



The Effectiveness Of Digital Media Mari Belajar On Human Movement System Material To Foster Curiosity Of Grade VI Elementary School Students

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Keywords

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Abstract

This study aims to assess the effectiveness of digital learning media "Mari Belajar" in increasing the curiosity of grade VI elementary school students on the material of the human motion system. The method used was quantitative with a one-group pre-test and post-test experimental design, and saturated sampling technique involving 25 students. The research instruments included pre-test and post-test questionnaires and observation sheets. The results showed that this media was very valid with an Aiken index of 0.992188. The paired sample t-test produced a p-value of 0.00, which showed a significant difference before and after using the media. Observations showed a high level of student curiosity, with an average of 90% on the indicators of asking questions and actively seeking information, and 91% on enthusiasm. In conclusion, the "Mari Belajar" media proved effective in increasing students' curiosity, improving learning quality, and motivating students to learn more actively.

1. Introduction

Education is not just a process of teaching and learning, but also a solid foundation for students' character building, leadership and positive contribution in building a better future. Through education, individuals are given the opportunity to hone ethical, moral and integrity values to become the main foundation for a strong and responsible character. According to Law No.3 on the National Education System, "Education is a conscious and planned effort to create a learning atmosphere and learning process so that students actively develop their potential to have religious spiritual strength, self-control, personality, intelligence, noble character, and skills needed by themselves, society, nation and state".

In an effort to empower attitudes and abilities and basic knowledge that can be obtained through education in elementary school. One of the subjects taught in primary school is the subject of Natural Sciences (IPA). This subject studies natural phenomena and is factual. According to Saputra & Uliyanti (2018), science learning is a science derived from a collection of systematic theories whose application is carried out by scientific methods in the form of experiments and thus creating curiosity and honesty.

In reality, there are still many problems in learning science in schools. In the implementation of learning, the delivery of material is only teacher-centred by using too many lecture methods, so that learning is less active. In addition, the limited use of media by only using conventional media in the form of textbooks results in monotonous learning. So, teachers should be creative in choosing media so that they can help students absorb the learning content to be taught (Nurfadhillah et al., 2021). Therefore, the ability and creativity of teachers in finding interesting learning media and in accordance with the material being taught is needed so that students are interested and interested in the learning process. Thus, learning activities can be carried out effectively.

Learning can be said to be successful if students in the learning process have seriousness and interest in following the learning process. As stated by (Emda, 2018) seriousness in learning can occur when students have a growing desire to follow the learning process from themselves. The desire that grows from oneself is said to be curiosity. Strong curiosity can be the main driver for students to actively engage and participate more effectively in learning activities.

In supporting the learning process, curiosity is one of the important factors. A person is considered curious if they usually pay more attention to an activity, manage information in depth, have the ability to remember information well, and increased motivation to complete the task until the end (Raharja & Wibhawa, 2018). Through this curiosity, students do not need a strong external push to learn. They are able to go through the learning process naturally. With this, empowering curiosity in students is considered as a very important thing.

The results of interviews with grade VI teachers at SDN Bayeman 1, show that in learning the material of the human movement system, teachers do not utilise interesting learning media and only rely on conventional media. This is in line with interviews with students which show that interactive learning media is not used by teachers, but teachers only use textbooks as the main media. Learning that only relies on reading books makes students feel a lack of variety and interaction in the learning process, which results in low student interest and curiosity.

The application of innovative technology-based media is believed to be able to empower students' curiosity. In addition, the application of innovative media that contains elements of games, students can be directly involved. This media not only creates an interesting learning experience, but also opens up opportunities for more active discussion, exploration and discovery. In this situation, the use of interactive and engaging learning media can be an efficient solution. By using media that engages students, learning activities can be fun as well as effective in maintaining students' interest during the learning process as it stimulates students' curiosity (Oktavioni, 2017). Thus, the use of learning media that is more interactive and supports student curiosity can be a positive step in improving learning effectiveness.

