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The Use of *Race Quiz* Media to Increase Students Interest in Learning Mathematics on the Material of Whole Numbers Class VII D SMP Negeri 3 Lawang Academic Year 2023-2024

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A B S T R A C T
With the advancement of science and technology, it is expected to facilitate students in learning mathematics. One method that can be used to learn mathematics is through technology-based media that can be accessed easily by teachers and students. This research is a collaborative classroom action research that aims to increase the interest in learning mathematics of students in class VII D SMP Negeri 3 Lawang in the 2023-2024 school year by using the "Race Quiz" media. The subjects in this study were students of class VII D SMP Negeri 3 Lawang in the academic year 2023-2024 as many as 32 students consisting of 16 male students and 16 female students. The cycle in this Classroom Action Research uses the Kemmis & Me Taggart model with the stages of planning, implementation, observation, and observation The instruments used to collect data were observation sheets of learning activities, student response questionnaires for each cycle, and interviews with mathematics teachers. The data obtained was analysed using quantitative descriptive analysis to determine the increase in students' interest in learning mathematics using the "Race Quiz media. Based on pre-cycle data, it shows that students' interest in learning mathematics is 68% so that it can be categorised as sufficient. This class action research was conducted in 2 cycles. The observation results showed an increase in students interest in learning mathematics in the learning process by 6% from 76% in cycle I to 82% in cycle II, so it can be categorised as very high. Therefore, the existence of technology-based learning media is expected to increase students' interest in learning mathematics

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1. INTRODUCTION

The rapid development of science and technology brings changes to the field of education, making it important for teachers and students to learn and be able to use technology in learning (E. Zetriuslita, 2021). Along with these developments, learning methods have also undergone

many developments, both personal learning methods, learning media or learning processes. The form of information technology development applied in the world of education is an innovation that has a huge contribution to changes in the learning process, where the learning process is no longer just listening to the description of material from the teacher but students also carry out other activities such as observing, doing, and also demonstrating One form of innovation that has emerged in technology-based learning media (Nursyam, 2019). With the existence of technology, of course, it can have a real positive impact on learning. The renewal of learning media in the form of technology-based media is expected to be able to attract students interest in learning optimally. In addition, technology in the 4.0 era can be used as an answer to the challenges of the growing industrial revolution era (Miftahudin Ahmad, 2023)

Mathematics is one of the important lessons to learn from elementary school to college, this is because the technological advances that can be seen today are new discoveries made in the field of mathematics. To support this, mathematics is an important element for educational progress (S. Ernawati, 2020) However, in reality, many students do not like mathematics, this is because mathematics is considered complicated by most students (Syarah Aulia, 2021) Whereas based on (Agustina, 2020) mathematics has a significant role in providing students with the ability and learning experience to solve problems in everyday life. Given the importance of mathematics, the learning process of mathematics in schools should be delivered in a meaningful way and should be able to show the benefits of mathematics in solving various problems in real life (Raka Wijaya, 2021).

The mathematics learning process that runs in the classroom is still dominant using the lecture method by the teacher to students. According to (Urip Santoso, 2022) teachers must change their role to become facilitators who guide students towards the formation of knowledge by themselves. There needs to be a strategy that can make students active and make students more interested in learning mathematics. Efforts can be made to overcome students' interest in learning in mathematics learning activities by using technology-based learning media. Interest in learning mathematics can be raised by learning activities that attract students' attention activities that can arouse enthusiasm for learning, or through an activity that is different from the activities that have been carried out by students in learning (Lestari, 2019). Teachers can utilise learning media to help generate students' interest in learning mathematics. According to (Lestari, 2019) learning interest is created when students are active in the learning process and also students' interest in learning mathematics will increase if students can solve matha problems easily By applying technology-based mathematics learning, it is hoped that it can increase students' interest in learning mathematics.

Based on the results of interviews with mathematics teachers at SMP Negeri 3 Lawang, it shows that students' interest in learning mathematics is low. It is also said directly by students of class VII D SMP Negeri 3 Lawang during the implementation of observations on Field Experience Practices (PPL) that mathematics is a difficult and unpleasant subject, even some of them do not like mathematics. Students' attention in learning mathematics is still considered lacking, it can be seen in the learning process that only some students look focused. According to the maths teacher at SMP Negeri 3 Lawang, this is because previously learning was done online, although learning has returned to offline learning by complying with health protocols, it is still considered unable to restore students' interest in learning mathematics.

