

## ***Systematic Literature Review: Factors Causing Low Students' Interest in Learning Mathematics***

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### ***Abstract***

The student's lack of interest in learning mathematics needs to be scrutinized, making learning difficult for a learning problem to arise. This must be seriously reviewed, and implemented appropriate alternatives. This research aims to identify various factors that reduce students' interest in learning, especially mathematics. The method used in this research is SLR (Systematic Literature Review). Multiple sources of information were obtained from the survey, evaluating all articles with a similar relationship to the subject of this exploration. The articles used in this research were 15 nationally based articles obtained from Google Scholar and one from an e-book. From this review, the variables that cause low student interest in learning are the complexity of students' understanding of concepts.

**Keywords:** *Causal Factors; Interest in learning; Mathematics.*

### **Abstrak**

Minimnya minat siswa dalam belajar matematika perlu dicermati dan membuat belajar menjadi sulit sehingga munculah sebuah permasalahan belajar. Hal ini harus ditinjau dengan serius dan mengimplementasikan alternatif yang tepat. Tujuan dari penelitian ini adalah untuk mengidentifikasi berbagai faktor yang menurunkan minat belajar siswa, khususnya matematika. Metode yang digunakan dalam penelitian ini adalah SLR (Systematic Literature Review). Sumber informasi yang bermacam-macam diperoleh dari survei, dengan mengevaluasi semua artikel yang memiliki hubungan serupa dengan subjek eksplorasi ini. Artikel yang digunakan dalam penelitian ini berjumlah 15 artikel berbasis nasional yang diperoleh dari Google Scholar dan 1 dari e-book. Dari ulasan tersebut, variabel yang menyebabkan rendahnya minat belajar siswa adalah kerumitan siswa memahami konsep, asumsi siswa bahwa matematika itu sulit dan menakutkan, tidak adanya media pembelajaran matematika yang cocok dan efektif, tidak adanya motivasi untuk belajar, orang tua tidak membimbing dan menuntun siswa untuk mengulang pembelajaran, siswa tidak membidangi pembelajaran matematika.

**Kata Kunci:** Faktor Penyebab; Minat belajar; Matematika.

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## INTRODUCTION

Education plays a vital role in all aspects of life. Lifelong education (long life education) in various zones and conditions positively impacts the growth of each individual creature. Humans will never escape education because, in essence, education is a key to the future that needs to be grown within a person. Education is a place of sustainability to maximize and raise the quality of human resources. Formulated in Law no. 20 of 2003 concerning the Education System, which defines that education is a conscious and planned effort to create an atmosphere of learning and learning so that students actively develop their potential to have strength from spiritual, intellectual, personality, self-control,

Mathematics is a field of study that exists at every level of education, starting from the elementary school level, junior high school, and high school up to the university level. As with education, mathematics is also a science that is no less important in human daily life. The word basic mathematics comes from the Yunani *mathematike*, which means to study. The origin of these words begins with the word *mathema*, which means knowledge or (knowledge, science). The word *mathematike* is related to other words, namely, machine or therein, which means learning (thinking). So, according to the word's origin, mathematics is a science that uses methods of thinking and reasoning. With mathematics, humans can determine an idea that is right and wrong. Mathematics is also a numerical, abstract, logical science that contains symbols, numbers, spaces, shapes, structures, and others. Moreover, mathematics is classified as the head or queen (queen of knowledge and as a servant of other knowledge) of knowledge to support other sources of knowledge.

Mathematics learning has special reasons in schools. So that students can: (1) cultivate and develop numeracy skills (using numbers as a tool in everyday life); (2) develop transferable student abilities through mathematical activities; (3) increase basic knowledge of mathematics as a provision for further learning in junior high school; and (4) forming a logical, critical, careful, creative, and positive attitude, learning mathematics has specific goals in elementary schools (N. P. W. P. Dewi & Agustika, 2020), (Ikhsan et al., 2017), (Wardani & Setyadi,

2020). However, learning mathematics in schools is often seen and considered as a complex, complicated, and confusing lesson. Even some students assume that mathematics is a scary field and is not in much demand. Many students who need help understanding mathematics hurt their low interest in learning and learning outcomes.

They are learning interest tendencies that lead to more pleasure, interest, and liking for something to achieve specific goals. Interest in learning in learning mathematics is also called a penchant for participating in the field of learning mathematics without coercion and self-interest. Therefore, students who are not interested in learning mathematics feel happy and energized when the learning process takes place. In this article, researchers will analyze and review the causes that make students fall and have low interest in learning mathematics.

