



The Influence Of Rme-Based Teaching Media Assisted By The Pixton Application On Students' Interest In Learning Mathematics

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Abstract

The type of research conducted was quantitative research using quasi-experimental methods and The Pretest-Posttest Non-Equivalent Control Group design with the aim of knowing significant differences between RME teaching media assisted by the pixton application and conventional teaching media on students' interest in learning mathematics and which learning media is more affective . The samples used were students of class VIII.2 as the control class and students of class VIII.6 as the experimental class. The data collection process uses a questionnaire using a Likert scale, where the Likert scale is an ordinal scale, so the data analysis uses non-parametric statistics Mann Whitney U test. Based on data analysis with the Mann-Whitney U test, Asymp.Sig values are obtained (2- tailed) is 0.029. This significance value is less than 0.05 which results in H_0 being rejected and H_1 being accepted. So from this analysis it can be concluded that learning media based on Realistic Mathematics Education assisted by the pixton application is proven to be more affective in increasing students' interest in learning mathematics in SPLDV material compared to conventional learning.

Keywords: Student Interest, RMR, Comic, Pixton

1. Introduction

Human behavior in the field of education is greatly influenced by technological developments. Technological developments influence learning activities (Keeping Up With AL, 2021). During the learning and teaching process, a teacher should understand and be able to use technology. Opinion (Dewi, 2019) Less varied methods and media will make the class monotonous and the monotonous atmosphere makes students interested in learning. Opinion Witanta et al., (2019) The factor that influences students to master the material is the way the teacher delivers the material. In addition, in the opinion of Aminingsih & Izzati (2020), some students think mathematics is difficult even though mathematics is an important reference in the development of science. Students think math is a difficult subject to complete and boring because there are so many formulas and calculations that must be learned. Teachers who are less creative can make students feel bored and bored so that students do not have the desire and interest to learn (Mujahadah et al., 2021). In the opinion of the teacher, it must be able to choose the right learning media to attract students to more easily understand the material. The development of information and communication technology can be utilized to create innovative learning media. The incorporation of media into the process of teaching and learning activities can trigger new desires and interests of students (Irmayanti et al., 2023). Learning media has several types, including audio media, visual media, animation media, audio-visual media, and so on. In this study, the media to be used is application-assisted comic media *pixton*. Comics are non-projection language



learning media in the form of interesting images and writing. Researchers hope that with this comic media students can be more interested in paying attention to the material delivered by the teacher.

In addition to interesting learning media, an interesting approach can also support the high interest in student learning. The approach used in this study is the *Realistic Mathematics Education* (RME) approach or the Realistic Mathematics Approach (PMR). In Rismayanti's opinion (2021), a realistic mathematical approach is oriented towards mathematical problems that are in context with everyday life. Learning mathematics at school aims to build students' skills in solving real-life problems. The use of comics is felt to be more attractive to students to learn and because RME uses contextual problems in real life, students can be even more interested because it is in accordance with what is happening in their environment.

From several studies that have been conducted before, to increase student interest in learning through PMR / RME has been widely researched such as research (Ayu Aulia Rahma & , Fatkul Anam, Suhartono, 2022); (Dyah Anungrat Herzamzam, 2018); (Syelfia Dewimarni et al., 2022); (Sari, 2022); The development of comic-based teaching media has also been done a lot (Masruroh, 2019); (Mujawal et al., 2018); (Subroto et al., 2020). Research using application-based comic media *Pixton* has also been done (MUFARROCHAH, 2022); (Handayani et al., 2023); (Kurniawan et al., 2019). However, research on learning interests using application-based teaching media *Pixton* Using a realistic mathematical approach does not yet exist. From previous research that has been carried out, the latest of the research to be carried out is the use of teaching media based on realistic mathematical approaches assisted by applications *Pixton* as an effort to increase students' interest in learning mathematics. Therefore, the title of this study is "The Influence of Teaching Media Based on Application-Assisted Realistic Mathematical Approaches *Pixton* towards Students' Interest in Learning Mathematics"

