

UTILIZATION OF PHOTOMARH APPLICATION AS A LEARNING MEDIA TO INCREASE STUDENTS' LEARNING MOTIVATION ON THE MATERIAL OF LINEAR EQUATION ONE VARIABLE

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ABSTRACT

The development of technology and communication provides ideas or solutions to educators to utilize developing technology to find media or learning methods that can be applied or taught to students which aim to facilitate students in learning and solving problems related to problems that they find difficult to solve, especially in solving problems related to mathematics learning. The research objectives to be achieved in this study are to determine the utilization of the photomarh application as a learning medium to increase student learning motivation in the material of linear equations of one variable class. The research method is the approach and type of research using qualitative methods with a descriptive approach. The technique of selecting research subjects using purposive method, namely all VIII grade students. From the results of the research conducted, it can be seen that the utilization of the photomarh application is very helpful in learning which can be seen from the evaluation of learning. The utilization of the application is also very much in accordance with mathematics learning, one of which is linear equations of one variable. The utilization of the photomarh application is to facilitate students in the learning process so as to improve student learning outcomes. The utilization of digital applications, namely the photomarh application, is very suitable for the material in mathematics learning, namely the material for linear equations of one variable.

Keywords: Photomarh Application, Learning Media, Learning Motivation

INTRODUCTION

Education does have a very broad and complex dimension. On the one hand, education serves to develop individual potential, providing the knowledge and skills needed to face life's challenges. On the other hand, education also plays a role in shaping societies and communities, building social values and developing collective consciousness. From a material perspective, education provides access to resources and economic opportunities, while from a spiritual perspective, education shapes individuals' character, ethics and moral values. Thus, education is not only about the transfer of knowledge, but also about human development as a whole, which will ultimately affect the shape and direction of society itself (Ningsih et al., 2022).

So education is the most important element in the progress of the country because education covers all the elements that exist in a country. If in a country the education is low then the possibility of the country will be difficult to develop while if in a country the level of education is high then the country will develop rapidly and will become a developed country. One of the factors that cause the level of education in a country to be low is due to the lack of educators in remote areas of the country and the limited facilities and infrastructure that exist and that makes people in the country unable to learn new things, education is also very important for human survival because if someone never gets an education then that someone will not be able to survive.

The relationship between Education in schools is not just about knowledge transfer, but also about inculcating values and cultural norms. Through the learning process, students are not only taught academic subjects, but also reminded of the importance of ethics, social responsibility and mutual respect. Teachers act as facilitators who help students understand and internalize these values. In addition, a supportive school environment also provides opportunities for students to interact, collaborate and learn from each other. Thus, education becomes an important means to shape the character and identity of the younger generation, so that they can become responsible and ethical members of society (Dhani & Cahya, 2023). So education is also inseparable from culture because these two elements are very important for developed countries. technological sophistication is also utilized to enhance the development of education. these two elements are closely related because technological sophistication is also inseparable from the high level of education, therefore increasing or high education causes many new discoveries to be made that make technology more sophisticated as well as the progress of an increasingly advanced era.

The development of technology and communication provides ideas or solutions to educators to utilize developing technology to find media or learning methods that can be applied or taught to students which aims to make it easier for students to learn and solve problems related to problems that they find difficult to solve, especially in solving problems related to mathematics learning (Oktaviani et al., 2022). Mathematics education is an important part of scientific development and students' mathematical thinking skills. mathematics learning is also considered difficult for most students in learning it, be it from formulas in mathematics or materials in mathematics learning. there are even some students because they find it difficult to learn mathematics so they feel bored and lazy to take part in mathematics learning. Therefore, the academic community responds to the mathematical needs of various reactions to math phobia with real action, competing to offer solutions to make mathematics easier to understand and apply. (Meldi et al., 2022).

