Jurnal Elementaria Edukasia
Volume 7, No. 4, Desember 2021, 3443-3454
DOI: 10.31949/jee.v7i4.11796

p-ISSN 2615-4625
e-ISSN 2655-0857

Canva-Based MPI Analysis of Critical Thinking Skills for Class VI Elementary School Mathematics Story Problems

Dian Wahyu Marpaung
Master of Elementary Education, Surabaya State University
dian.23008@mhs.unesa.ac.id

Wiryanto
Master of Elementary Education, Surabaya State University
wiryanto@unesa.ac.id

Tatag Yuli Eko Siswono
Master of Elementary Education, Surabaya State University
tatagsiswono@unesa.ac.id

Submitted: 2024-11-11
Revised: 2024-11-15
Accepted: 2024-11-29

ABSTRACT

This research was conducted because of students' inability to think critically, so there is a need for media interactive learning that can improve student learning outcomes, as well as teachers' ability to develop low IT-based learning media. This research aims to analyze the initial needs in developing Canva-based interactive media to improve the critical thinking skills of sixth grade elementary school students to solve Mathematics story problems on geometric material. It is hoped that Canva-based MPI can be a solution to students' difficulties in interpreting and solving story problems, which often require in-depth understanding and critical thinking skills. The method used in the research is Research and Development with the ADDIE research model, which consists: (1)Analysis, (2)Design, (3)Development, (4)Implementation, and (5)Evaluation. In addition, media validation was carried out by experts to evaluate the validity and effectiveness of Canva-based interactive media. The use of Canva results show that in developing learning media is able to provide more interesting and interactive story problem visualizations, thus having a positive impact on improving students' critical thinking abilities. It is hoped that this research can contribute to the development of effective and easily accessible learning media to improve the quality of mathematics learning in elementary schools, especially in terms skills to critical thinking solve story problems.

***Keywords**: Interactive Media; Canva, Critical Thinking; Mathematics Story Problems; Elementary School*

ABSTRAK

Penelitian ini dilakukan karena ketidakmampuan siswa dalam berpikir kritis sehingga perlu adanya media pembelajaran interaktif yang dapat meningkatkan hasil belajar siswa, serta rendahnya kemampuan guru dalam mengembangkan media pembelajaran berbasis IT. Penelitian ini bertujuan untuk menganalisis kebutuhan awal pengembangan media interaktif berbasis Canva untuk meningkatkan kemampuan berpikir kritis siswa kelas VI SD dalam menyelesaikan permasalahan cerita Matematika pada materi geometri. MPI berbasis Canva diharapkan dapat menjadi solusi kesulitan siswa dalam menafsirkan dan menyelesaikan soal cerita, yang seringkali membutuhkan pemahaman mendalam dan kemampuan berpikir kritis. Metode yang digunakan dalam penelitian adalah Research and Development dengan model penelitian ADDIE yang terdiri dari: (1)Analisis, (2)Desain, (3)Pengembangan, (4)Implementasi, dan (5)Evaluasi. Selain itu, validasi media dilakukan

oleh para ahli untuk mengevaluasi validitas dan efektivitas media interaktif berbasis Canva. Hasil penggunaan Canva menunjukkan bahwa dalam pengembangan media pembelajaran mampu memberikan visualisasi soal cerita yang lebih menarik dan interaktif, sehingga berdampak positif terhadap peningkatan kemampuan berpikir kritis siswa. Penelitian ini diharapkan dapat memberikan kontribusi terhadap pengembangan media pembelajaran yang efektif dan mudah diakses untuk meningkatkan kualitas pembelajaran matematika di sekolah dasar, khususnya dalam hal keterampilan berpikir kritis memecahkan masalah cerita.
Kata Kunci: Media Interaktif; kanvas; Pikir Kritis; Soal Cerita Matematika; Sekolah Dasar

INTRODUCTION

One of the most important fields of study presented at all levels of education is mathematics. Mathematics must be studied because it is very important for all aspects of life, especially for improving human thinking abilities (Wiwin & Mogi, 2023). In the process of learning mathematics, the ability to read, write, count, discuss and present solutions to a problem is required (Titin Nuraeni et al., 2023). Mathematics learning in elementary schools (SD) is often considered a big challenge for students, especially in understanding story problems. Many students find it difficult to solve math problems, especially in solving math problems. Further information shows that students often experience difficulty in solving word problems (Dasar, 2023). Story problems not only require students to master mathematical concepts, but also critical thinking skills in interpreting problems, understanding contexts, and formulating appropriate solutions. There are other goals or other skills and behaviors that are expected from the mathematics learning process. When studying mathematics, a person must think so that he is able to understand the mathematical concepts that have been studied and is able to use these concepts appropriately in solving problems (Rezeqi, 2023). A professional and effective teaching staff must have a certain set of competencies so that they can adopt creative approaches when learning takes place (Pristy & Sukartono, 2023)