2. Method

The type of research conducted is quantitative research using *quasi-experimental methods* and the design of *The Pretest-Posttest Non-Equivalent Control Group*, which involves two different groups. The purpose of this study was to determine the difference between teaching media based on the Realistic Mathematics Approach (PMR) or *Realistic Mathematics Education* (RME) assisted by the *Pixton* application and conventional learning on students' interest in learning mathematics. The teaching media used is valid and suitable for use. The population in this study is all grade VIII students of SMP Negeri 8 Palembang for the 2022/2023 school year consisting of eleven classes, where each class has students. Then for the sample, researchers used ± 30 *purposive sampling techniques*. According to Sugiyono (2019), *purposive* sampling technique is a sampling technique by considering certain things and is usually used for quantitative research. Researchers set two samples, namely the experimental class and the control class. Where 33 students from class VIII.6 for the experimental class and 29 students from class VIII.2 for the control class. In the experimental class, they were treated using teaching media based on a realistic mathematical approach assisted by the *Pixton* application, while in the control class they used conventional learning. This research was conducted in October 2022 with 3 meetings for each class.

Data collection in this study used a learning interest questionnaire data collection technique that had been consulted with the supervisor and then validated by Mrs. Novita Sari, M.Pd and Mrs. Zuli Nuraeni M, Pd as lecturers of Mathematics Education FKIP Sriwijaya University. In addition, the questionnaire was carried out reliability using *Cronbach's Alpha* with a result of 0.781, this value shows that the questionnaire has been reliable. The results of the learning interest questionnaire are used to obtain data on students' interest in learning mathematics through teaching media based on realistic mathematics or *Realistic Mathematics Education* assisted by the *Pixton* application and through conventional learning and testing hypotheses that have been set. In testing the accuracy of teaching instruments and media and the extent to which these instruments and teaching media are trusted, expert validation has been carried out by 2 lecturers and 1 teacher for teaching instruments and media and proven to be valid, then for teaching media has also been tested one to one, small group to grade VIII students before actual research is carried out.



Questionnaires will be distributed before learning and after learning in experimental classes and control classes with questionnaires with the same indicators and number of items. According to (Sukmaningthias, 2017) and (Winanti, 2022) Interest in this study is limited by four indicators:

- a. Attention
- b. Interest
- c. Curiosity
- d. Choice

After obtaining the value, then the hypothesis test will be carried out, which is as follows.

$H_0 : \mu = \mu_0 \rightarrow$ There is no significant difference in students' interest in learning mathematics using teaching media based on realistic mathematical approaches assisted by *the Pixton application* and conventional teaching media on students' interest in learning mathematics

$H_1 : \mu \neq \mu_0 \rightarrow$ There are significant differences in students' interest in learning mathematics by using teaching media : $\mu \neq \mu_0 \rightarrow$ based on realistic mathematical approaches assisted by *the Pixton application* and conventional teaching media to students' interest in learning mathematics

In this study, researchers used non-parametric statistics of the *Mann-Whitney* test to obtain data using questionnaires that use the Likert scale, where the Likert scale is an ordinal scale. In this study, statistical tests will use the help of IBM SPSS *Statistics 26 for windows application*.

Basis for decision making in the test *Mann Whitney*:

- 1. If the value is *Asymp. Sign (2-tailed)* > 0.05 then H_0 is accepted
- 2. If the value is *Asymp. Sign (2-tailed)* < 0.05 then H_0 rejected

3. Results and Discussion

The research was conducted in two classes, namely the experimental class and the control class. In the experimental class, *treatment* or treatment in the form of PMR-based teaching media assisted by the *Pixton* application and as a comparison given *treatment* or conventional learning treatment in the control class. Measurements will be carried out twice on two groups, namely before treatment and after *treatment*

