

# STUDENT LEARNING INTEREST IN THE USE OF AUGMENTED REALITY MEDIA ON TRIANGLES AND QUADRILATERALS

*by Ilham Muhammad*

---

**Submission date:** 10-Jul-2023 02:05PM (UTC+0700)

**Submission ID:** 2128996039

**File name:** 19.\_matematika\_dan\_pembelajaran.pdf (440.79K)

**Word count:** 6266

**Character count:** 35449



## STUDENT LEARNING INTEREST IN THE USE OF AUGMENTED REALITY MEDIA ON TRIANGLES AND QUADRILATERALS

Ilham Muhammad<sup>1</sup>, Lilis Marina Angraini<sup>2</sup>

<sup>1</sup>Universitas Pendidikan Indonesia

<sup>2</sup> Universitas Islam Riau

[ilhammuhammad@upi.edu](mailto:ilhammuhammad@upi.edu)

### Abstrak

Multimedia interaktif adalah model pembelajaran untuk membangkitkan pemikiran, motivasi, menyampaikan pesan, sehingga mendorong proses belajar mengajar dan dapat membangkitkan pengalaman belajar siswa menjadi lebih nyata. Tujuan peneliti melakukan penelitian adalah untuk mengetahui minat belajar siswa terhadap penggunaan media Augmented reality sebagai media pembelajaran pada materi segitiga dan segiempat untuk kelas VII MTs. Peneliti menggunakan metode penelitian deskriptif kuantitatif dengan 20 siswa kelas VII MTs sebagai sampel secara acak. Penelitian ini menggunakan instrumen tes berupa angket minat belajar siswa. Analisis data deskriptif kuantitatif digunakan sebagai teknik analisis data dalam penelitian ini. Adapun hasil respon siswa terhadap penggunaan software Augmented reality sebagai media pembelajaran diperoleh persentase dengan rata-rata 79,25% yang tergolong tinggi. Hal ini menunjukkan bahwa respon siswa terhadap penggunaan Augmented Reality positif. media pembelajaran agar nantinya dapat digunakan untuk proses pembelajaran yang dapat menarik minat siswa dalam belajar.

**Kata kunci:** Augmented Reality; Segitiga dan Segiempat; Minat Belajar

### Abstract

Interactive multimedia is a learning model to generate thoughts, motivate, convey messages, so as to encourage the teaching and learning process and can generate students' learning experiences to become more real. The purpose of the researchers conducting the research was to find out students' learning interest in the use of Augmented Reality media as a learning medium on triangle and quadrilateral material for class VII MTs. The researcher used a quantitative descriptive research method with 20 students of class VII MTs as a random sample. This study used a non-test instrument in the form of a student learning interest questionnaire. Quantitative descriptive data analysis was used as a data analysis technique in this study. The results of student responses to the use of Augmented reality software as learning media obtained a percentage with an average of 79.25% which is relatively high. This shows that the student's response to the use of Augmented Reality is positive. learning media so that later it can be used for the learning process that can attract students' interest in learning.

**Keywords:** Augmented Reality; Triangles and Quadrilaterals; Learning Interest

**Citation:** Muhammad, I., & Angraini, L. M. 2023. Student Learning Interest in The Use of Augmented Reality Media on Triangles and Quadrilaterals. *Matematika dan Pembelajaran*, 11(1), 32-49. DOI: <http://dx.doi.org/10.33477/mp.v11i1.4299>



This work is licensed under a [Creative Commons Attribution-NonCommercial 4.0 International License](https://creativecommons.org/licenses/by-nc/4.0/).



## INTRODUCTION

Education is the most important part of advancing the quality of human resources or human resources and has a very important role in the era of the industrial revolution 4.0 (Marchy, Murni, Kartini, & Muhammad, 2022). Riyanti (2018) reveals that education is a direction in the life of the growth of children and directs all the nature that exists in these children so that these children become human beings and part or members of society can achieve maximum safety and prosperity. According to Sutisno (2019) education is an activity or effort to improve the quality of a human being which is carried out in various parts. To achieve the goals that have been determined it takes many factors that are interconnected so as to create a system that is interrelated then it is done through education (Angraini & Muhammad, 2023; Maryanto, Rachmawati, Muhammad, & Sugiyanto, 2023; Muhammad, Darmayanti, & Arif, 2023; Muhammad, Triansyah, Fahri, & Gunawan, 2023; Samosir, Muhammad, & Marchy, 2023). Education is also very much needed to build a creative, active, productive and quality generation (Purwanto, 2021; Ramadhaniyati, Dwi, Siregar, Muhammad, & Triansyah, 2023; Sanusi, Triansyah, Muhammad, & Susanti, 2023).

In the world of education there is one science in the field of education, namely the field of mathematics which is one of the most important aspects, both for students and for the development of other scientific fields and the position of mathematics in the field of education has great benefits. According to Mayani et al., (2022) mathematics is a basic science that has many benefits in everyday life, from the smallest events to the big events, all of which use mathematics. One of the compulsory subjects that must be received by students starting from elementary school to the tertiary level is mathematics (Mahsun, 2020; Muhammad, Himmawan, Mardiyah, & Dasari, 2023). Next according Nuraeni (2020) mathematics is a subject that trains students to think logically, carefully and rationally. This mindset needs to be owned as a provision in everyday life that can help humans to solve problems in various life needs.



Prihatini (2017) clarify that interested in learning is an attitude, ability, condition, process of finding efficient problem solving and changes in behavior to produce products or ideas in learning activities. Meanwhile, according to (Hudaya, 2018; Muhammad & Yolanda, 2022) interest in learning is the seriousness of students to focus on following the learning process properly, with this interest students will gain learning experiences like a magnet that can make students interested in learning. In learning mathematics students will learn and practice thinking critically, carefully, logically and creatively if students have a high interest in learning (Muhammad, Yolanda, Andrian, & Rezeki, 2022; Sirait, 2016). So this interest in learning is very important for every student to have in the learning process, with an interest in learning students will be serious in learning and will also change behavior to produce products or ideas.