In today's digital era, the concept of learning devices has gone beyond conventional boundaries such as books and blackboards. Information and communication technology opens up opportunities for innovation in the development of learning tools (Hatija, 2024). Teachers are required to be able to follow development of existing technology so that the learning process can run well (Angraini et al., 2017). Learning that emphasizes critical and creative thinking skills, as promoted in Kurikulum Merdeka, can help students develop more complex thinking skills and prepare them to face future challenges (Habaridota, 2023). An active learning process is characterized by comprehensive student involvement both physically, mentally and emotionally (Hasan, 2015). Solving mathematical problems in school is usually realized in the form of story problems. Students' skills in solving story problems, especially those related to problem solving aspects, are very useful in everyday life. However, not all students can easily work on story problems (Permatasari et al., 2023). This often caused by a lack of analytical skill and experience in linking mathematical concepts to real situations. Based on observations in the field, grade VI elementary school students often have difficulty understanding story problems due to the lack of media that helps them visualize the concepts and context of the problems. Advances in information technology have had an impact on the use of various types media as a tool in the learning process. Therefore, material regarding learning media is important for instructors or teachers, who are expected to be able to use this

media efficiently and effectively in delivering material to students in class (Acep Ruswan, Primanita Sholihah Rosmana, Annisa Nafira, Hanie Khaerunnisa, Ighna Zahra Habibina, Keysha Kholillah Alqindy, Khomsanuha Amanaturrizqi, 2024).

Canva is the many applications that teachers can use in creating learning media. Canva is an design application online, which provides a variety of graphic designs consisting of; presentations, posters, flyers, graphics, banners, , photo editing, invitation cards and Facebook covers (Tri Wulandari & Adam Mudinillah, 2022). Its flexible and diverse use allows teachers to create interesting and interactive learning materials, which can facilitate students' critical thinking skills. The Canva application can be used to innovate in learning media design so that thanks to various and interesting models, learning will not be boring (Setiyaningsih et al., 2023). The advantages of the Canva application can be seen as follows: 1). Has an attractive design. 2). Can create creativity for teachers and students 3). Practical in nature. 4). When designing, it doesn't have to be a computer, but can be done using a cellphone (Monoarfa, 2021).

This study aims to analyze the initial needs in developing Canva-based interactive media that is expected to help improve the critical thinking skills of grade VI students in understanding math story problems with spatial geometry material. The selection of grade VI as the subject of the study is based on the importance of this phase in preparing students to face higher levels of education, where critical thinking skills are essential in solving complex problems, Critical thinking is a very important skill in all areas of life because it is one of the determining factors for success in a student's life (Aini et al., 2024). The use of audio-visual media in learning also opens up space for the formation of students' critical and analytical skills. They can be invited to think creatively, develop media literacy, and understand messages conveyed through various visual and sound forms (Taufik & Wardatul jannah, 2024). Videos that can be developed into interesting media are in the form of animation. Various online and offline applications that can be used to create learning animation videos such as Canva, Powtoon, Animaker, Kinemaster, Wideo, GoAnimate, and Biteable. Using appropriate learning media in the teaching and learning process in the classroom can bring success to both teachers and students. Not only that, the role of the teacher is also very important in the learning process, therefore teachers are required to be able to create creative and innovative media and be able to utilize the learning media available at school (MARLIANI, 2021).

The development of learning media is a process of designing and creating tools or materials that support educational goals. The use of media in the learning process can arouse interest and student learning motivation, reducing or avoiding verbalism, generating orderly, systematic reasoning, and to foster understanding and develop values in students (Utami, 2017). Interactive learning media is defined as a tool that not only conveys information but also actively involves students in the learning process. Interactive learning media is learning media that allows interaction between students and media, students and teachers, and students with other students (Nisa Maghfiroh et al., 2024). In the context of teaching and learning, “interactive media” refers to digital or multimedia goods and services that instructors offer to students through the presentation of educational materials such as text, audio, video, video games, and moving images or animations. Utilizing these digital or multimedia products and services is expected to increase students' enthusiasm, inspire them to conduct additional research, and increase their understanding of the subject matter they are studying (Sinta et al.,

2024). In the context of mathematics, The use of interactive learning media in elementary schools can be seen as a progressive step in responding to technological advances, as well as a means to optimize its use to improve the quality of education (Nisa Maghfiroh et al., 2024). With direct interaction between students and materials, the learning process becomes more meaningful and involves critical thinking, especially in solving story problems that require in-depth analysis.