For the experimental class, the first measurement is carried out by distributing questionnaires before treatment *which is used to describe students' learning interests before being given treatment*. After that, the experimental class was given *treatment* using teaching media based on a realistic mathematical approach assisted by the *Pixton application*. While in the control class only given *treatment* in the form of conventional learning. Furthermore, measurements were carried out again by distributing questionnaires after doing *post-tests* to describe students' interest in learning mathematics after being given *treatment* and to see if there were significant differences in students' interest in learning mathematics using teaching media based on realistic mathematical approaches assisted by *the Pixton* application and conventional teaching media for students' interest in learning mathematics

Table 1 Data on learning interest questionnaires before and after treatment in the control class

| Descriptive Statistics | | | | | | |
|------------------------|----|-----|-----|-------|---------|---------|
| | N | Min | Max | Mean | Standar | Deviasi |
| BEFORE CONTROL | 29 | 38 | 80 | 63.52 | | 9.199 |
| AFTER CONTROL | 29 | 41 | 84 | 68.59 | | 8.305 |
| Valid N (listwise) | 29 | | | | | |



Based on table 1, the interest in learning mathematics in the control class or with conventional learning before doing the *pretest* was 63.52, while after being treated and doing the *posttest* was 68.59. From this value, it can be seen that students' interest in learning has increased by 5.07. But it is not yet known statistically whether there is indeed an influence of conventional teaching media on student learning interest.

Table 2 Data on learning interest questionnaires before and after treatment in experimental classes

| Descriptive Statistics | | | | | |
|------------------------|----|-----|-----|-------|-----------------|
| | N | Min | Max | Mean | Standar Deviasi |
| BEFORE EXPERIMENTS | 33 | 50 | 88 | 67.91 | 9.149 |
| AFTER THE EXPERIMENT | 33 | 54 | 94 | 74.21 | 9.733 |
| Valid N (listwise) | 33 | | | | |

Based on table 2, it can be seen that the interest in learning mathematics in experimental classes or by learning using PMR/RME-based teaching media using the help of the *Pixton* application before doing the *pretest* was 67.91 while after being treated and doing the *posttest* was 74.21. From this value, it can be seen that learning using PMR/RME-based teaching media using the help of the *Pixton* application in the experimental class increased by 6.3. But it is not yet known statistically whether there is indeed an influence of PMR/RME-based teaching media using the help of the *Pixton* application on student learning interest.

Data collection using a learning interest questionnaire using a Likert scale in the form of ordinal data, the statistical test uses the *Mann-Whitney U Test* which is a non-parametric test to compare two independent sample samples in increasing students' interest in learning mathematics using RME-based teaching media assisted by the *Pixtoon* application with conventional teaching media. This test involves *post-test questionnaire* data or questionnaires that are distributed after treatment in the experimental class and control class which are then processed using the help of *IBM SPSS 26*. The results of the static test can be seen in table 3.

Table 3 Mann-Whitney U Test Results

| Ranks | | | | |
|----------------------|------------|----|-----------|--------------|
| | CLASS | N | Mean Rank | Sum of Ranks |
| INTEREST IN LEARNING | EXPERIMENT | 33 | 36.18 | 1194.00 |
| | CONTROL | 29 | 26.17 | 759.00 |
| | Total | 62 | | |

Table 3 shows that the results of the questionnaire in the experimental class after treatment have an average of 36.18, this result is higher than the average rank of the questionnaire results after the control class after treatment, which is 26.17.



Table 4 Mann-Whitney U Significance Values

| Statistical Test | |
|-----------------------------|---------|
| INTEREST IN LEARNING | |
| Mann-Whitney U | 324.000 |
| Wilcoxon W | 759.000 |
| Z | -2.183 |
| Asymp. Sig. (2-tailed) | .029 |
| a. Grouping Variable: CLASS | |

From table 4 shows the result that the value of *Asymp.Sig (2-tailed)* is 0.029. this signification value is smaller than 0.05 which results in H_0 being rejected. This means that there are significant differences in students' interest in learning mathematics by using teaching media based on realistic mathematics approaches or *Realistic Mathematics Education* assisted by *the Pixton application* and conventional teaching media for students' interest in learning mathematics at SMP N 08 Palembang.