According to Tafonao (2018) learning media make a very important contribution when carrying out learning process activities that are unified and cannot be solved from the field of education, learning mathematics at all levels of education will continue to adapt to the times and demands of life (Muhammad, Elmawati, Samosir, & Marchy, 2023; Muhammad, Samosir, Elmawati, & Marchy, 2023; Sennen, 2018). According to Khairani & Febrinal (2016) media is a useful factor in the success of the teaching and learning process which helps the process of providing information by the teacher to students, the use of media can also foster learning efficiency so that learning objectives are achieved. Septiawan & Abdurrahman (2018) revealed that in order to achieve learning objectives in the classroom, media is used. The media used functions as an intermediary, and can convey messages appropriately, and this media can solve student problems in the learning process inside the classroom or outside the classroom.

According to Ibda (2017) Multimedia is a media that can combine two or more media elements in an integrated manner. Interactive multimedia is a learning model to generate thoughts, motivation, deliver messages, and students' interests so as to encourage the teaching and learning process, media is used to evoke student learning experiences to become more real. Interactive multimedia becomes a reinforcement in learning, including so that the message given in a material looks



real, provokes most of the senses so that an interaction and visualization in the form of images, video forms and animation forms can make students remember more and the learning process will be more practical so that will save time, costs and energy (Muhammad, Mukhibin, Naser, & Dasari, 2022).

The use of augmented reality learning media has lots benefit to the learning process in class (Almenara & Vila, 2019; Patzer, Smith, & Keebler, 2014). The use of *Augmented learning media Reality* can increase students' interest in learning (Santos et al., 2016). This is in line with research conducted by (Sarkar, Kadam, & Pillai, 2020) which revealed that with *Augmented learning media reality* this can increase student learning interest and student cooperation. *augmented Reality* makes it easier for teachers in the learning process, augmented media reality which was validated by experts in a very valid category (Pujiastuti, Haryadi, & Arifin, 2020), further from research conducted by Dinayusadewi & Agustika (2020) was concluded that the validation results obtained a percentage of 93 % and practicality with a percentage of 89, 33 %. This shows that the learning media meets the requirements for use in teaching and learning.

At this time the era of the industrial revolution *Four Point Zero* (4.0) the development and progress of technology has been increasing rapidly so that it will make it easier for humans to do their work, this is evidenced by the many applications that can help students or teachers in the learning process. According to Wahyuni & Yolanda (2020) learning that requires the same concept continuously and requires high accuracy which can complete graphs accurately and quickly is very appropriate when using learning media. One of them is the media *augmented reality*. Augmented reality is technology new integrate digital information with the real world (Castañeda, Guerra, & Ferro, 2018).

The use of augmented reality software in learning greatly facilitates students in mastering lessons and fosters the interest of students who think that mathematics is difficult to learn and makes students bored (Kartika, 2014). According to Aritonang (2008) an efficient learning situation is that there is interest and attention to students during learning. Interest is a characteristic that is more settled to an individual person. Interest contributes greatly to learning. When students already



have great interest, they will put a lot of attention and concentration on the subject. There have been many studies related to the use of augmented reality in increasing student interest in learning, in general in various fields of education (Endra, Cucus, & Ciomas, 2020; Monita, Sari, Randikai, & Ibrahim, 2019; Oktaviani, Lusa, & Noperman, 2020), and especially in learning mathematics (Sutresna, Yanti, & Safitri, 2020; Tiyasari & Sulisworo, 2021; Wirawan, Faizah, & Wahyuningsih, 2021), these studies discuss interest in learning mathematics after using augmented reality media at the elementary level but no one has seen interest in learning students with augmented reality media are at a higher level in learning mathematics, therefore researchers want to see how students' learning interest in MTs students after using Augmented reality learning media on triangle and rectangle.

Researchers chose triangular and quadrilateral material with *Augmented applications reality* because triangles and quadrilateral lessons sometimes the material is often overlooked when teaching and does not describe it directly on the blackboard so students will find it difficult to remember it, this material will be presented with complete material and explanations and animations and clear pictures. Through the development of learning media using *software augmented reality* is expected to assist teachers in conveying triangular and quadrilateral subject matter, and can increase motivation and interest in students in the learning process. Therefore, the researcher is interested in analyzing students' interest in using *the software augmented reality* as learning media. The purpose of this study is to describe students' interest in using *software augmented reality* as learning media on triangle and quadrilateral material.

## METHOD

This study aims to describe students' interest in using *software augmented reality* as learning media on triangle and quadrilateral material. This research is a quantitative research conducted with quantitative descriptive methods.

This was conducted in the academic year 2022/2023. The research subjects were 20 class VII MTs students who were taken randomly. The responses to students' learning interest were obtained from converting questionnaire data from





students' learning interest responses into quantitative data. <sup>5</sup> The instrument used in this study was a non-test instrument in the form of a learning interest questionnaire with 18 statement items with 4 criteria.

Before distributing the student interest questionnaire, validation was carried out by 4 experts so that the learning media was in accordance with the suggestions given. After validation is complete, the next stage is distributing the questionnaire, the researcher uses *the Google Form* with 18 statements with 4 criteria that the researcher has modified from Syahputra (2020), namely (1) Feelings of Happiness; (2) Curious Students; (3) Student Attention; (4) Student Engagement. The following is the google link to the student interest questionnaire form <https://bit.ly/3yjHklA>

<sup>21</sup> To calculate the reliability of the questionnaire, researchers used SPSS 24, as can be seen in table 1 below

**Table 1. Reliability questionnaire interest Study student**

Cronbach's Alpha	N of Items
.847	18

From table 1 above it can be seen that Crinbach's Alpha with N of items = 18 is 0.847. This means that the level of reliability of the questionnaire is included in the high category with  $r_{count} = 0.847$  and  $r_{table} = 0.4438$ .