Canva is a web-based platform that provides various options editing to help users create various types of visual content designs such as posters, flyers, infographics, banners, invitation cards, presentations, Instagram feeds, covers, and others (Syahrir[1] et al., 2023). This platform is popular because of its easy-to-use interface and provides a variety of customizable design templates. Using the Canva application for interactive media-based learning can make it easier for teachers to design media and make it easier for teachers to explain learning material (Fitriana et al., 2023). Applying Canva in learning doesn't just create more material visually appealing, but can also accommodate the diverse learning styles of students (Siburian & dkk, 2024). Canva also allows teachers to creating various interactive exercises that can be used in the course of learning. For example, teachers can create Math quizzes, educational game boards, or interactive worksheets that students can access on their devices (Divia et al., 2023). The use of Canva in mathematics learning can help students understand complex concepts through visual representations, such as diagrams, graphs, and infographics, so that in the context of mathematics Canva can help students understand concepts through interactive visualizations, thereby strengthening students' critical thinking skills in solving story problems. By using the Canva application, teachers can more easily and quickly create interesting learning materials. Using the Canva application as interactive media also makes it easier for students to understand lessons, because this application contains text, animation, video, audio, images, graphics, etc., according to the material displayed, making students more focused in paying attention to learning due to its attractive appearance. (Miftahul Jannah et al., 2023).

Mathematics learning in elementary schools is aimed at developing a practical, logical, critical and honest mindset with an orientation towards the application of mathematics in solving problems, because in mathematics there are problems in the form of reading content and stories or in the form of problem discourse that must be solved through student reasoning (Unaenah et al., 2023). Students' critical thinking skills in mathematics learning are very necessary to understand and solve a problem or mathematical problem that requires reasoning, analysis, evaluation and interpretation of thought (Rahmaini & Ogylva Chandra, 2024). Critical thinking is process of actively and skillfully conceiving, applying, analyzing, synthesizing, and/or assessing knowledge obtained from or generated by observation, experience, reflection, reasoning, or communication as a criterion for belief and action (Alsaleh, 2020). This process is very important in dealing with story or non-routine problems that require in-depth understanding and careful analysis. This understanding shows that critical thinking can be interpreted as a process as well as an ability used to understand concepts, apply, synthesize and evaluate information obtained and produced (Zubaidah, 2016).

One major competency that is most prevalent in the 21st century is critical thinking, which may be considered the foundation for the abilities that the educational system today needs to prioritize in order to achieve success (Halim, 2022). The students need to develop from an early

age, because critical thinking skills can increase understanding of concepts and can develop students' thinking abilities to solve problems, especially in learning mathematics. When working on mathematics problems, students cannot be separated from the thinking process, where students try to find ways to solve and find solutions to these mathematical problems (Ningsih et al., 2022). Learning development oriented towards higher order thinking skills or HOTS is a program developed with the aim of improving the quality of learning and improving the quality of graduates. The types of HOTS questions based on the cognitive domain of Bloom's Taxonomy include C4 (Analysis), C5 (Evaluation), and C6 (Creation) (Keislaman et al., n.d.).

METHODS

Type and Design

This study uses Research and Development (R&D) research. Research and development is a research method used to produce certain products, test the effectiveness of products and improve a product and the model used is the ADDIE development model consisting of Analysis, Design, Development, Implementation and Evaluation (Sugihartini & Yudiana, 2018). The ADDIE model is used to develop products such as learning videos, learning modules, textbooks, multimedia and so on. The development of the ADDIE model has several stages, namely the first is to analyze the initial needs to create learning media. Second, the analysis step is followed by the design stage. Researchers are now creating products that will be produced according to learning needs. The learning design that is made is still in the idea stage and will be the basis for the next development stage. In addition, the third stage, known as development, includes tasks that aim to change design specifications into real form (product). The purpose of this stage is to create learning media in its final form after making the necessary adjustments in response to input, recommendations, expert opinions, and trial results or validation tests. In addition, the phase or stage where students apply the learning video media that has been created is called the implementation stage. The last step is evaluation, which is when users of learning video media receive feedback. The product created is suitable for use in learning if there are no further revisions.