From the results of the analysis of *the Mann Whitney U* statistical test in table 4, a research hypothesis test will be carried out. The hypotheses proposed in this study are:

H_0 : There is no significant difference in students' interest in learning mathematics using teaching media based on realistic mathematics approaches assisted by *the Pixton application* and conventional teaching media on students' interest in learning mathematics

H_1 : There are significant differences in students' interest in learning mathematics by using teaching media based on realistic mathematics approaches assisted by *the Pixton application* and conventional teaching media to students' interest in learning mathematics

The basis for decision making uses the *Asymp.Sig coefficient* with the following conditions:

- *Asymp. Sig (2-tailed)* > 0.05 then H_0 is accepted
- *Asymp. Sig (2-tailed)* < 0.05 then H_0 is rejected (Fiana et al., 2019)

Based on the calculation results of the *Mann Whitney U* test, the significance table of 0.029 which means smaller than 0.05 ($0.029 < 0.05$), it can be concluded that the difference in students' interest in learning mathematics is significant by using teaching media based on realistic mathematical approaches assisted by *the Pixton application* and conventional teaching media on students' interest in learning mathematics.

For data obtained from the results of student responses before *treatment* in the control class as a whole amounted to 63.51% and after treatment was given 68.58%. The following is a table of responses to questionnaires of interest in learning in the control class before and after treatment.

Table 5 Results of Questionnaire Response in Control Class Before *treatment*

| Learning Interest Indicators | Percentage (%) | Category |
|------------------------------|----------------|----------|
| Attention | 69% | Good |
| interest | 62% | Good |
| Curiosity | 62% | Good |
| choice | 56% | Not Good |
| sum | 63% | Good |

Table 6 Results of Questionnaire Response in Control Class After *treatment*

| Learning Interest Indicators | Percentage (%) | Category |
|------------------------------|----------------|----------|
| Attention | 74% | Good |
| Interest | 67% | Good |
| Curiosity | 67% | Good |



| | | |
|--------|--------|------|
| Choice | 62% | Good |
| Sum | 68,58% | Good |

Based on table 5, it can be seen that the smallest indicator is the preferred indicator by 56% with the category of not good. The attention indicator is 69% with a good category. Interest indicator of 62% with good category. The curiosity indicator is 56% with a good category. Overall, the indicators of student interest in learning interest in the control class before being given overall treatment were included in the good category. Based on table 6, it can be seen that the smallest indicator is the preferred indicator of 62% with the category of not good. Attention indicator of 74% with good category. The interest indicator is 67% in the good category. The curiosity indicator was 67% with a good category. Overall, the indicators of student interest in learning interest in the control class before being given overall treatment were included in the good category.

For data obtained from the results of student responses before *being* given treatment in the experimental class as a whole amounting to 57.59% and after *being given treatment* 74.18% The following is a table of the results of questionnaire responses to learning interest in experimental classes before *treatment*.

Table 7 Results of Questionnaire Responses in Experimental Classes Before *treatment*

| Learning Interest Indicators | Percentage (%) | Category |
|------------------------------|----------------|----------|
| Attention | 56% | Not Good |
| Interest | 59% | Not Good |
| Curiosity | 61% | Not Good |
| Choice | 51% | Not Good |
| Sum | 57,69% | Not Good |

Table 8 Results of Questionnaire Responses in Experimental Class After *Treatment*

| Learning Interest Indicators | Percentage (%) | Category |
|------------------------------|----------------|-----------|
| Attention | 79% | Excellent |
| Interest | 73% | Good |
| Curiosity | 71% | Good |
| Choice | 70% | Good |
| Sum | 74,18% | Excellent |

Based on table 7, it can be seen that the smallest indicator is the preferred indicator of 51% with the category of not good. The indicator of attention is 56% with a good category. Interest indicator of 59% with good category. The indicator of curiosity is 61% with a good category. Overall, the indicators of student interest in learning interest in the control class before being given overall treatment were included in the category of less good. Based on table 8, it can be seen that the smallest indicator is a selected indicator of 70% with a poor category. Attention indicator of 79% with good category. Interest indicator of 73% with good category. The curiosity indicator was 71% with a good category. Overall, the indicators of student interest in learning interest in the control class before being given overall treatment were included in the very good category.

