

UTILIZING MATHEMATICS APPLICATIONS AND ANIMATED VIDEOS TO INCREASE STUDENT INTEREST AND UNDERSTANDING

Rida Triyana¹, Sukma Latifah², Ribkhiyatun Nasikah³,
Afrieza Juliawan Mahzumi⁴, Rasilah⁵

ridatriyana3006@gmail.com¹, sukmalatifah65@gmail.com², ribkiyatun14@gmail.com³,
afriezajuliawanmahzumi@gmail.com⁴, rasilah.pramuka@gmail.com⁵

STKIP NU Indramayu

Article Info

Article history:

Published June 30, 2024

Keywords:

Mathematics, Application,
Animated videos
Student.

ABSTRACT

Mathematics is one of the main subjects in elementary school (SD) which functions to hone students' logical, critical and systematic thinking skills. However, many elementary school students face difficulties and lack interest in studying mathematics. Several contributing factors include less interesting learning methods, abstract mathematical concepts, and minimal use of interactive learning media. The use of technology in learning, such as mathematics applications and animated videos, can be an effective solution for increasing elementary school students' interest and understanding in learning mathematics. Mathematics applications and animated videos present mathematics material in a way that is more interesting, interactive and easy for students to understand.

1. INTRODUCTION

Education is the main key to paving the way to a bright future. In an era of globalization full of challenges and opportunities, individuals who are educated and have strong skills become valuable assets for the nation and state. Education is not only about the transfer of knowledge and information, but also about character formation, instilling moral values, and optimally developing one's potential. Through education, individuals can learn to think critically, creatively, and innovatively, as well as develop the ability to solve problems and adapt to change.

Mathematics is a very important discipline in everyday life and has been introduced from an early age. Many of our daily activities involve the use of mathematics. Mathematics has a significant impact on human life. Whether they realize it or not, every individual cannot be separated from mathematics. However, for many people, mathematics is considered a very tough and difficult field of study (Huda, M., Mutia, M., 2017). The general perception that mathematics is a difficult subject has unconsciously influenced students' thinking. As a result, students also consider mathematics as something difficult when they have to study it (RY Gazali, 2016). Mathematics is a universal science that is important for various scientific disciplines and the development of human thought, and is the basis for the development of modern technology. Therefore, mathematics must be taught to all students from primary to secondary school levels to equip them with logical, analytical, systematic, critical and creative thinking skills and to help them solve everyday mathematical problems. (Mashuri, S., 2019). Mathematics is a global and

universal scientific discipline, whose existence transcends national boundaries and is widely accepted without any prohibitions from any religion. Mathematics is not involved in politics and cannot be politicized. Its existence is very important for the world and continues to develop according to human needs, because almost all human activities and behavior involve mathematics. Mathematics has become the queen and servant of other sciences and always develops along with human needs for technology. Therefore, mathematics is taught at every level and type of education, adapted to the needs of each level. In Indonesia, mathematics is one of the main subjects taught from primary education to senior secondary education (Kamarullah, 2017). Mathematics learning is a complex activity, involving various elements such as teachers, students, the characteristics of mathematics itself, and the ongoing learning situation. Because of this complexity, the learning process cannot be simplified to just a recipe to help students learn (Sumarno, U., 2011). In general, many students consider mathematics subjects to be difficult. Until now, many students experience difficulties and are afraid to learn mathematics. One of the causes is monotonous learning methods or because the process of learning mathematics is not enjoyable. Therefore, learning alternatives are needed that can make mathematics more interesting and fun, one of which is by utilizing existing applications provided by third parties (Rusmana, IM, 2020). With the increasing use of gadgets among adult society, especially with advances in information and communication technology, there has been a significant increase in various Android applications. This application covers various categories, such as gaming, business, social and educational applications. Among these various applications, math games stand out, providing a gaming experience similar to conventional games, but with the addition of great educational value, which helps users develop numeracy skills (Hakim, DL, & Sari, RMM, 2019). Apart from using mathematics applications, the use of animated videos has also proven effective in increasing students' interest and understanding of mathematics. One alternative that is highly recommended is interactive animated videos. With their visual appeal and interactive features, interactive animated videos are able to turn complex mathematical concepts into fun and easy-to-understand learning experiences. The specialty of interactive animated videos lies not only in their visual beauty, but also in their ability to actively involve students in the learning process. Students can participate by answering questions, taking quizzes, and interacting in simulations, making mathematics learning more dynamic and fun.