Based on these problems, innovation in learning media is needed to create dynamic and interesting activities for students, in accordance with current technological developments. This step can help students and teachers in the learning process, increase student enthusiasm, and make students more active. An effective solution is to use games as learning media, which is proven to increase students' curiosity and make learning more fun.

It is hoped that this research can have a significant effect in the application of effective and interesting media for grade VI elementary school students. In addition, it is hoped that through this research it can find methods and techniques that improve the quality of learning and optimise student understanding. It is hoped that the results of the research can be the basis for further development in the field of education, especially in the application of media that is appropriate and responsive to the needs of students..

2. Method

This study uses a quantitative approach with a one-group pre-test and post-test experimental design. This study aims to evaluate the effectiveness of the application of digital learning media "Mari Belajar" in empowering students' curiosity. The research sample consisted of 25 students. Data collection techniques were observation, interview, and questionnaire to measure students' curiosity level. The instruments used included pre-test and post-test questionnaires and student curiosity observation sheets. Data analysis applied using several techniques including normality test, hypothesis test, and effectiveness test in the form of paired sample t-test to analyse the questionnaire that has been given to students.

3. Results and Discussion

Instrument validation was carried out by material experts, namely lecturers from the State University of Malang, the curiosity instrument showed very positive results. The instrument was judged to be usable without requiring revision by the validator. Whereas by validator 2 the instrument was declared usable with minor revisions, indicating that this instrument has met the expected quality standards in measuring student curiosity. In addition to validation by material experts, the student curiosity questionnaire instrument has been validated using the Aiken index. The Aiken Index of the pre-survey and post-survey instruments consisting of 15 items obtained a validation result of 0.992188, which indicates that the instrument has very high validity results. This indicates that all the items are very valid and indicates that the instrument is able to measure student curiosity.

The items in this questionnaire are grouped based on the three main indicators that measure students' curiosity. The grouping of items based on these indicators aims to ensure that each aspect of student curiosity is measured clearly and separately. Items 1-5 refer to the indicator of asking about the subject matter. The questions on these items discuss students' ability to ask questions that reflect their curiosity and active involvement in learning activities. In line with the opinion of (Mustari, 2017) which suggests that curiosity can be interpreted as an action of always trying to want to know more about what a person sees and learns.

Then items 6-10 in the questionnaire were declared valid because they contained indicators of curiosity, namely student activeness in seeking information. This indicator measures how proactive students are in exploring information beyond what has been provided by the teacher. The validity of these items shows that the questionnaire is effective in evaluating students' ability to seek and use additional information independently. In the context of constructivism theory, the indicator of activeness in seeking additional information is very relevant. Learning is students actively developing new knowledge based on their experiences and knowledge they already have. (Anidar, 2017). According to constructivism theory, students do not just passively receive information they are actively involved in the learning process to form an understanding based on their own experience.

In the last item, namely items 11 -16, the questions are said to be valid because they contain indicators of curiosity, namely enthusiasm during the learning process. This indicator measures the extent to which students show enthusiasm and interest during learning activities. The validity of this indicator is very high based on the results of validation with Aiken, which shows that this measurement is accurate and reliable. Low curiosity is often a major barrier to learning. When students lack enthusiasm and do not show enough interest during learning, they tend to be inactive in teaching and learning activities, which in turn can affect their learning outcomes. For example, research conducted by Saraswati (2017) found that one of the causes of low student achievement in school is a lack of intrinsic motivation, including curiosity.

There is a questionnaire to determine the curiosity given to students which includes several indicators. Each indicator in this questionnaire can be used as a measure of the level of student independence in the learning process. The following is Figure 5.1 which displays the percentage of pre-surveys and post-surveys.