One of the technology-based learning media that can be used to increase students' interest in learning mathematics is the "Race Quiz" media. This media is suitable for use in mathematics learning activities, because this media can be accessed easily by teachers and students. With a

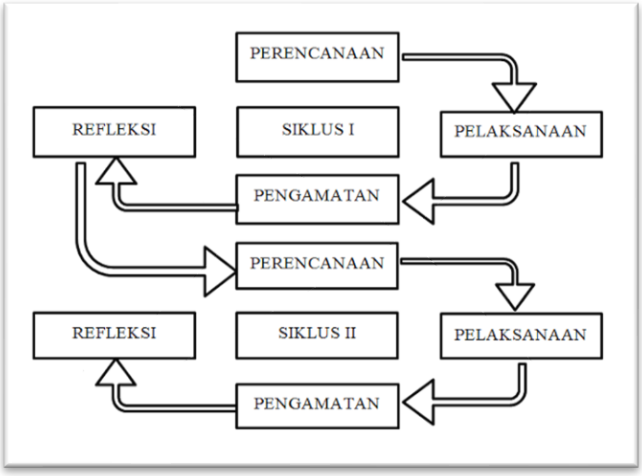
variety of templates available on the quizwhizzer.com link, it can make it easier for teachers to choose the appearance and type of game that will be used for learning activities. In addition, "Race Quiz" media can also be used anytime, anywhere and by anyone, only by using a mobile phone one can access this media. However, its use requires an internet network, so this media is still not available offline.

The use of "Race Quiz" media is combined with whole number material, where this material is the initial material in learning mathematics which discusses the definition of whole numbers, properties of whole numbers, comparison of whole numbers, counting operations (addition subtraction, multiplication, division) of whole numbers and the application of whole numbers in everyday life. Based on the results of diagnostic tests that have been conducted in class VII D SMP Negeri 3 Lawang, it shows that students' ability to solve mathematical problems on integer material, especially the sub-matter of integer counting operations, is still relatively low. This is also supported by the results of interviews with several students of class VII D SMP Negeri 3 Lawang, that the interest in learning mathematics of students of class VII D SMP Negeri 3 Lawang is still relatively low, because mathematica is a difficult and unpleasant subject, even some of them do not like mathematics.

There are still many problems in learning mathematics, of course, making students' interest in learning low. In increasing interest in learning mathematics, of course, the use of media is very influential in the learning process (Rika Wijaya, 2021). With technology-based media, it is hoped that it can provide opportunities for students to be actively involved in the learning process. As previous research has proven that the existence of technology-based learning media can have a positive impact on increasing students' interest in learning mathematics. Research (Urip Santoso, 2022) using android-based learning media in class VII SMP can increase student interest in learning by 7% from 65% to 72%. Meanwhile, research (Yosse Andreas Batu-Bara, 2021) shows that the use of E-comic learning media is effective in increasing student interest in learning during the Covid-19 pandemic with a percentage of 80.67% which is classified as very high criteria.

The research listed above has proven that the use of learning media can increase interest in learning mathematics. But not only that, interest can affect learning, because student interest is the main factor that determines student activeness. If students are active, then the learning process will run optimally. Interest is a mental tendency towards something that consists of feeling happy, paying attention, seriousness, the existence of motives and goals in achieving a goal (Rika Wijaya, 2021). In learning activities, interest plays a role as a force that will encourage students to learn. Students who are interested in learning will continue to study diligently, in contrast to students who only receive lessons that are only moved to want to learn without any interest in it himself (Heriyati, 2017:23). The use of learning media is one of the efforts that can be done by teachers to increase students' interest in learning (Yustiqvar, et al., 2019). Another opinion simply explains that interest is something that causes interest and attention to a person, object or activity that is considered beneficial to him (Nursyam, 2019). The learning process requires learning media that is appropriate to the characteristics of students, the subjects taught, supporting facilities and infrastructure. Media in learning are all forms of communication tools that can be used to convey information from sources to students. The aim is to stimulate them to participate in media activities learning (Kamaruddin, 2022). Based on the description above, it can be concluded that interest in defined as a person's willingness to attract attention so as to cause satisfaction in oneself to carry out an activity or activity.