2. METHOD

The author uses a literature study research method, where he reads and collects journals, books and other literature as sources of information. In the next stage, the author collects books and scientific works that are related, related and relevant regarding the use of mathematical applications and animated videos to increase students' interest and understanding.

3. RESULTS AND DISCUSSION

a. The effect of using mathematics applications in increasing students' interest and understanding

The use of mathematics applications, especially in the form of games, has various impacts in improving students' numeracy skills. One of the main influences is increasing student learning motivation. The use of this application encourages students to take initiative in the learning process, which is reflected in their ability to find new ideas in solving problems and carry out concrete steps to realize these ideas. Studies show that

students who use math game applications tend to have more significant improvements in numeracy skills compared to those who do not use these applications (Hakim, DL, & Sari, RMM, 2019).

An educational game application called Timer Island, which can be accessed via desktop, provides a fun mathematics learning experience while providing entertainment for its users. With the Timer Island theme, this game attracts children's interest by displaying images of stars as a sign of the correct answer and providing images of trophies as a reward if the player succeeds in winning the game. Apart from that, the interactive Android-based math game application also offers interesting challenges for children, by presenting arithmetic operations in the form of actions from fish characters as a medium for learning mathematics. Users are asked to direct the fish to the selected answer as part of the game flow (Gunawan, E., & Sulistyowati et al., 2022). Using games or games as a learning medium is an effective solution because basically, games are a form of entertainment that can be fun. By integrating learning into games, children become more motivated in the learning process because they can play while learning simultaneously (Krisbiantoro, D., & Haryono, D., 2017).

Mathematics applications change the way of learning to be more interactive and far from the boring impression that is often associated with traditional methods that only use books and whiteboards. Mathematics applications offer a more dynamic and interesting learning experience by utilizing visualization and simulation to overcome difficulties in understanding abstract concepts in mathematics. Through the use of interesting images, animations and videos, students can understand mathematics material more easily and happily. Each student has a different learning pace and needs. With smart math apps, students can learn at their own pace and focus on the areas they need. This can help increase students' self-confidence and motivation to learn mathematics.

Math apps provide immediate feedback to students after they answer questions. This helps students to immediately recognize the mistakes they make and learn from them. In addition, mathematics applications provide many varied practice questions, allowing students to continue practicing and improving their understanding of mathematics material. The application also offers various levels of difficulty, from simple to complex, so students can learn according to their ability level without feeling too behind or overwhelmed.

b. The effect of using animated videos in increasing student interest and understanding

The use of animated videos as a tool in learning has been proven to have a positive impact on increasing student interest and understanding. By presenting an interactive and creative learning atmosphere, animated videos encourage students to participate more actively in teaching and learning activities. This contributes to increasing students' ability to read, remember and understand lesson material. Apart from that, animated videos are also effective in maintaining students' interest in the material being taught, making the learning process more interesting and far from boring (Wulandari et al., 2020). In particular, animated videos use a series of moving images to create interesting visuals, which can capture students' attention (Permatasari et al., 2019).

Using video or animation in education has been proven to increase the effectiveness of learning because it stimulates two human senses, namely sight and hearing (Apriansyah, 2020). The role of animated videos in education is very significant, optimizing the effectiveness and efficiency of teaching and producing better learning achievements. Here are some of the benefits of applying animation media in education: Animation media helps students understand complex concepts because of its flexibility as

a teaching aid. Animation media facilitates teachers in conveying lesson material more effectively. The use of animation media increases student satisfaction and learning success. Animation media has the potential to improve students' learning outcomes, attitudes and ways of learning, which ultimately increases their learning satisfaction and success. Apart from that, animation media also contributes to improving students' academic achievement, attitudes and learning methods (Sari & Samawi, 2017; Wahyuningsih, 2015).

In the learning design evaluation, the animated video received a perfect score of 100%, in the very good category. This video design utilizes carefully chosen color combinations to attract students' attention during learning. Choosing the right color also functions to reduce the possibility of errors in understanding the material. An attractive media display not only motivates students to learn, but also ensures ease of use and readability of the text in the video. From the aspect of learning design, this animated video succeeds in applying the principles of message design effectively. Clear and attractive images, the appropriateness of the animation used, and the use of language that is easy to understand all play a role in increasing student motivation. Motivation is a key factor that encourages someone to learn, so students need to have strong motivation to continue developing their knowledge, both inside and outside the school environment (Prasetya et al., 2021).