Several factors cause low student interest in learning mathematics, namely, difficulty understanding concepts, not having math skills, lack of motivation to learn, students' opinion that mathematics is complex and a stressful lesson, lack of guidance from parents to repeat learning at home, monotonous classroom learning and the absence of effective learning media or methods and engaging during the learning process.

This is what makes researchers interested in analyzing and identifying factors related to students' low interest in learning mathematics. This research will guide researchers, teachers, scientists, and students.

## **RESEARCH METHODS**

Systematic Literature Review (SLR) is the method used in this study. The data generated comes from review articles in journals that have been collected to support this research. Based on this method, researchers will identify, review, describe, explore, evaluate, and conclude properly, systematically and procedurally according to the stages that have been determined.

The data collected were 15 types of journal articles from Google Scholar and one book from an e-book with the topic of factors causing low student interest in learning mathematics. The articles analyzed are summarized from 2017 to

2023. The articles found are then arranged using a table in which the researcher's name, journal name, year of publication and research results from the journal are written. The discussion in this article comes from journals that have been reviewed, compared and drawn conclusions so that it becomes coherent and accurate data.

## **RESULTS AND DISCUSSION**

This study was sourced from several journals whose data validity was significant and relevant according to the research title. then these studies are mapped according to the research variables. Obtain some research results as follows:

1. Research on factor analysis of mathematics learning difficulties in elementary school students.

Several studies on factor analysis of mathematics learning difficulties in elementary school students are presented in Table 1. These studies are based on the factors of mathematics learning difficulties in elementary school students identified by researchers in research journals. Research on factor analysis of mathematics learning difficulties in elementary school students, can be seen in the Table 1.

Based on the results of the study and identification of several articles related to the analysis of the variables of difficulty in learning mathematics in elementary school students, a common thread can be drawn. Some common threads that can be drawn are as follows:

According to (Nathalia et al., 2022), the trigger for the low learning interest of students at school is the difficulty in understanding the concept. The basic concept of a material topic is likened to a rope that unites students' cognitive abilities. Therefore we need simple visual aids that are easy to obtain, for example, paper on fraction material. At the same time, the integer material can be in the form of number line ladders or number line blocks. In line with this, students need help in instilling addition, subtraction, multiplication, and division

skills, namely arithmetic examples. As a teacher, you must be more imaginative in realizing engaging media and strategies matching students' skills.

**Table 1. Research on Factor Analysis of Mathematics Learning Difficulties in Elementary School Students**

<b>Name Journal</b>	<b>Writer</b>	<b>Results Study</b>
<b>Jurnal Pendidikan dan Konseling : Vol 4, No 3, (2022)</b>	Elvira Nathalia Husen, Regita Mutiara Rezani, Syahrial, Silvia Noviyanti.	This study focuses on students' difficulties in understanding concepts and needing more ability in learning mathematics, causing low student interest in learning.
<b>Seminar Nasional LPPM UMMAT : Vol 1, (2022)</b>	Afi Choirina Muqtafia, Afrina Indah Kurniawati, Fara Maulina Amanda, Rani Setiawaty.	This study emphasizes students' difficulties in mastering concepts and solving problems in word problems, marked by several factors: students still like to play and feel tired in learning mathematics.
<b>Prosiding Santika 2 : Seminar Nasional Tadris Matematika UIN K.H. Abdurrahman Wahid Pekalongan. Vol 2, (2022)</b>	Anggraeni Maha Dewi, Aprilia Azzahra, Arda Insania Kamila.	This study focuses on two factors of low student interest in learning: internal and external. Internal is in the form of physiological and psychological aspects, while external consists of teachers, parents, and the surrounding area.
<b>SHES : Conference Series Workshop Penguatan Kompetensi Guru Vol 4, No 5, (2021)</b>	Dwi Purnawan	The results of this study explain that it is difficult for students to understand the concept of learning. Accompanied by internal factors, students are negligent and still active in playing. External factors, namely variations in learning methods, decrease students' interest in learning mathematics.
<b>Symmetry Pasundan Journal Of Research In Mathematics Learning and Education : Vol 7, No 2, (2022)</b>	Meicindy Jeny Klorina, Dadang Juandi.	The research results from this article show that the students need help understanding the concept, and the learning is boring, so the interest in learning mathematics is low.

Factors that mark the decline in student interest, especially in learning mathematics, are as research from (Choirina Muqtafia et al., 2022). Internal factors include the personality of students who are still happy to play and like to do something directly. Students get bored with the learning process in class and have an effect on being distracted, which has a terrible impact on students, namely not understanding learning concepts, lack of interest, and others.