Data and Data Sources

The population in the study were grade VI elementary school students where the sample was taken from one school with a sample size of 30 people. The subjects in this study were canva-based animated video media on mathematical story problems on spatial geometry material in grade VI of elementary school. The research instrument was a measuring tool used to obtain data, the first was an interview with a grade VI mathematics teacher and grade VI students and the second was a questionnaire used was an expert validation questionnaire, and student responses to canva-based animated video media.

Data collection technique

The following justifies the data gathering methods used in this study: questionnaires, evaluation questions, observation procedures, and documentation. 1) Observation is the process of seeing and documenting in order to make information about the subject of the study more easily accessible. In research, observation will yield knowledge about the topic of the study. The examination of the requirements for creating interactive learning materials using

the Canva app will include research observations. 2) The validity of using interactive learning media products through the Canva application in the learning process is tested using this questionnaire, which refers to the Likert scale in the form of a checklist. This survey is distributed to media and materials. 3) Examine Pre-test and post-test were conducted during the test question stage. The purpose of the test data was to evaluate the success of product development, ascertain the degree of improvement in the students' learning outcomes, and ascertain the knowledge of spatial buildings mathematics. A multiple-choice question model of 20 HOTS-based questions was utilized for the test, and the items' validity and reliability were examined before they were used in the study. In this study, the KD utilized in the creation of interactive learning media products using the Canva program is referred to as question preparation. 4) To finish the research data, documentation is required. Additionally, documentation is proof that research has been done. This Research documentation are available in the form of photos and videos during the learning process in developing products namely during small group and field trials.

Data analysis

The quantitative and qualitative data analysis methodology will be used in this study by the researcher. Qualitative data examination in the form of comments made by lecturers, namely media experts and material experts. The resulting product, namely Canva-based interactive media for understanding mathematical story problems on spatial geometry material, was improved and assessed for its feasibility using data analysis. In the meantime, quantitative analysis is carried out to evaluate the viability of the researcher's product. The feasibility test might be determined using the results of the evaluation carried out by knowledgeable lecturers. The evaluation design of the professional lecturers will be validated for qualitative analysis purposes by referring to the mean scores on the Likert scale.

RESULTS AND DISCUSSION

Grade VI elementary school students became the subjects in the development of this research, which was conducted in one of the schools. Data for this study were collected using student response instruments and expert instruments. The ADDIE model is the research model used in this study, which uses the R&D (research and development) research type. The five phases of this research approach are strategy, design, development, implementation, and evaluation. In the first stage, called the Analysis stage, the researcher observed students in class to determine the demands and challenges they faced when applying mathematical story problems about spatial geometry material in grade VI mathematics lessons.

The researcher created a design for the learning material that would be created and taught to students, known as the Design stage, by considering the needs of educators and students. At this stage, the researcher first chooses the media, then the appropriate media format, and finally the researcher begins to design the first part, which includes the video title and background design that is in accordance with the learning. The researcher then compiles the contents of the relevant learning material related to the material to be studied by the students.

In the third stage, namely the Development stage, the researcher begins to create the media that is developed. From the cover, learning objectives, learning materials, example questions, practice questions and discussion of questions. After the media development process is

complete, the media is validated by a validation specialist to ensure its viability before moving on to the implementation or application phase of the media.

The fourth step, implementation, is when the researcher uses the expert-approved media to test it on students in small groups. During the application of learning connected to the content, the media is used. Once the media has been implemented, the researcher moves on to the last phase, which is the evaluation phase.

Evaluation stage: During this phase, the researcher will assess the viability and development of the animated video learning materials based on Canva that they have finished. Experts and trial participants conducted this development review. According to the final results, Canva-based animated video content can be used to teach mathematics to sixth-grade elementary school students through mathematical story issues including spatial geometry.

Product Trial Results

In the trial process, before learning, students do a pretest first to find out the extent of their abilities and understanding of the material to be delivered. With an average pretest result of 55.04% while the average posttest result is 93.52%. From the data above, it can be seen that there is a difference between the pretest and posttest results, with an average pretest result of 55.04% in the category of "quite good" and an average posttest result of 93.52% in the category of "very good". So with the presence of Canva-based animated video media, it can improve student learning outcomes from previously only a few who completed it until all students completed their learning. Then it was analyzed again to determine the increase in students' critical thinking abilities after learning resulting in a figure of 0.8 in the "High" category. This explains that Canva-based animated video media can improve students' ability to think critically. The following is table 1 of increasing effectiveness in critical thinking:

Tabel 1. Improving the Effectiveness of Critical Thinking

Keterangan	**Nilai Pretest**	**Nilai Posttest**
Average	55,04 %	93, 52%
N-Gain	0.8	
Criteria	High	

Based on the results of the research that the researcher has conducted and from the data collected, it shows that Interactive media based on the Canva application is suitable for use and effective in improving critical thinking skills. This is based on the results of the pretest and posttest during the product trial which showed changes in the form of increased student learning outcomes before and after using interactive media. This is in line with the results of research by Ciptaningtyas (2022) which states that there is a significant influence on student motivation and learning outcomes between before and after using Canva application-based learning (Ciptaningtyas et al., 2022).