According to (Rika Wijaya, 2021) learning is a process of individual change consciously or unconsciously which is marked by changes in behaviour as a result of interaction with the environment. With an interest in learning, it can directly change learning behaviour, from not liking to liking, not caring to caring. In order for the learning process to achieve maximum results, the teacher. must know things that can support or influence the learning process. The teacher's role in providing interesting learning methods and media in the learning process will stimulate students' interest in learning and make students more active and diligent in studying (Hatimah, 2022). The development of interest in learning will not grow without the support of



trigger factors that can influence students' consciences. Triggering factors that can play a role in developing students' interest in learning are time and learning conditions, if this is appropriate, it can increase interest in learning mathematics Based on the description above, it can be concluded that interest in leaming mathematics is an activity that causes high feelings and curiosity, usually accompanied by involvement in learning that provides a good influence or change. Especially now that many students have mobile phones. Based on the explanation above, currently technology-based learning will be easy to implement. Therefore, the purpose of this study is to increase the interest in learning mathematics of students in class VII D SMP Negeri 3 Lawang in the 2023-2024 school year by using the "Race Quiz" media on integer material.

2. METHOD

This research is a collaborative classroom action research (CCA), where researchers collaborate with student teachers to solve problems that occur in the classroom. This study aims to see how the use of "Race Quiz" media can increase students' interest in learning mathematics by using the cycle according to Kemmis & Mc Taggart. This PTKK cycle was carried out in 2 cycles with 4 stages for each cycle, namely planning, action, observation, and reflection.

Figure 1: Classroom Action Research Procedure

The subjects in this study were students of class VII D SMP Negeri 3 Lawang in the 2023 2024 school year. The number of students in the class was 32 students consisting of 16 male students and 16 female students. To collect data, researchers used diagnostic tests, interviews and questionnaires. Data from diagnostic tests on whole number material in the form of student answers were compiled to determine students cognitive abilities in solving mathematical

problems. Then from the results of the diagnostic test, researchers conducted interviews with mathematics teachers and students of class VII D SMP Negeri 3 Lawang to find out how much interest in learning mathematics students. The data from the questionnaire is in the form of students' interest in doing mathematics learning activities using the "Race Quiz media Observations were made during the learning process, while the questionnaire was given at the beginning and end of each cycle through Google Form.

The data collection techniques used in this study are data on students' interest in learning mathematics on the "Race Quiz" media taken from a questionnaire sheet given before the implementation of the action, after the implementation of the first cycle action and after the implementation of the second cycle action. To calculate students' mathematics learning interest in the "Race Quiz" media, quantitative descriptive analysis techniques were used. The quantitative descriptive analysis technique used is to calculate the average score, the highest score, and the lowest score in the student response questionnaire on the use of "Race Qua media to increase interest in learning mathematics in class VII integers SMP Negeri 3 Lawang in the 2023-2024 school year. The formula used to calculate the index of students interest in learning mathematics on the "Race Quiz" media is as follows.

$$\Pr = \frac{\sum Rs}{\sum N} \times 100\%$$

Description:

Pr : Percentage who responded to a particular category asked in the questionnaire Rs

$\sum Rs$: The number of students who gave a response to a particular category that is asked in the questionnaire

$\sum N$: Number of students × total maximum response

Data on interest in learning mathematics on the use of "Race Quiz" media obtained can be categorised based on the guidelines for student interest in learning as follows:

Table 1. Conversion Guidelines for student learning interest

Percentage	Category
80% - 100%	Very High
70% - 79%	High
60% - 69%	Simply
50% - 59%	Low
0% - 49%	Very Low

The indicator of success in this collaborative classroom action research (PTKK) is the increase in interest in learning mathematics towards the use of "Race Quiz" media which is indicated by the increase in the percentage of student interest questionnaires between cycles

3. RESULTS AND DISCUSSION

This class action research was conducted in 2 cycles. The data of the research results are data obtained from questionnaires of students responses to the use of "Race Quiz" media to increase interest in learning mathematics in class VII D SMP Negeri 3 Lawang in the 2023-2024 school year after the implementation of cycle I and cycle II actions, the results of observations during the implementation of actions and the results of interviews with mathematics teachers and students of class VII D SMP Negen 3 Lawang in the 2023-2024 school year.