Video is a type of media that combines audio and visual elements. The combination of these two elements makes video a complex medium but still easy to understand. Video-based media conveys learning material by combining audio and visuals to explain concepts, principles and procedures, so that it can help students understand the learning material better (Fatmawati et al., 2018).

4. CONCLUSION

Education is the key to a bright future, involving the transfer of knowledge, character formation, and development of personal potential. Mathematics is considered difficult by many people, but it is important in everyday life and technological development. Mathematics is taught at all levels of education for thinking and problem solving skills. The use of math applications and animated videos increases student interest and understanding, providing a fun and interactive learning experience.

Math apps, such as Timer Island, and Android-based math games, offer fun and interactive learning. Using math apps provides immediate feedback, varied practice questions, and adjustable difficulty levels. Animated videos in mathematics learning create a dynamic learning atmosphere, increasing student interest and understanding. Animated videos help students understand complex concepts, increase learning effectiveness, and provide better learning outcomes.

The use of mathematics applications and animated videos in mathematics learning makes a positive contribution in increasing student interest, understanding and learning outcomes. Math apps and animated videos provide a dynamic, interactive and fun learning experience, helping students understand math concept

REFERENCE

- Apriansyah, M. R. (2020). Pengembangan Media Pembelajaran Video Berbasis Animasi Mata Kuliah Ilmu Bahan Bangunan Di Program Studi Pendidikan Teknik Bangunan Fakultas Teknik Universitas Negeri Jakarta. *Jurnal Pensil*, 9(1), 9–18.
- Fatmawati, E., Karmin, & Sulistiyawati. (2018). Pengaruh Media Pembelajaran Berbasis Video Terhadap Hasil Belajar Siswa. *Pendidikan*, 12

- Gazali, R. Y. (2016). Pembelajaran matematika yang bermakna. *Math Didactic: Jurnal Pendidikan Matematika*, 2(3), 181-190.
- Hakim, D. L., & Sari, R. M. M. (2019). Aplikasi game matematika dalam meningkatkan kemampuan menghitung matematis. *Jurnal Penelitian Dan Pembelajaran Matematika*, 12(1), 129-141.
- Huda, M., & Mutia, M. (2017). Mengenal matematika dalam perspektif islam. *FOKUS Jurnal Kajian Keislaman Dan Kemasyarakatan*, 2(2), 182.
- Krisbiantoro, D., & Haryono, D. (2017). Game matematika sebagai upaya peningkatan pemahaman matematika siswa sekolah dasar. *Jurnal Telematika*, 10(2).
- Mashuri, S. (2019). *Media pembelajaran matematika*. Deepublish.
- Permatasari, I. S., Hendracipta, N., & Pamungkas, A. S. (2019). Pengembangan Media Pembelajaran Video Animasi Hands Move Dengan Konteks Lingkungan Pada Mapel Ips. *Jurnal Pendidikan Dan Pembelajaran Dasar*, 6(1), 34–48
- Prasetya, W. A., Suwatra, I. I. W., & Mahadewi, L. P. P. (2021). Pengembangan video animasi pembelajaran pada mata pelajaran matematika. *Jurnal Penelitian dan Pengembangan Pendidikan*, 5(1), 60-68.
- Rusmana, I. M. (2020). Pembelajaran matematika menyenangkan dengan aplikasi kuis online quizizz. *Prosiding Sesiomadika*, 2(1a).
- Sari, W., & Samawi, A. (2017). Pengaruh Penggunaan Media Interaktif Disertai Lks Terhadap Hasil Belajar Ipa Pada Kelas Ix Smp. *Scientiae Educatia*, 6(1), 36
- Sulistiyowati, S., Gunawan, E., & Rusdiana, L. (2022). Aplikasi game edukasi matematika tingkat dasar berbasis android. *Jurnal Teknoinfo*, 16(1), 107-112.
- Sumarmo, U. (2011). Pembelajaran Matematika Berbasis Pendidikan Karakter. In *Prosiding seminar nasional pendidikan matematika STKIP Siliwangi Bandung* (Vol. 1, pp. 22-32).
- Wulandari, E., Marlina, C., & Muzakir, U. (2020). Pengaruh penggunaan media video animasi dalam meningkatkan keterampilan membaca permulaan pada siswa kelas 1/A SD Negeri 32 Banda Aceh. *Jurnal Ilmiah Mahasiswa Pendidikan*, 1(1).