The decline in students' interest in learning is marked by physiological and psychological aspects originating from internal factors and listed in research (AM Dewi et al., 2022). Physiological aspects, for example, actual circumstances or conditions, indicate the level of health of the student's body, which can affect the excitement and power of learning. The physiological perspective consists of student investment and student well-being. Student health is also essential for a thriving learning experience. To maintain health, students must sleep enough and eat regularly so that they are not disturbed during the learning process. While the psychological aspect is the point of view from within the student, which consists of learning knowledge; the level of knowledge determines the level of progress in learning, and students who are enthusiastic in answering in a way that is relative to the object of learning. Then there are external factors. It is realized that the teacher in conveying learning material is too standard; often, the teacher needs to use learning media. When conveying learning, the teacher only uses textbooks from the government, such as reading materials and LKS. Actually, the teacher uses only various sources to help with learning. Apart from teachers, the role of parents is significant to encourage children to be more focused and continue their education at home.

The study (Dwi, 2016) agrees with the opinion (Choirina Muqtafia et al., 2022), which interprets that students are negligent and still feel happy by playing in class. External factors themselves are variations in learning methods; students will feel tired of learning with boring teachers because they lack imaginative, creative learning and lack direct interaction with students when studying.

Research findings (Klorina & Juandi, 2022) are the same as opinions (Nathalia et al., 2022). That is, students' difficulties in understanding learning concepts, and in solving problems affect the lack of interest in student learning.

## 2. Research on the implementation of learning media to increase students' interest in learning mathematics.

Furthermore, the following research looks at the implementation of learning media to increase students' interest in learning mathematics. These studies can be seen in the Table 2.

According to research from (Nur Isnaini, Siti, Firman, 2023) is the use of learning videos that are very suitable for elementary school mathematics learning. This is because learning videos can encourage students to learn more efficiently, independently, and enthusiastically, especially in mathematics. In this way, learning recordings can be used as a medium that can go to the next level of students' gains in learning mathematics in class schools. Make learning records memorized for classification that can be applied. According to this study, educational videos are made with high quality, so that they are easy for students to understand, arouse their interest and curiosity, and motivate them to learn.

Meanwhile according to (Novelza & Handican, 2023), one of the methods to make instruction and learning exercises more feasible and efficient is through the use of instructional media. Students become more motivated and enthusiastic in learning as a result of using learning media as a teaching resource.

Study (Savriliana et al., 2020), argues that Dakota Media (Dakon Arithmetic) is a learning medium that is suitable for teaching arithmetic in elementary schools so that it is very possible to use it as an answer to further develop arithmetic learning outcomes, besides that it can involve students to play an active role in the added experience so that learning mathematics will be more enjoyable.

**Table 2. Research on the Implementation of Learning Media to Increase Students' Interest in Learning Mathematics**

<b>Name Journal</b>	<b>Writer</b>	<b>Results Study</b>
<b>Journal of Basic Education: Vol 7, No 1, (2023)</b>	Siti Nur Isnaini, Firman, Desyandri.	This study illustrates that the existence of instructional video media can optimize interest in learning mathematics. So that the teaching and learning process is enthusiastic and effective.
<b>Your Griya Journal of Mathematics Education Application : Vol 3, No 1, (2023)</b>	Ice Dwi Novelza, Rhomic Handican.	This study emphasizes learning media Quizizz, Auto Visual and others which have a positive impact so that the low interest in student learning is overcome.
<b>Basicedu Journal : Vol 4, No 4, (2020)</b>	Vina Savriliana, Kori Sundari, Yudi Budianti.	In this study, Dakon mathematics media is a solution to be able to build students' interest in learning while increasing learning outcomes in students' cognitive aspects.
<b>Community Development Journal : Vol 4, No 2, (2023)</b>	Hilmi Fadhilah Akbar, Muhammad Sofian Hadi.	This study describes that wordwall learning media is a game that is fun and enthusiastic for students. That way the media has an effect on students' learning intentions in class.

And the results of the review of (Hikmawati et al., 2023). Wordwall is an organization-based computerized gamification application that provides a variety of games and tests, including those that teachers can use in delivering assessments of wordwall learning media materials that can improve students' ability to



dominate material. Adaptive wordwall media can be used face-to-face (PTM) or online or during a pandemic.

3. Research on students' perceptions that mathematics is a difficult and stressful subject.

Research on the implementation of learning media to increase students' interest in learning mathematics, can be seen in the Table 3.