As for each indicator, it still shows that students' interest in learning is still not good. However, each indicator increases in percentage when it has been given treatment. In the control class for attention indicators rose by 5%, interest indicators rose by 5%, curiosity indicators rose by 5% and choice indicators rose by 6%, overall for the control class the percentage of student learning interest rose by 5.58%. Not only the control class that experienced an increase in experimental class also increased for each indicator, for attention indicators increased by 23%, interest indicators increased by 14%, curiosity indicators increased by 10% and choice indicators increased by 19%, overall for control classes the percentage of student learning interest increased by 16.49%. From these results, it can be seen, in



general, that students' interest in learning through teaching media based on realistic mathematical approaches assisted by *the Pixton* application is better than conventional teaching media. This result is also in accordance with the results of statistical analysis conducted that learning using teaching media based on a realistic mathematical approach is higher than conventional teaching media.

With use Teaching Media Based *Realistic Mathematics Education* (RME) assisted applications *Pixton* And conventional teaching media can increase students' interest in learning. The results of the analysis that have been carried out show a significant increase in the results of the analysis of the learning interest questionnaire that has been distributed. This is because the response of students during learning is quite good even though there are still some students who do not pay attention and are still cool themselves then also because of application-based teaching media *Pixton* It's still relatively new to them so they're pretty eager to learn. This is also in line with the research carried out (MUFARROCHAH, 2022) that use of the application *Pixton* Still relatively new but can be used to attract respondents to things that are considered difficult.

The results of the research analysis also showed that teaching media based on RME (*Realistic Mathematics Education* App-assisted *Pixton* better than conventional teaching media. This can be seen from the results of the average value analysis obtained from descriptive analysis and analysis results *Mann Whitney* It can be seen that the value of students' interest in learning mathematics is higher in experimental classes that use teaching media based on realistic mathematical approaches assisted by applications *Pixton* rather than control classes that use conventional teaching media. By applying the real concept of daily activities. This is in line with Siskanti's (2021) opinion that mathematics is a science related to real life according to In addition, PMR / RME is an approach that can attract students to learn because PMR directs students to their real lives (Tutiareni et al., 2021) Then also in this study in line with the research conducted by (Dyah Anungrat Herzamzam, 2018) that PMR / RME can increase students' interest in learning because they are given several steps including the following: understanding contextual problems, describing and solving contextual problems, comparing and discussing answers and finally drawing conclusions.

3 Conclusion

This study was conducted to see whether there are significant differences between teaching media based on *Realistic Mathematics Education* assisted by *the Pixton* application and conventional learning on students' interest in learning mathematics. Based on the results of data analysis that has been carried out, the *value of Sig. (2 tailed)* is 0.029, which means that this value is smaller than the level of signification, which is 0.05 so that from the hypothesis that has been proposed, there are differences in students' interest in learning mathematics with teaching media based on realistic mathematical approaches or *Realistic Mathematics Education* assisted by *the pixton* application and conventional teaching media. Then it can be seen from the results of descriptive statistical analysis that the average value of the questionnaire results after being treated in the experimental class is higher than the average rating value of the questionnaire results after being treated in the control class.

With the help of teaching media provided to students, it is hoped that students will be more enthusiastic about learning further, it is hoped that teachers can apply teaching media based on realistic mathematics approaches or *Realistic Mathematics Education* assisted by the *Pixton application* for other materials to trigger student learning interest, and is expected to be a reference in conducting further research

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