Mathematics is a science that is not only studied in elementary school or high school but mathematics is also studied up to the college level. at the college level mathematics is distinguished in a variety of different courses (Hanifah et al., 2023). Mathematics is also a universal science that underlies the development of modern technology, which also has an important role in various disciplines and advances human thinking (Dwiranata et al., 2019). One topic that is the main focus in mathematics education is algebra. algebra is a branch of mathematics that involves mathematical symbols and operations to study the relationship between mathematical objects. However, learning algebra is often considered difficult by some students because the material is abstract and complicated.

Algebra is material or lessons that are often encountered by students from the junior high school level to the college level, however, students are still often confused in understanding the explanation or how to solve problems in the material, therefore technological developments, namely learning media such as digital applications and learning methods/models can be used as tools to solve problems related to this material. Improving teaching models in the form of digital applications should be applied by teachers to support learning and success in the teaching and learning process, but in reality not many teachers develop learning models that are developing today. So the importance of

training on digital media or learning modules to educators who still use old methods in the learning process (Wardani in Handayani & Solihah, 2022).

In today's digital era, math apps have become a very valuable resource in mathematics education. Along with the development of technology, the use of software or applications can be an alternative medium for learning mathematics, especially in the era of globalization. This helps students increase creativity, develop, and apply science and technology. With the help of mathematics applications, students can more easily visualize symbols, make tabulations, and complete calculations precisely and accurately (Sibuea, Sembiring, & Agus, 2022). Learning media has an important role in the process of learning mathematics and serves as a tool that greatly supports the success of mathematics learning. (Anitra, 2021) states, math lessons are lessons where the material in these lessons is interconnected with each other, and also these lessons are related to various other subjects in elementary school, this is defined that math lessons are not only material that discusses calculations but can also be applied to other subjects.

Math apps provide an interactive learning environment that can help students understand algebraic concepts in a more interesting and effective way. Mathematics applications can provide interactive visualizations, simulations, and exercises, which can help students build a strong understanding of algebra as well as make students feel excited and not bored to follow the learning. One application that helps teachers in learning in the form of digital applications is the photomarh application. This application is a media that can be used as a solution for teachers in learning math. Because there are still many students who do not understand algebra learning due to the absence of media that they think can make it easier for them to solve problems related to algebra learning. An effective teacher is expected to be able to utilize technological developments to deepen students' understanding, stimulate their interest in learning, and improve their mathematical skills. If technology is utilized optimally, this can provide access that encourages students' enthusiasm and motivation in participating in the mathematics learning process.

From the observations made by the author at Mts Sarji Ar-Rasyid, it can be concluded that the lack of utilization of technology so that the media used as a tool for the mathematics learning process is arguably less interesting for students so that in learning mathematics students tend to be lazy to take part in the lesson and argue that learning mathematics is very difficult to learn so that many students cannot answer questions asked by the teacher during the learning evaluation process. Also, the media used are still simple media such as textbooks that make students easily bored and bored. Realizing this, it is important to make updates and utilize digital media that can increase student motivation in learning mathematics. Therefore, learning activities are needed that create a more pleasant, positive, and conducive atmosphere during the learning process, one of which is by utilizing the application. photomarh.

Based on the background above, the authors are interested in researching "Utilization of the Photomarh Application as a Mathematics Learning Media to Increase Student Learning Motivation on the Material of Linear Equation One Variable Class VIII at MTs Sarji Ar-Rasyid in the 2024-2025 Academic Year".

RESEARCH METHODS

This approach and type of research uses qualitative methods with a descriptive approach. The research subject selection technique used a purposive method, namely all VIII grade students at MTs Sarji Ar-Rasyid totaling 29 students, consisting of 15 male students and 14 female students, who will be researched by the author. Data collection techniques in this study include observation, interviews and documentation. There are two sources of data in this study, namely primary and secondary data. For primary data, direct information through in-depth interviews with resource persons.

RESULTS AND DISCUSSION

Data analysis in this study is in the form of interviews and documentation conducted by researchers to teachers and students. In this study, researchers will present several statements from teachers who have been interviewed:

"Lecture, question and answer, and assignment methods"

This is because our community resources are still lagging behind in using technology in the education process. The utilization of technology in education is needed as a tool in developing methods in the

field of education in the future. Whereas in the research we have done the teacher only uses the lecture method, this is reinforced by the teacher's statement.