The scale that the researcher used is a Likert scale which has been modified by the researcher so that it can determine the parts of the scale contained in the questionnaire and there are 4 scales, namely the first is a scale that strongly disagrees, then the second is a scale that does not agree, the third is an agree scale, and the last is scale tohighy agree. Negative statements are the opposite of positive statements so that the score used is also the same. The scale of interest in students can be seen in the table below:



**Table 2. Interest Scale Distribution**

Scale	Positive Value	Negative Value
Strongly agree	4	1
Agree	3	2
Don't agree	2	3
Strongly Disagree	1	4

Source : (Rahmawati, Bungsu, Islamiah, & Setiawan, 2019)

The research used descriptive analysis techniques supported by *Microsoft excel*. The data processing technique is calculated by looking for the total percentage of each indicator. then the results of the data analysis are obtained, the next action is to distribute scores or ranges of student interest questionnaires with the following criteria:

**Table 3. Distribution of Assessment Value in the Questionnaire**

No	Range	Category
1	81%-100 %	Very high
2	68%-80 %	High
3	41%-60 %	High enough
4	21%-40 %	Not high enough
5	0% - 20 %	Very Less High

Source: Arikunto (2010).

## RESULT AND DISCUSSION

At the time of carrying out the research, from the observations it was found that the teaching and learning process was still carried out conventionally. Arousing interest in students is very important in the learning process, one of which can be by using assisted learning media *Software augmented reality*. Initial view of *Augmented reality* starting from the media main page to the media evaluation page are as follows:



**Figure 1. Main Media Layout**



This work is licensed under a [Creative Commons Attribution-NonCommercial 4.0 International License](https://creativecommons.org/licenses/by-nc/4.0/).







Figure 2. Media Material Layout



Figure 3. Layouts example question

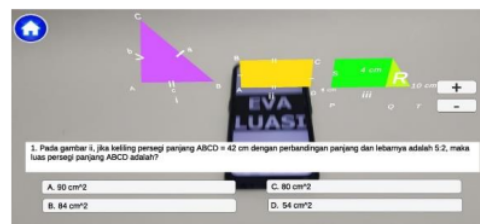


Figure 4. Media Evaluation Layouts

After the researcher did the learning with 20 students, then the students completed or filled out the questionnaire that had been given. The results of indicator research were obtained from feelings of pleasure to student involvement as follows:

#### Feelings of Happiness Indicator

In this indicator, the value with high criteria is 78 % , as shown in the following table:

Table 4. Response Analysis Results Student On Indicator Feeling Like

	Feeling Like				
Total Score	61	62	64	63	62
Maximum Total Score	80	80	80	80	80
Percentage	76.25%	77.5%	80%	78.75%	77.5%
Average	78%				
Criteria	High				



This indicator contains five statements divided into three positive statements and two negative statements, while the positive statements are as follows: I enjoy learning mathematics using *Augmented media Reality* , then I became more masterful of mathematics when learning to use *Augmented media reality* and the third is learning to use *Augmented media reality* more fun, then the two negative statements are as follows: I don't like learning mathematics by using *Augmented media reality* and I don't understand the math lessons given in *Augmented media reality*

#### Curious Students Indicator

In this indicator, an average percentage of 81.5% is obtained which is classified as very high , as shown in the following table:

**Table 5. Analysis Results Response Student On Indicator Curious Students**

	Curious Students				
Total Score	75	60	59	70	62
Maximum Total Score	80	80	80	80	80
Percentage	93.75%	75%	73.75%	87.5%	77.5%
Average	81.5%				
Criteria	Very high				

This indicator contains five statements and is divided into two positive statements and three negative statements. The positive statements are: I am enthusiastic about participating in mathematics lessons by utilizing *Augmented media reality* and learning mathematics by utilizing *Augmented media reality* made me more interested in participating in learning, then three negative statements, namely: Learning mathematics by utilizing *Augmented media reality* makes me bored of learning, learning mathematics by utilizing *Augmented media reality* makes me not take triangles and quadrilaterals seriously and I feel burdened with learning math material by using *Augmented media reality*.

#### Student Attention Indicator

In this indicator, an average percentage of 81.90 % is obtained which is classified as very high , as shown in the following table:



**Table 6. Analysis Results Response Student On Indicator Attention Students**

Attention Students				
Total Score	61	61	60	80
Maximum Total Score	80	80	80	80
Percentage	76.25%	76.25%	75%	100%
Average	81.90%			
Criteria	Very high			

This indicator contains four statements and is divided into three positive statements and one negative statement. The positive statements are: When I can't solve math practice questions, I re-read material on learning media, I try to solve complex math problems even though it takes a long time, and and I pay attention to tables and diagrams on *Augmented learning media reality*. Furthermore, the negative statement is: I am reluctant to do difficult math assignments.

#### **Student Engagement Indicator**

In this indicator, an average percentage of 75.6 3% is obtained which is classified as high , as shown in the following table:

**Table 7. Analysis Results Response Student On Indicator Attention Students**

Attention Students				
Total Score	60	61	61	60
Maximum Total Score	80	80	80	80
Percentage	75%	76.25%	76.25%	75%
Average	75,6 3 %			
Criteria	High			

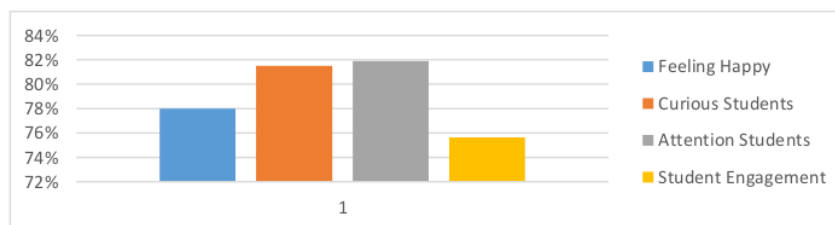
This indicator contains four statements and is divided into two positive statements and two negative statements. As for the positive statements, namely: In learning mathematics I dare to express my opinion and I am enthusiastic about solving math problems by utilizing *Augmented media Reality* , then two negative statements, namely: in learning mathematics I am very embarrassed to ask questions and I am not enthusiastic about making math notes when using *Augmented media reality*. The recapitulation of the results of the student interest questionnaire analysis from all indicators obtained an average percentage of 79.25% with height, as in the following table:



**Table 8. Recapitulation of Student Interest Questionnaire Analysis Results**

No	Indicator	Average	Criteria
1	Feeling happy	78 %	High
2	Curious Students	81.50 %	Very high
3	Attention Students	81.90 %	Very High
4	Student Engagement	75,63 %	High
Average		79,25 %	High

In the table above, the indicator of feeling happy obtained a percentage of 78% with high criteria, then the Curious Students indicator obtained a percentage of 81.50% with very high criteria, on the student attention indicator of 81.90% with very high criteria which is an indicator of middle the highest percentage and student involvement indicator of 75.63% with high criteria. This is in accordance with what was said by (Santos et al., 2016) that augmented media Reality has benefits especially in increasing students' attention. This means that students' attention can be increased with this learning media because previously students have never used interactive learning media such as Augmented media reality. The average of the four indicators is 79.25% which indicates a very high category. For more details, see the bar chart in the following figure:



**Figure 5. Diagram of Recapitulation of Student Interest**

Based on the recapitulation of the results of the student interest questionnaire analysis for each indicator, response students of class VII MTs on the use of *software augmented reality* get a positive response. On the happy feeling indicator, an average of 78 percent is obtained in the high category, which means that students enjoy learning to use *software augmented reality*. This can generate students' interest and motivation when learning about triangles and quadrilaterals. The statements on the feeling happy indicator contain five statements and are divided into three positive statements and two negative statements. This is



the section that gets the highest average of the other three sections. On the Curious Students indicator, an average of 81.50% is obtained with a very high category, which means that students are very interested in learning to use the software augmented reality This. This can generate Curious Students and motivation when learning about triangles and quadrilaterals. The statements in the Curious Students section contain five statements which are divided into two positive statements and three negative statements. This is the section that gets the second highest average of the other three sections.

The student attention indicator obtained an average of 81.90% with a very high category, which means students are curious about learning to use software augmented reality. This can generate students' interest and motivation when learning about triangles and quadrilaterals. The statements in the Curious Students section contain four statements which are divided into three positive statements and one negative statement. This is the section that gets the lowest average of the other three sections. In the last indicator, namely the student involvement indicator, an average of 75.63% is obtained with the high category, which means that students are actively learning to use the software augmented reality. This can generate students' interest and motivation when learning about triangles and quadrilaterals. The statements in the Curious Students section contain four statements divided into two positive statements and two negative statements. This is the section that gets the second lowest average of the three other sections. Furthermore, the average result of the student interest questionnaire analysis obtained a value of 79.25% in the high category. This shows that there is a positive response to students' interest in using the software augmented reality as a learning medium.

Research results supported by research conducted (Sarkar et al., 2020) revealed that with the existence of *Augmented learning media reality* this can increase student learning interest and student cooperation. *Augmented Reality* makes it easier for teachers in the learning process, augmented media reality which was validated by experts in a very valid category (Pujiastuti et al., 2020), further from research conducted by (Dinayusadewi & Agustika, 2020) it was concluded that the validation results obtained a percentage of 93% and practicality with a



percentage of 89,33 %. This shows that the learning media meets the requirements for use in teaching and learning. Relevant previous research, namely research related to interest in learning by using augmented reality in learning mathematics as carried out by (Sutresna et al., 2020; Tiyasari & Sulisworo, 2021; Wirawan et al., 2021), from some of these studies looking at interest in ar at the elementary level shows that the use of augmented reality media in learning mathematics can increase students' interest in learning mathematics.

Research conducted by (Muhammad, Mukhibin, et al., 2022) regarding bibliometric analysis of the use of learning media in education, especially in mathematics education, places augmented reality media as the focus of media research, this research also explains that augmented reality media is used to attract student interest and motivation. meaning that the results of research conducted by (Muhammad, Mukhibin, et al., 2022) support this research. In addition to increasing interest in learning, augmented reality media is also able to improve students' critical thinking skills (Angraini, Alzaber, Sari, Yolanda, & Muhammad, 2022; Angraini, Sari, & Muhammad, 2023).

Based on the discussion that has been described, it can be concluded that the use of media by utilizing applications *augmented reality* this can generate interest in students and student motivation in online learning. The indicator that gets the highest average is the student's attention indicator, while the one that gets the lowest average is the student's engagement indicator. Two of them got an average in a very high category, namely Curious Students and student attention, two indicators got an average in a high category, namely indicators of feeling happy and student involvement. This shows that the use of software *augmented reality* This is in the learning process, namely in the lessons of triangles and quadrilaterals for class VII MTs can increase students' interest in learning

## CONCLUSION

Based on the results and discussion above , it can be concluded that the students' responses in using *Augmented reality* This is included in the high category which can be shown by the value of the four indicators of 79.25%. With the





indicator of feelings of pleasure obtained an average percentage of 78.00 %. For indicators of Curious Students, an average percentage of 81.50 was obtained. Then the student attention indicator obtained 81.90%, the last indicator, namely the student involvement indicator obtained 75.63%. Two indicators are included in the very high category and the other two indicators are in the high category. This shows a positive response from student to user *augmented Reality* during the learning process. So that the use of *Augmented learning* media This reality can facilitate online lessons which can increase interest in students. meaning that the results of this study can be useful for teachers to be able to increase student interest in learning using learning media, especially using augmented reality software.

This research is limited to seeing students' interest in using *software augmented reality* as a learning medium. The suggestions for further research are in making *Augmented learning media reality* It is hoped that researchers will make instructional media with other materials with even more attractive displays so as to create varied learning media, and this research is expected to be a reference for similar studies.