Based on the initial observation, the teacher mostly uses the lecture method by using conventional media and student handbooks as a source of information and learning materials. Often the teacher gives instructions to students to do assignments according to the material that has been explained. In fact, based on the results of observations and interviews with students, this certainly makes students feel bored and bored with mathematics learning activities. Therefore, the researcher tried to apply the "Race Quiz" media to increase students' interest in learning mathematics. The results obtained from the two cycles of implementing this research can be described as follows:

3.1 Cycle I Reflection

Reflection is a step that is done after knowing the results and actions in cycle I Based on the results of the learning interest, the researchers and mathematics teachers of SMP Negeri 3 Lawang discussed to take further action in order to improve cycle I because in cycle I the implementation of learning by using through the media "Race Quiz" has not run optimally. There are two factors that cause the implementation of learning by using the "Race Quiz" media has not run optimally, namely the leaming media used makes students feel new and the learning model used is still confusing for many students.

In this first cycle, the teaching and learning process begins with giving a questionnaire of student responses to technology-based learning media, namely the "Race Quiz" media. Giving this questionnaire aims to introduce learning media that will be used in the learning process as well as see how much interest in learning mathematics students by using technology-based learning media, namely the "Race Quiz" media. Based on the results of observations through student response questionnaires before using the "Race Quiz" media, the percentage of students' interest in learning mathematics is 68% so that it can be said that students' interest in learning mathematics using the "Race Quiz" media is classified as a sufficient category.

After students filled in the questionnaire at the beginning before using the "Race Quiz" media, the mathematics learning activities began with the division of groups homogeneously based on the results of the diagnostic tests that had been carried out. Each group consists of 4 students and in one class there are 8 groups that will work together to carry out mathematics learning using the "Race Quiz" media. The learning media used makes some students feel new to it because so far the learning used is a direct learning model so that students' response and interest in this learning in still lacking. However, there are also some students who are eager to carry out mathematics learning activities, because the "Race Quiz" media is a game-based learning media (game education). However, when implementing mathematics learning with the "Race Quiz" media, it was seen that many students were excited and enthusiastic about the learning model used. The enthusiasm of students can be seen from student activities during the learning process where each group is very active and eager to solve the problems in the "Race Quiz" media, because later there will be 3 groups that will be the winners. So that in using this learning media requires cooperation from each individual student.

"Race Quiz" media is an innovation in learning activities that utilise technology in the form of mobile phones. Based on the results of interviews that I conducted with students of class VII D SMP Negeri 3 Lawang, almost all students of class VII D have

mobile phones, there is only 1 student out of 32 students who do not have a mobile phone. However, this is not an obstacle to implementing learning activities with technology-based media, because each group only needs 1 mobile phone to access the "Race Quiz" media. Then after all groups have solved all the problems in the "Race Quiz media, there is an answer review that provides an explanation of the questions contained in the "Race Quiz" media, so that with this media it is expected to increase students' interest in learning mathematics.

At the end of the mathematics learning activity with the "Race Quiz" media, the researcher gave a student response questionnaire to the "Race Quiz" media. The purpose of giving questionnaires after mathematics learning activities is to measure how much interest in learning mathematics by using the "Race Quiz" media. Based on the results of observations through student response questionnaires after using the "Race Quiz" media, the percentage of students' interest in learning mathematics increased by 8% from 68% to 76% so that it can be said that students' interest in learning mathematics using the "Race Quiz" media is classified as high category.

Based on the observations of the mathematics learning that has been done, the researcher gives directions to students to provide suggestions regarding the development of the "Race Quiz" media in filling out the questionnaire in the last column. The purpose of this questionnaire is not only to measure students' interest in learning mathematics based on the "Race Quiz" media but also as a forum for students to provide suggestions regarding learning activities using the "Race Quiz" media at the next meeting. This is important so that students like and are interested in learning mathematics when teaching and learning activities take place.

Therefore, researchers and teachers agreed to continue in cycle II. In cycle II, improvements were planned in a way that researchers developed the "Race Quiz" media according to the most suggestions from students, namely by adding prizes as winners in using the "Race Quiz" media. This is expected to increase students' interest in learning mathematics by using the "Race Quiz" media and can optimise mathematics learning activities.

