is rejected if the Asymp value. Sig. > 0.05 . In Table 3: Paired Sample Test, the Asymp value. The sig for both the control class and the experimental class is 0.001. Thus the research hypothesis is accepted.

The use of interactive media dragonlearn is better than conventional learning is not without reason. In the control class with conventional learning, the teacher only explains the material and is followed by giving practice questions. Students work on the questions and there are some children who do not finish. So that the practice questions continue to be done at home. In contrast to the experimental group, which used DragonLearn interactive media, the children immediately practiced and found concepts with DragonLearn media .

Students seemed to be actively asking questions related to the material in DragonLearn. Both ask other participants and the teacher. Teachers are required not to give direct answers, but emphasize children to find patterns or concepts such as those in DragonLearn interactive media.

Benefits of using dragonlearn in learning

There are so many reasons to use interactive learning media . These reasons include the following: (1) Can uniform the material to all students. (2) Can make the learning process clearer and more interesting. (3) Can make the learning process more interactive. (4) Can reduce time and effort. (4) Can improve the quality of student learning outcomes (Musfikon, 2012).

Dragonlearn interactive media is also practical to use in terms of place and time, and is free. One of the criteria for selecting learning media according to Musfikon is that the media are low-cost (Nasution, 2013). Able to foster a positive attitude of students towards learning. The use of interactive learning media in the teaching and learning process basically provides many benefits for both teachers and students. Selection of good learning media is very important to improve the quality of the teaching and learning process in the classroom.

In addition to demanding active students, the questions presented include HOTS (Higher Order Thinking Skills) questions . Access using dragonlearn media is not limited by time and place. As long as there is an internet network and computers, laptops or cellphones and other gadgets as well as accounts that have been created by the teacher, students can learn, try and solve problems from the existing materials. This will not be found in conventional learning. Conventional learning is more dependent on the ability and presence of teachers in delivering material to students.

CONCLUSION

Based on the discussion above, it can be concluded that the use of Dragonlearn can be used as a learning medium in mathematics lessons. In order to maximize the use of this media, teachers are strived to always monitor student activities. In DragonLearn interactive media, there is a progress feature of student work that can be monitored by the teacher anytime and anywhere. With the use of dragonlearn media in the experimental class, students were seen to be more active in discussing and asking questions both with the teacher and with friends. Thus the learning process with DragonLearn interactive media is not monotonous. So that the impression of difficult mathematics lessons can be removed.

References

- Asghar, Ray and. 2012. *Creative Developing Learning Media*. Jakarta: Echoes of Persada (GP) Press Jakarta.
- Binanto, Ivan. 2010. *Digital Multimedia – Basic Theory and Its Development*. Yogyakarta: Andi
- Eka Yuda Wibawa, Angga. 2021. *Implementation of a Digital Platform as an Online Learning Media at MI Muhammadiyah PK Kartasura during the Covid-19 Pandemic* . Berjah Journal
- Darmawan, D. 2012. *Information and Communication Technology Education*. Bandung: PT Pemuda Rosdakarya.
- Hengky W. Permana. 2012. *2003 Access Inventory Application* , Jakarta : PT Elex Media Komputindo
- Hoyo, Herman. 1990. *Teaching and Learning Mathematics*. Malang: IKIP
- [HTTPS://: www.dragonlearn.org](https://www.dragonlearn.org)
- Musfikon, H. 2012. *Media and Learning Resources* . Jakarta: Library Achievement
- Nasution. 2013. *Various Approaches in the Teaching and Learning Process* . Jakarta: PT. Earth

Literature

- Novitasari, Diah.2016. *The Effect of Interactive Multimedia Use on Students' Mathematical Concept Understanding Ability* , Fibonacci: Journal of Mathematics
- Permendiknas No. 22 of 2006 concerning Content Standards
- Ruseffendi, ET1991. *Assessment of Education and Student Learning Outcomes Especially in Teaching Mathematics* , Bandung: Diktat
- Sri Fortune Hutagaol, Anita. 2021. *Analysis of the Difficulties of Class VIII Mathematics Teachers in Implementing Online Learning During the Covid-19 Pandemic at SMP Nusantara Indah* . Jakarta Mathematics Education Research Journal: Volume 3, No. 2, August 2021
- Sugiyono. 2007. *Qualitative Quantitative Research Methods and R&D* . Bandung: Alfabeta.
- Sugiyono.2017. *Educational Research Methods: Quantitative, Qualitative, and R&D Education* . Bandung : Alfabeta
- Sunarti. 2013. *Applied Statistics*. Jakarta : PT Elex Media Komputindo
- Suryani, Nunuk. 2019. *Innovative Learning Media and Its Development* . Bandung : Rosdakarya Teenagers.