**Table 3. Research on the Implementation of Learning Media to Increase Students' Interest in Learning Mathematics**

<b>Name Journal</b>	<b>Writer</b>	<b>Results Study</b>
<b>Numeracy Journal : Vol 6, No 1, (2019)</b>	Khairatul Ulya, Nurlaila Fazraini, Dahlia Lubis.	The results of this study are excessive student anxiety such as worry and fear of learning mathematics, resulting in a lack of interest in the subject, which has an impact on student learning outcomes.
<b>Qalamuna – Educational, Social and Religious Journal : Vol 13, No 2, (2021)</b>	Makis Setiawan, Emi Pujiastuti, Bambang Eko Susilo	This research shows that students' anxiety levels are very high because they do not like learning mathematics, the assumption that mathematics is a very difficult subject that students really feel. Therefore the interest of students in learning is thinning.
<b>Didakta : Journal of Education Vol.15, No.1, (2021)</b>	Aan Putra, Yessi Yulanda.	This study states that the negative effects of anxiety arise because students think mathematics is abstract and complicated. This is what makes the low interest of students to learn.

According to the results of the analysis of the three journals above (Ulya Khairatul, Nurlaila Fazraini, 2019), (Setiawan et al., 2021), (Aan's son, 2021). That is most people think of complicated science when they think of mathematics because it is often associated with abstract and complicated formulas. The majority of people dislike math because they believe that the complex abstract formulas and symbols in mathematics have nothing to do with the real world. When faced with a math problem, a person's feelings of worry, tension, and fear are known as math worry. Student achievement is also influenced by a sense of concern for mathematics. Students who have high anxiety in the field of mathematics study make students' interest in learning decrease. It is the student's negative assumptions that can lead to learning problems.

4. This research regarding the lack of motivation to learn causes low interest in learning mathematics.

This research regarding the lack of motivation to learn causes low interest in learning mathematics, can be seen in the Table 4.

Motivation is a series of things that are very necessary in carrying out activities, especially in teaching and learning. Moreover, a student strives to embed learning motivation within himself, so that perfect student interest in learning related to mathematics material. Based on the results of articles that have been interpreted from (Elvira Utami et al., 2022) that motivation is very significant with interest in learning. Learning outcomes usually also tend to be low when motivation and interest in learning are low. As a result, students must be more enthusiastic about learning and motivated to do so.

In contrast to research from (Sari & Munandar, 2022) (Anditiasari et al., 2021). When a student is motivated, they are more likely to seek solutions to new problems or ideas. Also, the capacity to understand numerical ideas in learning arithmetic is an ability that every student must master in his educational experience and solving different numerical questions. Motivation to learn is one of the impacts that greatly integrates the success of the teaching and learning process.

**Table 4. This Research Regarding the Lack of Motivation to Learn Causes Low Interest in Learning Mathematics.**

<b>Name Journal</b>	<b>Writer</b>	<b>Results Study</b>
<b>Symbiotic Journal Of Biological Education : Vol 3, No 2, (2022)</b>	Elvira Utami, Rahmadhani Fitri, Muhyiatul Fadilah.	This study underlines the relationship between motivation and interest in learning with learning outcomes is significant and directly proportional. If motivation and interest in learning are high, learning outcomes also tend to be high, and vice versa.
<b>Proceedings of the National Seminar on Mathematics Education IV (Sandika IV): Vol 4, No 1, (2022)</b>	Muhammad Fazri	The results of the study show that learning motivation is very influential in understanding learning concepts, therefore if students lack learning motivation it causes low interest in learning.
<b>Axiom : Journal of Mathematics and Mathematics Education : Vol 12, No 2, (2021)</b>	Nungki Anditiasari, Emi Pujiastuti, Bambang Eko Susilo	In this study interpreting motivation can make students excited and have ideas and ideas in the learning process. And students who do not have motivation will result in minimal interest in learning.

Author book (Trygu, 2021) describes that the role of parents is very influential in student learning interest. For example, when students return from school, they are still confused or don't know what the teacher taught them. Students' interest in mathematics increases when parents are asked to explain clearly and at the same time motivate them. When students believe that mathematics is interesting, straightforward, and useful.

## CONCLUSION

Based on the results and discussion above, it can be concluded that there are several factors that cause low student interest in learning; the complexity of students understanding the concept of learning mathematics, and do not have math skills. Lack of effective learning media and strategies so that the conditions in the classroom are active and not rigid. In addition, the assumption that students lack motivation to learn mathematics and their mathematics is difficult and complicated. Furthermore, parental involvement has a significant impact on students' learning interest.