## REFERENCES

- Almenara, J. C., & Vila, R. R. (2019). The motivation of technological scenarios in Augmented Reality (AR): Results of different experiments. *Applied Sciences (Switzerland)*, 9(14), 1–16.
- Angraini, L. M., Alzaber, A., Sari, D. P., Yolanda, F., & Muhammad, I. (2022). IMPROVING MATHEMATICAL CRITICAL THINKING ABILITY THROUGH AUGMENTED REALITY-BASED LEARNING. *AKSIOMA: Jurnal Program Studi Pendidikan Matematika*, 11(4), 3533. <https://doi.org/10.24127/ajpm.v11i4.5968>
- Angraini, L. M., & Muhammad, I. (2023). Analisis Bibliometrik : Tren Penelitian RME dalam Pembelajaran Matematika selama Pandemi. *JNPM (Jurnal Nasional Pendidikan Matematika)*, 7(2), 224–239.
- Angraini, L. M., Sari, D. P., & Muhammad, I. (2023). *Indonesian Journal of Teaching and Learning AUGMENTED REALITY : IMPROVEMENT OF CRITICAL THINKING BASED ON STUDENTS ' INITIAL MATHEMATICAL ABILITY*. 2(1), 137–152.
- Arikunto, S. (2010). *Manajemen Penelitian*. Jakarta: Rhineka Cipta.
- Aritonang, K. T. (2008). Minat dan Motivasi dalam Meningkatkan Hasil Belajar Siswa. *Jurnal Pendidikan Penabur*, 7(10), 11–21.
- Castañeda, M. A., Guerra, A. M., & Ferro, R. (2018). Analysis on the gamification and



implementation of Leap Motion Controller in the I.E.D. Técnico industrial de Tocancipá. *Interactive Technology and Smart Education*, 15(2), 155–164.

Dinayusadewi, N. P., & Agustika, G. N. S. (2020). Development Of Augmented Reality Application As A Mathematics Learning Media In Elementary School Geometry Materials. *Journal of Education Technology*, 4(2), 204. <https://doi.org/10.23887/jet.v4i2.25372>

Endra, R. Y., Cucus, A., & Ciomas, M. (2020). Penerapan Teknologi Augmented Reality bagi Siswa untuk meningkatkan Minat Belajar Bahasa Mandarin di Sekolah. *Jurnal Pengabdian Kepada Masyarakat (JPKM) TABIKPUN*, 1(1), 19–30. <https://doi.org/10.23960/jpkmt.v1i1.9>

Hudaya, A. (2018). Pengaruh Gadget Terhadap Sikap Disiplin Dan Minat Belajar Peserta Didik. *Research and Development Journal of Education*, 4(2), 86–97. <https://doi.org/10.30998/rdje.v4i2.3380>

Ibda, H. (2017). *Media Pembelajaran Berbasis Wayang*. Semarang: Pilar Nusantara.

Kartika, H. (2014). Pembelajaran Matematika Berbantuan Software Matlab sebagai Upaya Meningkatkan Kemampuan Komunikasi Matematis dan Minat Belajar Siswa SMA. *Jurnal Pendidikan Unsika*, 2(1), 21–33.

Khairani & Febrinal, D. (2016). Pengembangan Media Pembelajaran Dalam Bentuk Macromedia Flash Materi Tabung Untuk SMP Kelas IX. *Jurnal Ipteks Terapan*, 10(2), 95–102.

Mahsun. (2020). Pengembangan Alat Peraga Pita Perkalian Pada Pembelajaran Matematika Dengan Pendekatan Saintifik di MI Miftahul Ulum Cermenan Jombang. *Research And Thought Elementary School Of Islam Journal*, 1(2), 15–25.

Marchy, F., Murni, A., Kartini, & Muhammad, I. (2022). The Effectiveness of Using Problem Based Learning (PBL) in Mathematics Problem Solving Ability for Junior High School Students. *AlphaMath Journal of Mathematics Education*, 8(2), 185–198. <https://doi.org/10.30595/alphamath.v8i2.15047>

Maryanto, B. P. A., Rachmawati, L. N., Muhammad, I., & Sugiyanto, R. (2023). Kajian Literatur: Problematika Pembelajaran Matematika Di Sekolah. *Delta-Phi: Jurnal Pendidikan Matematika*, 1(2), 93–106.

Mayani, I., Suripah, & Muhammad, I. (2022). Analysis of Students' Errors in Solving Statistical Problems: A Case of 8th Grade Students at SMPN 4 Siak Hulu, Indonesia. *Jurnal Pendidikan Mipa*, 23(4), 1826–1838. <https://doi.org/10.23960/jpmipa/v23i2.pp1827-1838>

Monita, T., Sari, R. D., Randikai, M., & Ibrahim, A. (2019). Analisis Pengaruh Minat Belajar Siswa/I Terhadap Media Pembelajaran Berbasis Augmented Reality. *Jurnal Sistem Dan Teknologi Informasi*, 5(1), 34–38.

Muhammad, I., Darmayanti, R., & Arif, V. R. (2023). Discovery Learning Research in Mathematics Learning : A. *Delta-Phi : Jurnal Pendidikan Matematika*, 1(1), 72–84.

Muhammad, I., Elmawati, Samosir, C. M., & Marchy, F. (2023). Bibliometric Analysis: Research on Articulate Storylines in Mathematics Learning. *EduMa: Mathematics Education Learning And Teaching*, 12(1), 77–87.



This work is licensed under a [Creative Commons Attribution-NonCommercial 4.0 International License](https://creativecommons.org/licenses/by-nc/4.0/).