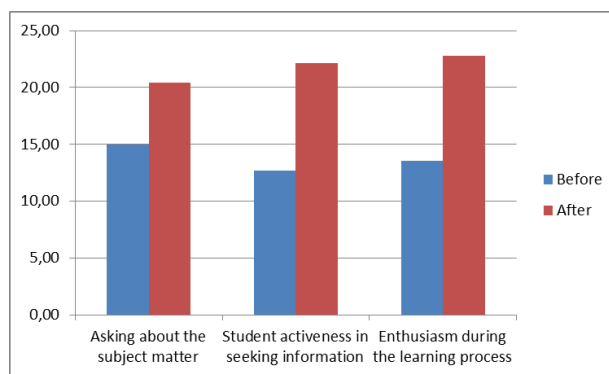


Figure 5.1 Histogram of Pre-survey and Post-survey

Based on Figure 5.1, the indicator of asking about the subject matter shows a significant increase. The value before the use of "Mari Belajar" media was around 15.00, while the value afterwards increased to around 20.00. This increase shows that students become more active in asking about the subject matter after using this learning media. This finding is supported by the results presented by Ardhani (2021) who found that well-designed media can increase curiosity. This proves that students who are actively involved are more likely to ask questions and seek information from other sources.

In the indicator of actively seeking information, the score before the use of "Mari Belajar" media was around 10.00, while the score afterwards increased to around 20.00. The increase

shows that students' activeness in seeking information is high and relevant after using this media. The significant increase in this indicator shows that the "Mari Belajar" media succeeded in encouraging students to be more proactive in finding information. This is important in the digital era, where the ability to search for information independently is needed. "Mari Belajar" media is designed to facilitate students in exploring and finding information with various interactive features that stimulate curiosity. In addition, easy access and speed to relevant information sources make students more motivated to find out more. The presentation of materials that are varied and appropriate to learning needs also plays an important role in making students feel interested and engaged in the learning process. This improvement can be explained through cognitive theory, i.e. learning occurs when the information acquired is well developed and recorded in long-term memory. "Mari Belajar" media provides the right stimulus so that information is more easily processed and remembered by students.

In the enthusiasm indicator during the learning process, the value before the use of "Mari Belajar" media was around 13.00, while the value afterwards increased to around 20.00. This increase shows that students are more enthusiastic during the learning process after using this media. The significant increase in this indicator shows that the "Mari Belajar" media succeeded in increasing students' enthusiasm in the learning process. An active educational environment that encourages students' enthusiasm to continue learning can be created if students' enthusiasm in learning is high. The attractiveness and interactivity of learning media can significantly increase student enthusiasm, as stated by (Ariya & Arini, 2021) that well-designed learning media can make students more emotionally and cognitively involved in the learning process. Interactive media provides an exciting learning experience and keeps students actively involved.

This study also tested the effectiveness to determine the difference in the use of digital media "Mari Belajar". The effectiveness test was tested using Paired Samples t-Test, resulting in a value of $0.000 < 0.05$. In addition, the digital media "Mari Belajar" was proven to significantly increase student curiosity, as shown by the increase in the average student questionnaire score from 41.32 in the pre-assessment to 69.72 in the post-assessment. This indicates that the application of interactive media in learning tends to make them ask questions and seek information about the material (Fauziah, 2022). Well-designed learning media can significantly empower students' curiosity.

"Mari Belajar" digital learning media is very effective in fostering students' curiosity. The histogram graph shows a significant increase in all three indicators after the use of this digital learning media. "Mari Belajar" succeeded in creating a learning environment that supports the principles of constructivism and cognitive, motivating students to actively ask questions, seek information, and be enthusiastic when learning takes place. Thus, the application of this media is highly recommended as an effective tool.

Besides using questionnaires, there were also observations to observe students' curiosity. Observations were conducted by two observers who recorded and analysed student behaviour during learning. This technique was chosen to obtain accurate and objective data regarding the increase of students' curiosity through learning media. The observed aspects include the frequency and quality of students' questions, the activity of seeking additional information, and the level of enthusiasm during learning. Data from two observers were analysed based on three indicators.