In this process, students were developed who were enthusiastic about learning where previously they had almost never used learning video media as a learning medium, this is in line with the problems that occur in various schools in Indonesia. That there are several problems faced by schools in Indonesia in utilizing IT as a learning medium, including: a) IT-based learning media requires quite a lot of funds for both procurement and maintenance; b) Facilities/infrastructure/facilities such as electricity have not been supported; c) There is still

a lack of teachers and teaching resources who are competent in utilizing IT as a learning medium; and d) Sources of information and references are still very lacking. However, by developing it as a learning medium, in addition to the extraordinary enthusiasm of students, students also become very active in class, students are able to express their ideas or ideas, and this media, without students realizing it, has made them grow their critical thinking skills. Critical thinking ability is an ability that every individual has
resolve a problem by focusing on the process and steps taken carefully that can be accounted for. Critical thinking refers to the activity of analyzing an idea systematically and specifically, distinguishing things carefully and thoroughly, identifying, studying, and developing the thinking process using logic and evidence in a more perfect direction (Hendi et al., 2020).
The findings of feasibility studies by media experts, material experts, and student effectiveness trials demonstrated the viability of interactive media based on Canva on mathematical narrative issues on spatial geometry content in grade VI of elementary school.

Table 2. Results of the Canva Learning Media Validation Recapitulation

Validasi	**Validasi Result**	
	Percentage	**Category**
Media Expert	87%	Very Worth It
Material Expert	93%	Very Worth It
Effectiveness Test	94%	Very Worth It
Category Result	Very Worth It	

The following are the results of the data obtained regarding the feasibility of learning media in the form of interactive media based on Canva on mathematical story problems on spatial geometry material in grade VI of elementary school. The data obtained from the results of the media expert validation carried out by the validator was carried out at the beginning of the validation getting a score of 37 with a maximum score of 50 and a feasibility percentage of 73% so that it can be categorized as "Feasible". Then the validation expert gave suggestions to the researcher to revise several things. After that, the researcher conducted a second validation and obtained a score of 41 with a maximum score of 50 and a feasibility percentage of 87% so that it can be categorized as "Very Feasible".

From the results of the validation of the material expert carried out by the validator, the validation results of the material got a score of 37 with a maximum score of 50 and a feasibility percentage of 71% so that it can be categorized as "Feasible". Then there were suggestions given by the validation expert to revise the material contained in the animated video media that was developed. After the researcher revised the material, the researcher conducted a second validation and obtained a score of 47 with a maximum score of 50 and a feasibility percentage of 93% so that it was categorized as "Very Feasible".

The results of the test data on the effectiveness of the media developed by conducting tests or quizzes that were tested on grade VI elementary school students met the completeness criteria, namely obtaining a score of ≤75. So it can be concluded that the Canva-based animated video media on mathematical story questions on spatial geometry material in grade VI elementary school has an influence on mathematics learning related to the material for the VI elementary school students.

Based on the results of the data obtained, an average percentage of the feasibility of Canva-based animated video media can be obtained of 91.4%. can be categorized as Very Eligible. So it can be concluded that the Canva-based animated video media on mathematical story questions on spatial geometry material in grade VI elementary school can be said to be "Very Eligible" to be applied as a learning medium during the Mathematics learning process related to the material.

The results of this research are the same as the results of research previously conducted by Zahra Kamila (2023), with the title "Development of Canva-Based Interactive Learning Media on Fraction Materials for Elementary School Students". The results and findings of this research, ILC (Interactive Learning Canva) media were declared valid and suitable for use in the teaching and learning process. During the testing process, researchers received assessments regarding interesting and varied designs. The percentage calculation results show that there is a difference in the average results in the control class and the experimental class, where the average value of critical thinking and learning outcomes for the experimental class is higher than the control class. The design appearance and material presentation on ILC media can be used as a learning resource for students in the teaching and learning process. Then there is a need for teachers to be more creative in making or creating learning media so that learning comes alive, there is a lack of teachers in using technology as a learning media where actually ICT is able to create critical, creative and innovative learning. After conducting research, it was concluded that animated videos based on the Canva application can increase motivation and learning achievement and are suitable for use in the learning process (Kamila & Kowiyah, 2022).