<https://doi.org/10.24235/eduma.v12i1.12607>

- Muhammad, I., Himmawan, D. F., Mardiyah, S., & Dasari, D. (2023). Analisis Bibliometrik: Fokus Penelitian Critical Thinking dalam Pembelajaran Matematika (2017–2022). *JPMI (Jurnal Pembelajaran Matematika Inovatif)*, 6(1), 78–84. <https://doi.org/10.22460/jpmi.v6i1.14759>
- Muhammad, I., Mukhibin, A., Naser, A. do muhammad, & Dasari, D. (2022). Bibliometric Analysis: Research Trend of Interactive Learning Media in Mathematics Learning in Indonesia. *Prisma Sains: Jurnal Pengkajian Ilmu Dan Pembelajaran Matematika Dan IPA IKIP Mataram*, 11(1), 10–22. <https://doi.org/10.26737/jpmi.v8i1.4005>
- Muhammad, I., Samosir, C. M., Elmawati, & Marchy, F. (2023). Bibliometric Analysis : Adobe Flash Cs6 Research in Mathematics Learning. *Jurnal Pendidikan Matematika Indonesia*, 8(1), 25–34. <https://doi.org/10.26737/jpmi.v8i1.4005>
- Muhammad, I., Triansyah, F. A., Fahri, A., & Gunawan, A. (2023). Analisis Bibliometrik: Penelitian Game-Based Learning pada Sekolah Menengah 2005-2023. *Jurnal Simki Pedagogia*, 6(2), 465–479. Retrieved from <https://www.edukatif.org/index.php/edukatif/article/view/4713>
- Muhammad, I., & Yolanda, F. (2022). Minat Belajar Siswa Terhadap Penggunaan Software Adobe Flash Cs6 Profesional Sebagai Media Pembelajaran. *JIPM (Jurnal Ilmiah Pendidikan Matematika)*, 11(1), 1–12. <https://doi.org/10.25273/jipm.v11i1.11083>
- Muhammad, I., Yolanda, F., Andrian, D., & Rezeki, S. (2022). Pengembangan Media Interaktif Menggunakan Adobe Flash Cs6 Profesional Pada Materi Relasi Dan Fungsi. *Journal of Authentic Research on Mathematics Education (JARME)*, 4(1), 128–140. <https://doi.org/10.37058/jarme.v4i1.3958>
- Nuraeni, N. (2020). Meningkatkan Hasil Belajar Matematika pada Materi Bangun Ruang melalui Alat Peraga Balok dan Kubus pada Siswa Kelas VI c di Sdn Danau Indah 01 Kec. Cikarang Barat Kabupaten Bekasi. *Pedagogiana*, 8(4), 325540. <https://doi.org/10.47601/AJP.17>
- Oktaviani, Y., Lusa, H., & Noperman, F. (2020). Pengaruh Augmented Reality sebagai Media Pembelajaran terhadap Minat Belajar Siswa Mata Pelajaran IPA SD Kota Bengkulu. *JURIDIKDAS: Jurnal Riset Pendidikan Dasar*, 2(3), 202–208. <https://doi.org/10.33369/juridikdas.2.3.202-208>
- Patzer, B., Smith, D. C., & Keebler, J. R. (2014). Novelty and retention for two augmented reality learning systems. *Proceedings of the Human Factors and Ergonomics Society*, 2014-Janua, 1164–1168.
- Prihatini, E. (2017). Pengaruh Metode Pembelajaran Dan Gaya Belajar Terhadap Hasil Belajar Ipa. *Formatif: Jurnal Ilmiah Pendidikan MIPA*, 7(2), 171–179. <https://doi.org/10.24853/instruksional.1.2.152-158>
- Pujiastuti, H., Haryadi, R., & Arifin, A. M. (2020). The development of Augmented Reality-based learning media to improve students' ability to understand mathematics concept. *Unnes Journal of Mathematics Education*, 9(2), 92–101. Retrieved from <https://journal.unnes.ac.id/sju/index.php/ujme/article/view/39340>
- Purwanto, H. (2021). *Menggugat Pandemi Lewat Pendidikan*. Surabaya: Media Karya.



This work is licensed under a [Creative Commons Attribution-NonCommercial 4.0 International License](https://creativecommons.org/licenses/by-nc/4.0/).



- Rahmawati, N. S., Bungsu, T. K., Islamiah, I. D., & Setiawan, W. (2019). Analisis Minat Belajar Siswa Ma Al-Mubarak Melalui Pendekatan Saintifik Berbantuan Aplikasi Geogebra Pada Materi Statistika Dasar. *Journal On Education*, 01(03), 386–395.
- Ramadhaniyati, R., Dwi, K., Siregar, P., Muhammad, I., & Triansyah, F. A. (2023). Guide Discovery Learning ( GDL ) in Education : A Bibliometric Analysis. *Journal on Education*, 05(04), 11473–11484.
- Riyanti, G. (2018). Perilaku Bullying Ditinjau Dari Konsep Diri Pada Siswa / Siswi Smp Parulian 3 Medan. *Jurnal Psychomutiara*, 2(1), 1–16.
- Samosir, C. M., Muhammad, I., & Marchy, F. (2023). Research Trends in Problem Based Learning in Middle School ( 1998-2023 ): A Bibliometric Review. *Sustainable Jurnal Kajian Mutu Pendidikan*, 6(1), 46–58.
- Santos, M. E. C., Lübke, A. in W., Taketomi, T., Yamamoto, G., Rodrigo, M. M. T., Sandor, C., & Kato, H. (2016). Augmented reality as multimedia: the case for situated vocabulary learning. *Research and Practice in Technology Enhanced Learning*, 11(1), 1–23.
- Sanusi, N., Triansyah, F. A., Muhammad, I., & Susanti, S. (2023). Analisis Bibliometrik: Penelitian Communication Skills Pada Pendidikan Tinggi. *JiIP - Jurnal Ilmiah Ilmu Pendidikan*, 6(3), 1694–1701. <https://doi.org/10.54371/jiip.v6i3.1763>
- Sarkar, P., Kadam, K., & Pillai, J. S. (2020). Learners' approaches, motivation and patterns of problem-solving on lines and angles in geometry using augmented reality. *Smart Learning Environments*, 7(1), 1–23.
- Sennen, E. (2018). Mengelola Pembelajaran Literasi Matematika Berbasis Pembelajaran Matematika Realistik Bagi Siswa Sekolah Dasar. *Jurnal Pendidikan Dan Kebudayaan Missio*, 10(1), 79–83. Retrieved from <http://jurnal.unikastpaulus.ac.id/index.php/jpkm/article/view/58>
- Septiawan, S & Abdurrahman, A. (2018). Pengembangan Media Pembelajaran Matematika Berbasis Multimedia Interaktif dengan Menggunakan Adobe Flash CS6 Profesional pada Materi Barisan & Deret Kelas XI SMA. Universitas Islam Riau, Pekanbaru.
- Sirait, E. D. (2016). Pengaruh Minat Belajar Terhadap Prestasi Belajar Matematika. *Formatif: Jurnal Ilmiah Pendidikan MIPA*, 6(1), 35–43. <https://doi.org/10.30998/formatif.v6i1.750>
- Sutisno, A. (2019). *Telaah Filsafat Pendidikan*. Yogyakarta: K-Media.
- Sutresna, J., Yanti, F., & Safitri, A. E. (2020). Media Pembelajaran Matematika Pada Usia Dini Menggunakan Augmented Reality. *Jurnal Sistem Dan Teknologi Informasi (Justin)*, 8(4), 424. <https://doi.org/10.26418/justin.v8i4.42900>
- Syahputra, E. (2020). *Snowball Throwing Tingkatkan Minat dan Hasil Belajar*. Sukabumi: Haura Publishing.
- Tafonao, T. (2018). Peranan Media Pembelajaran Dalam Meningkatkan Minat Belajar Mahasiswa. *Jurnal Komunikasi Pendidikan*, 2(2), 103–114. <https://doi.org/https://doi.org/10.32585/jkp.v2i2.113>
- Tiyasari, S., & Sulisworo, D. (2021). Pengembangan Kartu Bermain AR Berbasis Teknologi Augmented Reality sebagai Multimedia Pembelajaran Matematika.