On the indicator of asking questions about the subject matter, both observers gave an average score of 90%. This shows that the majority of students actively ask questions related to the material learnt. During learning, students often ask questions about difficult-to-understand concepts in the human movement system, such as the mechanism of muscle function and joint function. In addition, the "Mari Belajar" media provides interactive features that allow students to ask questions directly through the platform, which are then answered by the teacher or through group discussions. Students' courage in asking more in-depth questions shows that students' curiosity is high.

When students actively ask questions, they are not only looking for answers but also engaging in critical and analytical thinking processes. This process allows students to integrate new information with past knowledge, which ultimately increases their understanding and intelligence. In line with Suparlan's opinion (2019) who argues that activeness is important because it can

increase their intelligence. Therefore, the high activeness of students in asking questions during learning by using "Mari Belajar" media not only shows high curiosity but also has the potential to increase their intelligence.

As in the previous indicator, in the indicator of actively seeking information, the average value obtained is 90%. This shows that students are proactive in seeking additional information to deepen their understanding. In learning activities, students try to find various learning resources available in the "Mari Belajar" media, such as learning videos, materials, and interactive games. Students also actively participate in group discussions, sharing the information they find with classmates.

Active information seeking supports the principle of self-directed learning, where students actively seek and construct their own knowledge. This active information seeking process supports the principle of self-directed learning, where students actively seek and construct their own knowledge, which strengthens exploration and research skills. Constructivist theory emphasises that learning is an active process where students' knowledge is reconstructed through direct experience and interaction with the environment. In this case, students' activeness in seeking information through interactive media reflects the principles of constructivism, as they do not just passively receive information but also construct their own understanding.

In addition, cognitive theory highlights the importance of deep information processing and critical evaluation of information sources to develop higher-order thinking skills. By actively seeking information and participating in discussions, students develop the cognitive skills necessary for critical and analytical thinking, which in turn improves their understanding and retention of learning materials.

In the third indicator, namely enthusiasm during the learning process, the average score obtained was 91%, which was the highest score among the three indicators. The achievement of this highest score indicates that students were very enthusiastic and actively involved during the learning process using the "Mari Belajar" media. "Mari Belajar" media is designed to be interactive and engaging, enhancing students' participation in the learning process. Features such as interesting learning videos, interactive materials, and educational games are able to make learning activities more exciting so that it can increase students' motivation to actively participate in learning. (Widiyanti & Ulfa, 2019). When students enjoy the learning process and feel interested in the material, they tend to be more emotionally and cognitively engaged, which contributes to their increased enthusiasm.

Overall, the use of "Mari Belajar" learning media proved successful in stimulating students' curiosity. This is indicated based on the high average scores on the three indicators of asking questions about the subject matter (90%), activeness in finding information (90%), and enthusiasm during the learning process (91%). These high scores indicate that the "Mari Belajar" media is effective in encouraging students to be more active and enthusiastic in learning, which is important for creating a dynamic learning environment. The very high validity of the questionnaire instrument strengthens the results of this research, thus ensuring that the data obtained is precise and reliable. In addition, the effectiveness results are significant with an increased average score and a significance value (sig tailed) of 0.00. Therefore, "Mari Belajar" media can be declared effective media in empowering students' curiosity, activeness, and enthusiasm.

4. Conclusion

The results of the study indicate that the questionnaire instrument has excellent validity, with an Aiken validity index of 0.992188. The digital learning media "Mari Belajar" proved to be effective in increasing students' curiosity on the material of the human movement system, as seen from the increase in the average score and the highest score on the questionnaire and the statistical test results which showed a p-value of 0.00 (Sig < 0.05). Observations showed a significant increase in student curiosity, with an average score of 90% for the indicator of asking questions about the subject matter, 90% for actively seeking information, and 91% for enthusiasm during the learning.

Author Contributions

CrediT roles: Isnaeny Nurdiana Anggraeni: Conceptualization, Data curation, Formal analysis, Investigation, Resources, and Visualization. Candra Utama: Methodology, Roles/Writing—original draft. Sri Estu Winahyu: Writing—review and editing. All authors have equal contributions to the paper. All the authors have read and approved the final manuscript.

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