However, what distinguishes the research I conducted from the previous studies mentioned above is the use of the application from Canva by the researcher. A learning was created using the Canva feature, and contains story problems involving spatial geometry material that was not in previous studies that also used the Canva application. What makes this animated video unique is that the researcher included many questions and images from the film, along with HOTS material, to help students develop their critical thinking skills. With the help of interactive media called Canva, an object can be made to appear alive in an animated film that combines audio and visual elements to attract students and help them understand the subject matter faster. Canva-based interactive learning media has a positive impact on a teacher, one of which is building students' reasoning so they think creatively and actively. The benefit for students is that it helps their reasoning become real, for example creating works, so that they can achieve predetermined competencies (Rosyada Ayu Fatimah et al., 2023)

CONCLUSION

Based on the results of research and development of Canva-based animated video media, the researcher concluded that the procedure for developing Canva-based animated media in learning mathematical story problems on spatial geometry material uses research and development procedures with a research ADDIE model. The ADDIE model has 5 stages: Analysis, Design, Development, Implementation, and Evaluation. Then, the feasibility of Canva-based animated video media on mathematical story problems on spatial geometry

material has a very decent quality and is good for use in the learning process. According to the researcher's findings and the data gathered, animated video content based on Canva is appropriate for educational purposes and can enhance students' critical thinking abilities when solving mathematical story problems including spatial geometry content. In order to facilitate the delivery of learning by teachers, the research's goal of developing interactive media based on Canva that tells stories about mathematics and spatial geometry for sixth-grade students has been accomplished. It is said that animated video learning materials are highly qualified and appropriate for use in the educational process.

REFERENCES

Acep Ruswan, Primanita Sholihah Rosmana, Annisa Nafira, Hanie Khaerunnisa, Ighna Zahra Habibina, Keysha Kholillah Alqindy, Khomsanuha Amanaturrizqi, W. S. (2024). Pengaruh Penggunaan Media Pembelajaran Berbasis Teknologi dalam Meningkatkan Kemampuan Literasi Digital Siswa Sekolah Dasar. *Program Studi Pendidikan Guru Sekolah Dasar, Universitas Pendidikan Indonesia*, *8*(1), 4007–4016. https://doi.org/10.31004/jptam.v8i1.13009

Aini, A. N., Masfuah, S., & Fakhriyah, F. (2024). Pengembangan Media Jejak Petualangan Sains (JPS) untuk Meningkatkan Kemampuan Berpikir Kritis Siswa Sekolah Dasar. *Jurnal Basicedu*, *8*(1), 719–728. https://doi.org/10.31004/basicedu.v8i1.7204

Alsaleh, N. J. (2020). Teaching Critical Thinking Skills: Literature Review. *Turkish Online Journal of Educational Technology-TOJET*, *19*(1), 21-39.

Angraini, T., Saragi, L. N. S., Jannah, M., & Sopian, M. (2017). Perubahan Paradigma Peran Guru Dalam Pembelajaran Era Digital. *Prosiding Seminar Nasional 20 Program Pascasarjana Universitas PGRI Palembang 25 November 2017*, *November*, 188–192.

Ciptaningtyas, W., Mukmin, B. A., & Putri, K. E. (2022). E-Book Interaktif Berbasis Canva Sebagai Inovasi Sumber Belajar Materi Sistem Pencernaan Manusia Kelas V SD. *Jurnal Pemikiran Dan Pengembangan Sekolah Dasar (JP2SD)*, *10*(2), 160–174. https://doi.org/10.22219/jp2sd.v10i2.21788

Dasar, M. S. (2023). *1 , 2 1,2*. *08*.

Divia, B., Syarifah, L. R., Marcella, I., & Ramadhan, E. F. (2023). *Pemanfaatan Aplikasi Canva Sebagai Media Pembelajaran Pada Mata Pelajaran Matematika Di Kelas 4 Sd Muhammadiyah*. 1980–1989.

Fitriana, A. A., Dewi, N. R., & Waluya, S. B. (2023). Systematic Literature Review: Media Pembelajaran Interaktif Berbasis Aplikasi Canva Berorientasi pada Model Preprospec Berbantuan TIK untuk Meningkatkan Kemampuan Koneksi Matematis. *PRISMA, Prosiding Seminar Nasional Matematika*, *4*, 198–206. https://proceeding.unnes.ac.id/prisma

Habaridota, M. L. B. B. (2023). Pengembangan LKPD Berbasis Kurikulum Merdeka Belajar dan Aplikasi Canva for Education Kelas 4 SD/MI. *Journal on Teacher Education*, *4*(3), 841-851.