“There is no media used, only using the lecture model”

During the learning process, the teacher does not use media such as digital applications, only using the lecture method. This is in accordance with the teacher's statement during the interview.

“The teacher gives a lecture about motivation to be enthusiastic about learning”

When the teacher wants to motivate students, it is only in the form of lectures related to motivation, there is no media or method used to motivate students so that students do not listen and seem to ignore lectures related to motivation.

“Not all students are motivated, only a few who listen to it”

But based on the teacher's statement that there are some students who listen to the motivational lectures delivered by the teacher so that there are students who are motivated even though there is no media and methods used to motivate students.

After the researcher conducts research and provides solutions in the form of digital media, namely the photomarh application and interviews are conducted again with the teacher that this application is very good and helps students during learning which is also reinforced by the math teacher's statement below

“This application is very good for helping teachers and students during math learning” The teacher also stated that besides being good, the photomarh application is very easy to use because of the features in this application even though students are not very proficient in using digital applications.

“This application is very easy to use because of the features that exist even by students who are still not proficient in learning math”

After conducting interviews with teachers, the following are some of the results of statements when conducted interviews with students

“The teacher only uses the lecture method”

Researchers also interviewed students and it turned out that the teacher only used the lecture method when learning took place, there were no methods or media used during learning.

“The lecture method that the teacher uses I don't really understand because the teacher doesn't give other examples, only monotonously looking at examples in the book so we don't understand the explanation given by the teacher”

During the learning process the teacher only uses the lecture method which does not make students understand what they are learning because when the teacher explains only monotonously to the book there are no examples given by the teacher other than in the book “With the photomarh digital application, it is very helpful and makes it easier for us to learn math lessons”

The photomath application helps them in learning and helps them to solve the problems given during the learning evaluation this is reinforced by the statement of one of the students when the researcher conducted an interview.

“We are very motivated by this application and we feel excited to take math lessons because in this application math becomes easy to learn, especially in the material of linear equations of one variable”

The features in the photomarh application are very easy to apply and can really help students who still don't really understand how to use it. This is reinforced by the statement of one of the VIII grade students at MTs Sarji Ar-Rasyid.

“Because the features are easy to understand, the way to use the photomarh application is very easy and can be learned”

The above statements are the results of interviews conducted by researchers to teachers and students during the research. The result of the analysis seen from the statements of teachers and students during interviews is that the utilization of the photomarh application on the material of linear equations of one variable in class VIII is proven to have a positive effect on increasing student learning motivation and making students more interested in learning mathematics at MTs Sarji Ar-Rasyid.

DISCUSSION

From the results of the research conducted, it can be seen that the utilization of the photomarh application is very helpful in learning which can be seen from the evaluation of learning. The utilization of the application is also very suitable for learning mathematics, one of which is linear equations of one variable. Given that initially students were not interested in learning math, with the

digital application making it easier for students in the learning process that motivates students to like learning math, especially in the material of linear equations of one variable.

The utilization of the photomath application is to facilitate students in the learning process so as to improve student learning outcomes. The utilization of digital applications, namely the photomath application, is very suitable for the material in mathematics learning, namely the material for linear equations of one variable. Given the characteristics of class VIII students at MTs Sarji Ar-Rasyid, so that in the learning process students still need media that makes it easier for them when learning takes place. And can increase student motivation and interest in participating in the learning process. So the utilization of media in the form of digital applications that make it easier for students is something that is very influential on increasing student motivation so that students are enthusiastic about participating in learning.