## REFERENCES

- Anditiasari, N., Pujiastuti, E., & Susilo, BE (2021). Systematic literature review: the effect of motivation on students' mathematical creative thinking abilities. *Axiom: Journal of Mathematics and Mathematics Education*, 12(2), 236–248.
- Choirina Muqtafia, A., Indah Kurniawati, A., Maulina Amanda, F., Setiawaty, R., Elementary School Teacher, P., Keys, K., learning, K., overcoming it, C., & causes, F. (2022). Analysis of Learning Difficulties in Mathematics and How to Overcome Them in Elementary School Students: A Literature Review. *LPPM Ummat National Seminar*, 1(0), 296–309.  
<http://journal.ummat.ac.id/index.php/semnaslppm/article/view/9660>
- Dewi, AM, Azzahra, A., Kamila, AI, Ulya, N., & Sari, LK (2022). Factors Causing Low Student Interest in Learning Mathematics in Indonesia. *Proceedings of Santika 2: National Seminar on Tadris Mathematics Uin KH Abdurrahman Wahid Pekalongan*, 2(20), 24–34.
- Dewi, NPWP, & Agustika, GNS (2020). The Effectiveness of Mathematics Learning Through PMRI's Approach to Mathematical Knowledge Competence. *Journal of Educational Research and Development*, 4(2), 204. <https://doi.org/10.23887/jppp.v4i2.26781>
- Dwi, P. (2016). Analysis and Methods of Overcoming Mathematics Learning Difficulties in Elementary School Students : Literature Review. 4(5), 1–23.
- Elvira Utami, Rahmadhani Fitri, & Muhyiatul Fadilah. (2022). Relationship between Motivation and Learning Interest with Learning Outcomes (Literature Review). *Symbiotic: Journal of Biological Education and Science*, 3(2), 65–70. <https://doi.org/10.32939/symbiotic.v3i2.64>
- Hikmawati, Kamid, & Syamsurizal. (2023). Effect of Using Learning Media And.

3(2), 0–71.

- Ikhsan, M., Munzir, S., & Fitria, L. (2017). Critical Thinking Ability and Students' Metacognition in Solving Mathematical Problems through a Problem Solving Approach. *AKSIOMA: Journal of Mathematics Education Study Program*, 6(2), 234. <https://doi.org/10.24127/ajpm.v6i2.991>
- Klorina, MJ, & Juandi, D. (2022). Difficulties in Learning Mathematics for Students in Indonesia in terms of Self-Efficacy: Systematic Literature Review (SLR). *Symmetry: Pasundan Journal of Research in Mathematics Learning and Education*, 7(2), 181–192. <https://doi.org/10.23969/symmetry.v7i2.6435>
- Nathalia Husna Elvira, Regita Mutiara Rezani, Syahrial, SN (2022). Journal of Education and Counseling. *Journal of Education and Counseling*, 4, 1349–1358.
- Novelza, ID, & Handican, R. (2023). Systematic literature review: is learning media capable of influencing mathematics learning outcomes? 3, 11–22.
- Nur Isnaini, Siti, Firman, D. (2023). USE OF LEARNING VIDEO MEDIA IN IMPROVING Padang State University In accordance with appropriate learning developments to help students learn and can arouse their interest in further learning. Interest in learning is the age, a teacher. 7(1).
- Putra Aan, YY (2021). Students' Mathematical Anxiety and Its Effects: Systematic Literature Review. *Didakta : Journal of Education*, 15, 1–14.
- Sari, L., & Munandar, DR (2022). The Effect of Interest in Learning on the Ability to Understand Concepts. 4(April), 111–118.
- Savriliana, V., Sundari, K., & Budianti, Y. (2020). Media Dakota (Dakon Mathematics) as a Solution to Improve Mathematics Learning Outcomes for Elementary School Students. *Basicedu Journal*, 4(4), 1160–1166. <https://doi.org/10.31004/basicdu.v4i4.517>
- Setiawan, M., Pujiastuti, E., & Susilo, BE (2021). Systematic Literature Review: The Effect of Mathematical Anxiety on Students' Problem Solving Ability. *QALAMUNA: Journal of Education, Social, and Religion*, 13(2), 239–256. <https://doi.org/10.37680/qalamuna.v13i2.870>
- Trygu. (2021). Initiating the Concept of Interest in Learning Mathematics (p. 87).
- Ulya Khairatul, Nurlaila Fazraini, DL (2019). Students' Anxiety Towards Mathematics. *Journal of Numeracy*, 174(Technological Forecasting and Social Change), 72–82.

- Wardani, KW, & Setyadi, D. (2020). Development of Macromedia Flash-Based Mathematical Learning Media on Area and Circumference Materials to Increase Student Learning Motivation. *Scholaria: Journal of Education and Culture*, 10(1), 73–84. <https://doi.org/10.24246/j.js.2020.v10.i1.p73-84>