Halim, A. (2022). Signifikansi dan İmplementasi Berpikir Kritis Dalam Proyeksi Dunia Pendidikan Abad 21 Pada Tingkat Sekolah Dasar. *Jurnal Indonesia Sosial Teknologi*, *3*(03),

404-418.

Hasan, H. (2015). Kendala Yang Dihadapi Guru Dalam Proses Belajar Mengajar Matematika Di Sd Negeri Gani Kabupaten Aceh Besar. *Jurnal Pesona Dasar*, *1*(4), 40–51.

Hatija, M. (2024). Evolusi Perangkat Pembelajaran Dalam Dunia Pendidikan Modern. *Jurnal Pendidikan*, *3*, 98–115.

Hendi, A., Caswita, C., & Haenilah, E. Y. (2020). Pengembangan Media Pembelajaran Interaktif Berbasis Strategi Metakognitif untuk Meningkatkan Kemampuan Berpikir Kritis siswa. *Jurnal Cendekia : Jurnal Pendidikan Matematika*, *4*(2), 823–834. https://doi.org/10.31004/cendekia.v4i2.310

Kamila, Z., & Kowiyah, K. (2022). Pengembangan MediazPembelajarankInteraktif Berbasis Canva padaiMateriiPecahan untuk Siswa Sekolah Dasar. *Jurnal Cendekia : Jurnal Pendidikan Matematika*, *7*(1), 72–83. https://doi.org/10.31004/cendekia.v7i1.1663

Keislaman, J., Sdn, K., & Kabupaten, S. (n.d.). *S l a m i k a*. *6*, 1808–1820.

MARLIANI, L. P. (2021). Pengembangan Video Pembelajaran Untuk Meningkatkan Motivasi Belajar Siswa Sekolah Dasar. *PAEDAGOGY : Jurnal Ilmu Pendidikan Dan Psikologi*, *1*(2), 125–133. https://doi.org/10.51878/paedagogy.v1i2.802

Miftahul Jannah, F. N., Nuroso, H., Mudzanatun, M., & Isnuryantono, E. (2023). Penggunaan Aplikasi Canva dalam Media Pembelajaran Matematika di Sekolah Dasar. *Jurnal Pendidikan Dasar*, *11*(1). https://doi.org/10.20961/jpd.v11i1.72716

Monoarfa. (2021). Pengembangan Media Pembelajaran Canva dalam Meningkatkan Kompetensi Guru. *Seminar Nasional Hasil Pengabdian*, 1–7.

Ningsih, S. R. A., Turmuzi, M., Wahidaturrahmi, W., & Hayati, L. (2022). Analisis Kemampuan Berpikir Kritis dalam Menyelesaikan Soal Cerita di SMP Negeri 14 Mataram. *Griya Journal of Mathematics Education and Application*, *2*(3), 708–718. https://doi.org/10.29303/griya.v2i3.210

Nisa Maghfiroh, A., Muhammad Ferelian El Hilaly Daksana, & Nikhlatus Salma, S. (2024). Efektivitas Penggunaan Media Pembelajaran Interaktif dalam Pembelajaran Matematika di Sekolah Dasar. *Griya Journal of Mathematics Education and Application*, *4*(1), 55–64. https://doi.org/10.29303/griya.v4i1.429

Permatasari, A. cahyani, Sari, J. A., Winanda, T., Saputra, R. I., Silvi, Annisa, P., & Fitriani, E. (2023). Analisis Kesulitan Belajar Matematika Dalam Menyelesaikan Soal. *Jurnal Pendidikan Dasar Flobamorata*, *4*(1), 421–423. https://doi.org/10.51494/jpdf.v4i1.845

Pristy, N., & Sukartono. (2023). Kontribusi Media Powerpoint Interaktif dan Model Problem Based Learning terhadap Hasil Belajar IPAS SDN 2 Kalanglundo. *Jurnal Elementaria Edukasia*, *6*(4), 2026–2036. https://doi.org/10.31949/jee.v6i4.7790

Rahmaini, N., & Ogylva Chandra, S. (2024). Pentingnya Berpikir Kritis dalam Pembelajaran Matematika. *Griya Journal of Mathematics Education and Application*, *4*(1), 1–8. https://doi.org/10.29303/griya.v4i1.420