3.2 Cycle II Reflection

Based on the observation results, cycle II showed an increase in scores from the previous cycle. The improvement plan planned in cycle I can be implemented well in cycle II. This can be seen from the student observation data which has reached very high criteria with an increase in students' interest in learning mathematics using the "Race Quiz" media by 6% from 76% to 82%. The following is a table of the results of increasing students' interest in learning mathematics using the "Race Quiz" media:

Table 2. Increased Interest in Learning Mathematics Students Using “Race Quiz” Media

Score	Category	Frequency		Percentage (%)	
		Siklus I	Silklus II	Siklus I	Siklus II
80 - 100	Very High	7	17	23%	53%
70 - 79	High	5	13	15%	40%
60 - 69	Simply	9	2	28%	7%
50 - 59	Low	11	0	34%	0%
0 - 49	Very Low	0	0	0%	0%

Table 2 shows the results of the questionnaire distributed through Google Form based on students' interest in learning Mathematics by using the "Race Quiz" media. The comparison of the average percentage of the questionnaire of interest in learning Mathematics from cycle 1 and cycle 2 is presented in Figure 1.

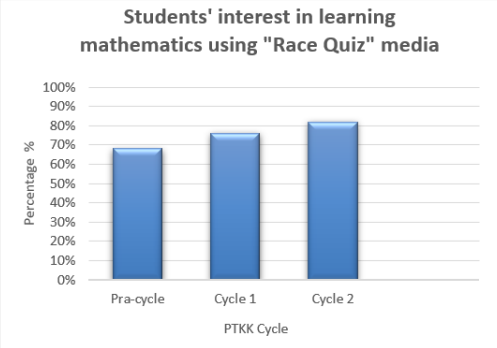


Figure 1. Increased students interest in learning mathematics using “race quiz” media

Based on the results of research, data analysis, and discussion, it can be concluded that using the "Race Quiz" media can increase the interest in learning mathematics of students in class VII D SMP Negeri 3 Lawang in the 2023-2024 school year. This can be seen from the results of research conducted over 2 cycles, namely Interest in learning mathematics using the "Race Quiz" media in cycle I there were 11 students with a percentage of 34% included in the low category, 9 students with a percentage of 28% included in the moderate category, 5 students with a percentage of 15% included in the high category, and 7 students with a percentage of 23% included in the very high category. So there are still 11 students in the low category and 9 students in the moderate category who need to make improvements because they have not reached the completion criteria. Overall, based on observations of students' interest in learning mathematics using the "Race Quiz" media in cycle I, it increased by 8% from 68% to 76% so that it can be said that the interest in learning mathematics of students in class VII D SMP Negeri 3 Lawang in the 2023-2024 school year using the "Race Quiz" media is classified as a high category. This shows that in cycle I classical completeness has not reached 80%, so it needs to be continued in cycle II.

In cycle II there were 2 students with a percentage of 7% in the moderate category, 13 students with a percentage of 40% in the high category and 17 students with a percentage of 53% in the very high category. This shows that in cycle II there was an increase in students' interest in learning mathematics using the "Race Quiz" media by 6% from 76% in cycle I and to 82% in cycle II. So it can be said that there is an increase in interest in learning mathematics using the "Race Quiz" media with classical completeness reaching more than 80%. The results of this study also support the results of research (Angela Hollman, 2019) which says that the use of technology-based learning media can increase student interest in leaming. (Arghya Ray, 2019) also found similar results that learning models involving technology as a learning medium can help increase student interest and learning achievement.

Based on the results of the research and discussion above, it shows that through the media "Race Quiz" can increase the interest in learning mathematics of students in class VII D SMP Negeri 3 Lawang in the 2023-2024 school year. From the overall

learning that has been applied in cycle I and cycle II, there still needs to be a lot of development, because with the advancement of the times technology-based learning media is also growing. There are still many developments that are more innovative and creative. Therefore, researchers hope that teachers can be more active in participating in various educational technology training, in order to further optimise learning activities by applying technology-based learning media.

4. CONCLUSION

Based on the results of the research and discussion above, it can be concluded that through the media "Race Quiz" can increase the interest in learning mathematics of students in class VII D SMP Negeri 3 Lawang in the 2023-2024 school year. This can be proven in the learning process increased by 6% from 76% in cycle I to 82% in cycle II, so that it can be categorised as very high, although based on student observations in cycle I there were still perceived obstacles, but in cycle II it showed a significant increase. Overall, the learning that has been applied in cycle I and cycle II is good, it's just that it still needs a lot of development, because information technology is not enough to stop there. There are still many developments that are more innovative and creative. So the researcher hopes that teachers can be more active in participating in various educational technology training, so that they can be maximised in the application of information technology-based learning media.

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