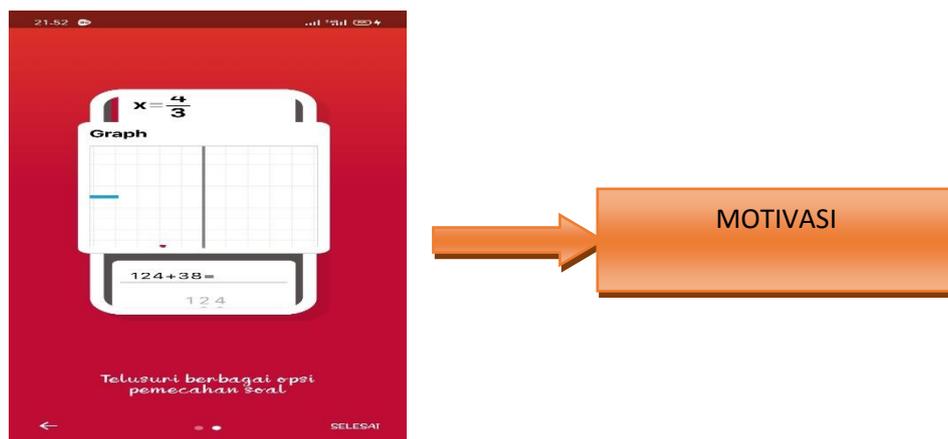


Figure 1. Photomath application

The renewal in this study is that researchers utilize the digital photomath application to assist students in increasing student learning motivation so that students feel active and enthusiastic about learning mathematics while, the consideration of utilizing the photomath application in learning mathematics is to facilitate students during the learning process as well as to improve student learning outcomes during the learning process. The results of the above research are in line with research conducted by Putra, (2023) with the research title "Improving Student Learning Outcomes on Function Material with Photomath Application in Class X SMA Negeri 1 Montasik Aceh Besar" showing that the use of Photomath applications can improve student learning outcomes. There was an increase in the average value from the pre-test 44.83 to the post-test 75.67. This result is supported by hypothesis testing which shows that $t_{count} > t_{table}$ ($4.46 > 1.67$), so H_a can be accepted.

In addition to increasing student learning motivation which is marked by an increase in learning outcomes, the photomath application can also help students solve difficulties in solving problems assigned by the teacher in the form of math problems. There are also features in the photomath application that make it easy for students to use it without experiencing difficulties. this has been proven by researchers when students are given several problems that are done with the help of the photomath application and it turns out that they can solve them.

The results of this study are in line with the research of Permana Dewi & Handayani (2022) with the research title "The Role of Photomath Applications in Mathematics Learning in the Digital Literacy Era (Literature Review)". An example of one of the applications that students often use is the photomath application. Photomath is an application that helps students in solving math problems with features that make it easy for users. These features include manually typing math problems, scanning problems using a smartphone camera, and displaying the solution steps. Photomath is capable of solving a variety of math problems, including decimal topics, fractions, arithmetic, roots, and simple linear equations. Photomath app is a useful math learning tool in the digital age, helping students solve math problems easily.

Based on the results of data presentation through interviews and observations conducted by researchers, it can be seen that the utilization of learning media in the form of photomath applications is very successful in increasing student learning motivation based on the results of interviews and observations made by researchers to teachers and students.

CONCLUSIONS

Based on the research results, it can be concluded that the use of the Photomath application in learning mathematics, specifically on the topic of linear equations in one variable for eighth-grade students at MTs Sarji Ar-Rasyid, has a positive impact on students' learning motivation. The application increases students' interest, enthusiasm, and activeness in class, as well as their willingness to solve problems independently. Both teachers and students benefit from its use teachers find it easier to explain abstract mathematical concepts, while students find the application helpful in understanding and following problem-solving steps more effectively.