Rezeqi, S. (2023). Berpikir Kritis Dalam Pembelajaran Matematika Dengan Pendekatan Konstruktivisme. *Matrix: Jurnal Pendidikan Matematika*, *1*(2), 124–133. https://doi.org/10.62522/mjpm.v1i2.30

Rosyada Ayu Fatimah, Olvy Mailandari, Jany Fitria Khoirunnisa, Wahyu Lestari, & Fuad Dirahman. (2023). Pengaruh Kurikulum Merdeka Dalam Penggunaan Canva Sebagai Media Pembelajaran di MAN 1 Kulon Progo. *Lencana: Jurnal Inovasi Ilmu Pendidikan*, *2*(1),

92–102. https://doi.org/10.55606/lencana.v2i1.3044

Setiyaningsih, S., Yuwana, S., & Hendratno. (2023). Peningkatan Keterampilan Bercerita Siswa Setelah Menggunakan Media Animasi Audio Visual Dongeng Binatang Berbasis Canva. *Jurnal Elementaria Edukasia*, *6*(2), 618–624. https://doi.org/10.31949/jee.v6i2.5452

Siburian, R., & dkk. (2024). Siburian, dkk. Prosiding Seminar Nasional Penggunaan Aplikasi Canva untuk Meningkatkan Kreativitas dan Ketertarikan Siswa dalam Pembelajaran. *Prosiding Seminar Nasional Unit Kegiatan Mahasiswa Penalaran Dan Riset IKIP PGRI Bojonegoro*, 1246–1254. https://prosiding.ikippgribojonegoro.ac.id/index.php/SNGK/article/view/2548

Sinta, D., Pertiwi, K., Wardhani, I. S., & Madura, U. T. (2024). *KARAKTERISTIK MEDIA PEMBELAJARN INTERAKTIF*. *2*(11).

Sugihartini, N., & Yudiana, K. (2018). Addie Sebagai Model Pengembangan Media Instruksional Edukatif (Mie) Mata Kuliah Kurikulum Dan Pengajaran. *Jurnal Pendidikan Teknologi Dan Kejuruan*, *15*(2), 277–286. https://doi.org/10.23887/jptk-undiksha.v15i2.14892

Syahrir[1], A. P., Zahirah[2], S. P., & Salamah[3], U. (2023). Pemanfaatan Aplikasi Desain Grafis Canva dalam Pembelajaran Multimedia di SMA Negeri 1 Taman. *Prosiding Seminar Nasional*, *1*, 732–742.

Taufik, T., & Wardatul jannah, S. (2024). Penggunaan Media Audio Visual dalam Pembelajaran Istima'. *Edu Journal Innovation in Learning and Education*, *2*(1), 31–39. https://doi.org/10.55352/edu.v2i1.934

Titin Nuraeni, T. N., Nurkholis, Fitri Aprianti, & Dedeh. (2023). Implementasi Model Project Based Learning Berbantuan Media Digital Dalam Meningkatkan Hasil Belajar Matematika Kelas V SD. *Jurnal Elementaria Edukasia*, *6*(2), 480–489. https://doi.org/10.31949/jee.v6i2.5554

Tri Wulandari, & Adam Mudinillah. (2022). Efektivitas Penggunaan Aplikasi CANVA sebagai Media Pembelajaran IPA MI/SD. *Jurnal Riset Madrasah Ibtidaiyah (JURMIA)*, *2*(1), 102–118. https://doi.org/10.32665/jurmia.v2i1.245

Unaenah, E., Elyipuspita, M., Salsabila, N., & Safitri, S. (2023). Analisis Kesulitan Siswa Kelas V Sekolah Dasar dalam Menyelesaikan Soal Cerita pada Materi Bangun Ruang. *Masaliq*, *3*(6), 1048–1057. https://doi.org/10.58578/masaliq.v3i6.1578

Utami, R. P. (2017). Pentingnya Pengembangan Media Pembelajaran Dalam Kegiatan Proses Belajar Mengajar. *Jurnal Dharma Pendidikan*, *12*(2), 62–81.

Wiwin, T. T., & Mogi, Y. (2023). Analisis Kemampuan Pemecahan Masalah Matematika Siswa Dalam Menyelesaikan Soal Rata-Rata Hitung. *Prosiding Diskusi Panel Nasional Matematika*, *10*(1), 231–234. http://repository.widyamataram.ac.id/uploads/pdfs/reforming.pdf

Zubaidah, S. (2016). Berfikir Kritis : Kemampuan Berpikir Tingkat Tinggi Yang dapat Dikembangkan Melalui Pembelajaran Sains. *In Seminar Nasional Sains*, *6*(8), 1–14.