Vygotsky, 3(2), 123. <https://doi.org/10.30736/voj.v3i2.411>

Wahyuni, P., & Yolanda, F. (2020). Development of Macromedia Flash Based Teaching Materials on It-Based Statistic Data Analysis. *JIPM (Jurnal Ilmiah Pendidikan Matematika)*, 8(2), 131–138. <https://doi.org/10.25273/JIPM.V8I2.5483>

Wirawan, R., Faizah, A. N., & Wahyuningsih. (2021). Implementasi Augmented Reality 3 Dimensi pada Pembelajaran Matematika di SDN 134 Kalumpang. *Jtriste*, 8(2), 32–40.



This work is licensed under a [Creative Commons Attribution-NonCommercial 4.0 International License](https://creativecommons.org/licenses/by-nc/4.0/).



# STUDENT LEARNING INTEREST IN THE USE OF AUGMENTED REALITY MEDIA ON TRIANGLES AND QUADRILATERALS

## ORIGINALITY REPORT

8%

SIMILARITY INDEX

3%

INTERNET SOURCES

7%

PUBLICATIONS

0%

STUDENT PAPERS

## PRIMARY SOURCES

- 1 Abidah Rohmatillah, Sri Sutarni. "THE IMPACT OF HOTS-ORIENTED REALISTIC MATHEMATICS LEARNING ON LEARNING OUTCOMES IN TERMS OF STUDENT INTEREST", AKSIOMA: Jurnal Program Studi Pendidikan Matematika, 2023  
Publication <1 %
- 2 Irma Savitri Sadikin, Erista Martyani. "Integrating Augmented Reality (AR) In EFL Class For Teaching Vocabulary", PROJECT (Professional Journal of English Education), 2020  
Publication <1 %
- 3 "Smart Industry & Smart Education", Springer Science and Business Media LLC, 2019  
Publication <1 %
- 4 Ilham Muhammad, Febrinna Marchy, Husnul Khatimah Rusyid, Dadan Dasari. "Analisis Bibliometrik: Penelitian Augmented Reality <1 %



## Dalam Pendidikan Matematika", JIPM (Jurnal Ilmiah Pendidikan Matematika), 2022

Publication

---

5

Anderson Leonardo Palinussa, Thobita Dias. "STUDENTS' MATHEMATICAL REASONING ABILITY ON THE CIRCLE CONCEPT", AKSIOMA: Jurnal Program Studi Pendidikan Matematika, 2022

Publication

---

<1 %

6

Siska Apulina Peranginangin, Sahat Saragih, Pargaulan Siagian. "Development of Learning Materials through PBL with Karo Culture Context to Improve Students' Problem Solving Ability and Self-Efficacy", International Electronic Journal of Mathematics Education, 2019

Publication

---

<1 %

7

Fadila Meina Luppy, Rahmad Bustanul Anwar, Nego Linuhung, Rina Agustina, Dwi Rahmawati. "The Development of Animation-Based Learning Media Using Construct 2 On Logic Material", MATEMATIKA DAN PEMBELAJARAN, 2020

Publication

---

<1 %

8

Vivi Rachmatul Hidayati, Subanji Subanji, Sisworo Sisworo. "Students' Mathematical Connection Error in Solving PISA Circle

<1 %

# Problem", JIPM (Jurnal Ilmiah Pendidikan Matematika), 2020

Publication

9

123dok.com

Internet Source

<1 %

10

Abd. Haris. "Keefektifan Problem-Based Learning dan Discoveri Learning Ditinjau dari Kemampuan Berfikir Kreatif Matematis dan Minat", JURNAL PENDIDIKAN MIPA, 2023

Publication

<1 %

11

Anggi Reviani Pulungan, Fibri Rakhmawati. "Tren Media Pembelajaran Matematika dalam Jurnal Pendidikan Matematika di Seluruh Indonesia", Jurnal Cendekia : Jurnal Pendidikan Matematika, 2022

Publication

<1 %

12

Dian Syafitri Chani Saputri, Dyah Susilowati. "Augmented Reality in Indonesia's Primary School: Systematic Mapping Study", International Journal of Engineering and Computer Science Applications (IJECSA), 2022

Publication

<1 %

13

E Afriani, A Asmar. "The development of device learning based on contextual teaching and learning improve mathematical communication skills class VII", Journal of Physics: Conference Series, 2020