BIBLIOGRAPHY

- Amin, N. F., Garancang, S., & Abunawas, K. (2023). Konsep umum populasi dan sampel dalam penelitian.
- Anitra, R. (2021, Maret). Pembelajaran Kooperatif Tipe Jigsaw dalam Pembelajaran Matematika di Sekolah Dasar. *Jurnal Pendidikan Dasar Indonesia* licensed under A Creative Commons Attribution-Non Commercial 4.0 International License.
- Arianti, A. (2019). Peranan guru dalam meningkatkan motivasi belajar siswa. *Didaktika : Jurnal Kependidikan*, 12(2), 117–134. <https://doi.org/10.30863/didaktika.v12i2.181>
- Avanda, A. Y., & Putri, S. A. W. (2020). Eksistensi Aplikasi Photomath dalam Pembelajaran Matematika pada Siswa Sekolah Menengah Atas (SMA). *Prosiding Seminar Pendidikan Matematika dan Matematika*, 2. <https://doi.org/10.21831/pspmm.v2i0.106>
- Damayani, S. (2024). Systematic Literature Review: Pemanfaatan Aplikasi Photomath Sebagai Media Belajar Matematika.
- Dhani, V., & Cahya, R. D. (2023). Memahami Pengaruh Kebudayaan Dan Kepribadian Terhadap Pendidikan Di Sekolah Dasar. 08.
- Dwiranata, D., Pramita, D., & Syaharuddin, S. (2019). Pengembangan Media Pembelajaran Matematika Interaktif Berbasis Android Pada Materi Dimensi Tiga Kelas X SMA. *Jurnal Varian*, 3(1), 1–5. <https://doi.org/10.30812/varian.v3i1.487>
- Fadilah, A., Nurzakiah, K. R., Kanya, N. A., Hidayat, S. P., & Setiawan, U. (2023). Pengertian Media, Tujuan, Fungsi, Manfaat dan Urgensi Media Pembelajaran. 1(2).
- Fairazatunnisa, F., Dwirahayu, G., & Musyriyah, E. (2021). Challenge Based Learning Dalam Meningkatkan Kemampuan Berpikir Kreatif Siswa Pada Materi Persamaan Linear Satu Variabel. *Edukatif: Jurnal Ilmu Pendidikan*, 3(5), 1942–1956. <https://doi.org/10.31004/edukatif.v3i5.702>
- Handayani, S. D., & Solihah, A. (2022). Pemanfaatan Aplikasi PhotoMath dan Aplikasi YHomework pada Pembelajaran Matematika. *Kapas: Kumpulan Artikel Pengabdian Masyarakat*, 1(1). <https://doi.org/10.30998/kapas.v1i1.1208>
- Hanifah, H., Sumardi, H., & Febrila, L. G. (2023). Analisis Kemampuan Pemecahan Masalah Mahasiswa Pada Mata Kuliah Analisis Real. *Jurnal Cendekia : Jurnal Pendidikan Matematika*, 7(3), 3216–3228. <https://doi.org/10.31004/cendekia.v7i3.2913>
- Haris, A. (2017). Peran Pengembangan Dan Pemanfaatan Teknologi Pendidikan Dan Pembelajaran Dalam Meningkatkan Kualitas Mengajar. <https://doi.org/10.31219/osf.io/r57qw>
- Ichsan, I., & Ali, A. (2020). Metode Pengumpulan Data Penelitian Musik Berbasis Observasi Auditif. *Musikolastika: Jurnal Pertunjukan dan Pendidikan Musik*, 2(2), 85–93. <https://doi.org/10.24036/musikolastika.v2i2.48>
- Karo-Karo, I. R., & Rohani, R. (2018). Manfaat media dalam pembelajaran. *Axiom : Jurnal Pendidikan dan Matematika*, 7(1). <https://doi.org/10.30821/axiom.v7i1.1778>
- Krismony, N. P. A., Parmiti, D. P., & Japa, I. G. N. (2020). Pengembangan Instrumen Penilaian Untuk Mengukur Motivasi Belajar Siswa SD. *Jurnal Ilmiah Pendidikan Profesi Guru*, 3(2), 249. <https://doi.org/10.23887/jippg.v3i2.28264>