Publication

<1 %

14

Fuzi Fauziah, Siti Gina Meilani, Salsabila Salsabila. "COOPERATIVE LEARNING STRATEGY IN CRITICAL READING ENGLISH TEXT THROUGH TEAM GAME TOURNAMENT (TGT) AND JENGA", Jurnal JOEPALLT (Journal of English Pedagogy, Linguistics, Literature, and Teaching), 2021

Publication

<1 %

15

Tikeu Yuaruan Nesitaf Sari, Mohammad Mahfud Effendi, Reni Dwi Susanti. "The development of edmodo-based learning as a means of online daily examinations at Batu Islam high school", Math Didactic: Jurnal Pendidikan Matematika, 2020

Publication

<1 %

16

Zuhri Zuhri. "THE EFFECT OF ONLINE LEARNING METHODES ON STUDENT'S LEARNING ABILITIES IN STATISTICS COURSE", AKSIOMA: Jurnal Program Studi Pendidikan Matematika, 2021

Publication

<1 %

17

[atepisius.blogspot.com](http://atepisius.blogspot.com)

Internet Source

<1 %

18

[ejournal.gunadarma.ac.id](http://ejournal.gunadarma.ac.id)

Internet Source

<1 %

19

[journal.unismuh.ac.id](http://journal.unismuh.ac.id)

Internet Source

<1 %

20

[journalfkipunipa.org](http://journalfkipunipa.org)

Internet Source

&lt;1 %

21

[jurnal.unsil.ac.id](http://jurnal.unsil.ac.id)

Internet Source

&lt;1 %

22

Dina Octaria, Yunika Lestaria Ningsih,  
Destiniar Destiniar, Putri Fitriasaki.

"Development of Higher Order Thinking Skills  
(HOTS) Test Instruments in Geometry", JTAM  
(Jurnal Teori dan Aplikasi Matematika), 2022

Publication

&lt;1 %

23

Dzarroh Qolba Musoffa, Ani Nurhayati, Siti  
Chotimah. "Analisis Minat Belajar Siswa Kelas  
III Pada Materi Bangun Datar Berbantuan  
VBA", Journal on Education, 2020

Publication

&lt;1 %

24

Inggar Tri Agustin Mawarni, Novia Ratnasari,  
Anik Nur Handayani, Muladi Muladi, Eka  
Purmanta Aji Wibowo, Rahmania Sri Untari.

"Effectiveness of Whatsapp in Improving  
Student Learning Interests During The Covid-  
19 Pandemic", 2020 4th International  
Conference on Vocational Education and  
Training (ICOVET), 2020

Publication

&lt;1 %

25

Irfa'i Alfian Mubaidilla, Ziana Dhurrotul  
Ainiyah. "The Development of Learning Media  
Based on Islamic Comics in Natural Sciences

&lt;1 %

Force and Motion Material", Madrosatuna:  
Journal of Islamic Elementary School, 2022

Publication

---

26

Nuril Hidayati, Farizha Irmawati. "Developing of science environment technology and society based on multimedia in human anatomy physiology learning", JP BIO (Jurnal Pendidikan Biologi), 2020

Publication

---

<1 %

27

Putu Eka Suarmika, Ida Bagus Putu Arnyana, I Wayan Suastra, I Gede Margunayasa. "Reconstruction of disaster education: The role of indigenous disaster mitigation for learning in Indonesian elementary schools", International Journal of Disaster Risk Reduction, 2022

Publication

---

<1 %

28

Rifa Mar'ah Sholihah, Harry Dwi Putra, Heris Hendriana. "The Relation Between Self-Confidence and Mathematical Problem Solving Ability on Islamic Junior High School Students", (JIML) JOURNAL OF INNOVATIVE MATHEMATICS LEARNING, 2023

Publication

---

<1 %

29

[ejournal1.com](http://ejournal1.com)

Internet Source

---

<1 %

30

[indico.brin.go.id](http://indico.brin.go.id)

Internet Source

---

<1 %

31	journal3.uin-alauddin.ac.id Internet Source	<1 %
32	jurnal.unej.ac.id Internet Source	<1 %
33	repository.unp.ac.id Internet Source	<1 %
34	Jesús López-Belmonte, Antonio-José Moreno-Guerrero, Juan-Antonio López-Núñez, Francisco-Javier Hinojo-Lucena. "Augmented reality in education. A scientific mapping in Web of Science", Interactive Learning Environments, 2020 Publication	<1 %
35	Tomi Apra Santosa, Zulyusri Zulyusris, Abi Suwars, Khodzijah Nur Amalia. "The Educational and Learning Problematic at Senior High School", Tarbiyah : Jurnal Ilmiah Kependidikan, 2021 Publication	<1 %
36	Yessi Oktaviani, Herman Lusa, Feri Noperman. "Pengaruh Augmented Reality sebagai Media Pembelajaran terhadap Minat Belajar Siswa Mata Pelajaran IPA SD Kota Bengkulu", JURIDIKDAS: Jurnal Riset Pendidikan Dasar, 2020 Publication	<1 %



37

Eka Kusumaningrum, Puri Pramudiani. "The Influence of Using Kahoot Learning Media on Primary School Students' Learning Interest in Social Studies", EDUKATIF : JURNAL ILMU PENDIDIKAN, 2021

Publication

<1 %

38

Henry Suryo Bintoro, Sumaji Sumaji. "PROSES BERPIKIR SPASIAL DITINJAU DARI KECERDASAN INTRAPERSONAL MAHASISWA PENDIDIKAN MATEMATIKA", AKSIOMA: Jurnal Program Studi Pendidikan Matematika, 2021

Publication

<1 %

39

Tati Nurhayati, Dwi Anita Alfiani, Dewi Setiani. "The Effect of Crossword Puzzle Application on The Students' Learning Motivation in Science Learning", Al Ibtida: Jurnal Pendidikan Guru MI, 2019

Publication

<1 %

40

[etheses.uin-malang.ac.id](https://etheses.uin-malang.ac.id)

Internet Source

<1 %

Exclude quotes On

Exclude matches Off

Exclude bibliography On