- Magdalena, I., Nadya, R., & Prahastiwi, W. (2021). Analisis Penggunaan Jenis-Jenis Media Pembelajaran Untuk Meningkatkan Hasil Belajar Siswa Di Sd Negeri Bunder III. 3.
- Meldi, N. F., Yani T., A., & Suratman, D. (2022). Penyelesaian Persamaan Bentuk Kuadrat Berbantuan Aplikasi Photomath Berdasarkan Sistem Bilangan Real. *Variabel*, 5(2), 83. <https://doi.org/10.26737/var.v5i2.3224>
- Monica, S. R., Fitriani, W., & Masril, M. (2021). The Effect of Cognitive Behavior Therapy (CBT) Individual Settings to Recude Truancy Behavior. *Jurnal Bimbingan dan Konseling Terapan*, 5(2), 119. <https://doi.org/10.30598/jbkt.v5i2.1528>
- Muzammil, A. R., Asfar, D. A., Za'im, M., Astama, R. A. E., Muhammad, R. D., & Mahadi, A. (2023). Persepsi Mahasiswa S-1 terhadap Pemanfaatan Photomath dalam Pemecahan Persoalan Matematika. 12(4).
- Nasution, N. E. (2024). Systematic Literature Review: Pemanfaatan Aplikasi Photomath Pada Pembelajaran Matematika. 2(2).
- Nilamsari, N. (2014). Memahami studi dokumen dalam penelitian kualitatif.
- Ningsih, S., Gunayasa, I. B. K., & Dewi, N. K. (2022). Pengaruh Literasi Numerasi Terhadap Hasil Belajar Matematika Pada Siswa Kelas III SDN Lingkok Lima Tahun Ajaran 2021/2022. *Jurnal Ilmiah Profesi Pendidikan*, 7(3c), 1938–1943. <https://doi.org/10.29303/jipp.v7i3c.881>
- Oktaviani, R. D., Ilmiah, T., Sholihah, N., Apriliyani, R., & Fauzi, I. (2022). Pemanfaatan Aplikasi Photomath Sebagai Media Pemecahan Masalah Matematis. *RANGE: Jurnal Pendidikan Matematika*, 4(1), 40–54. <https://doi.org/10.32938/jpm.v4i1.2539>
- Permana Dewi, I. W. D., & Handayani, I. G. A. (2022). Peranan Aplikasi Photomath Dalam Pembelajaran Matematika Di Era Literasi Digital (Kajian Pustaka). *Suluh Pendidikan*, 20(1), 94–101. <https://doi.org/10.46444/suluh-pendidikan.v20i1.411>
- Pratama, F. (2019). Pengaruh Motivasi Belajar Ipa Siswa Terhadap Hasil Belajar Di Sekolah Dasar Negeri 0.
- Putra, M. (2023). Peningkatkan Hasil Belajar Siswa Pada Materi Fungsi Dengan Menggunakan Aplikasi Photomath Di Kelas X Sma Negeri 1 Montasik Aceh Besar.
- Rubiana, E. P., & Dadi, D. (2020). Faktor-Faktor Yang Mempengaruhi Motivasi Belajar Ipa Siswa Smp Berbasis Pesantren. *Bioed: Jurnal Pendidikan Biologi*, 8(2), 12. <https://doi.org/10.25157/jpb.v8i2.4376>
- Rusandi & Muhammad Rusli. (2021). Merancang Penelitian Kualitatif Dasar/Deskriptif dan Studi Kasus. *Al-Ubudiyah: Jurnal Pendidikan dan Studi Islam*, 2(1), 48–60. <https://doi.org/10.55623/au.v2i1.18>
- Sibuea, M. F. L., Sembiring, M. A., & Agus, R. T. A. (2022). Workshop Penggunaan Media Belajar Berbasis Aplikasi Matematika. *Jurnal Pemberdayaan Sosial dan Teknologi Masyarakat*, 2(2), 251. <https://doi.org/10.54314/jpstm.v2i2.1207>
- Sibuea, M. F. L., Sembiring, M. A., Almeina, I., & Agus, R. T. A. (2022). Pemanfaatan Aplikasi Photomath Sebagai Media Belajar Matematika. *Jurnal Pemberdayaan Sosial dan Teknologi Masyarakat*, 2(1), 109. <https://doi.org/10.54314/jpstm.v2i1.962>
- Wahyuni, I. (2018). Pemilihan Media Pembelajaran.
- Wijayanti, R., & Hasanudin, C. (2023). Pemanfaatan Aplikasi Photomath dalam Pembelajaran Matematika.