Needs Analysis of Canva-Assisted Flashcards for Improving Creative Thinking in Multiplication Learning

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Abstract
Creative thinking skills are needed to learn multiplication material. The purpose of this study was to determine students' needs for Canva-assisted flashcard learning media on multiplication material. This type of research is qualitative. The research subjects were elementary school students and teachers in Ngadirojo sub-district. Data collection is done with a questionnaire that has been tested for validity and reliability. Data analysis used the percentage formula. The results showed that: the indicator of the need for Smartphone facilities is 100% stated that students have Smartphones, 96.78% of students interact with Smartphones more than 5 hours per day; the indicator of mathematics learning is 87.65% of students have difficulty with multiplication operations, 75.80% of teachers use android-based learning media, 95.72% of teachers have never used technology-based mathematics learning media, 91.50% of teachers use the method of memorizing formulas and practicing math problems; and the indicator of supporting facilities is 100% of schools have Wifi supporting facilities, the indicator of student learning styles is: 86.75% want to feel touch and hold, 90.75% remember more easily by seeing and doing, and 100% of students agree that there is android-based learning media for math lessons. Conclusion: it is necessary to develop Canva-assisted flashcard learning media on multiplication material to improve creative thinking skills.
Keywords: Learning media, flashcards, Canva, creative thinking

Abstrak
Keterampilan berpikir kreatif sangat dibutuhkan untuk mempelajari materi perkalian. Tujuan penelitian ini adalah untuk mengetahui kebutuhan siswa terhadap media pembelajaran flashcard berbantuan Canva pada materi perkalian. Jenis penelitian ini adalah kualitatif. Subjek penelitian adalah siswa dan guru sekolah dasar di Kecamatan Ngadirojo. Pengumpulan data dilakukan dengan angket yang telah di uji validitas dan uji reliabilitas. Analisis data menggunakan rumus prosentase. Hasil penelitian menunjukkan bahwa: indikator kebutuhan fasilitas Smartphone adalah 100% menyatakan siswa memiliki Smartphone, 96,78% siswa berinteraksi dengan Smartphone lebih dari 5 jam per hari; indikator pembelajaran matematika adalah 87,65% siswa mengalami kesulitan dengan operasi perkalian, 75,80% guru menggunakan media pembelajaran berbasis android, 95,72% guru belum pernah menggunakan media pembelajaran matematika berbasis teknologi, 91,50% guru menggunakan metode menghafal rumus dan berlatih soal matematika; dan indikator pendukung fasilitas adalah 100% sekolah memiliki fasilitas pendukung Wifi, indikator gaya belajar siswa adalah: 86,75% ingin merasakan sentuhan dan memegang, 90,75% lebih mudah mengingat dengan melihat dan melakukan, dan 100% siswa setuju bahwa ada media pembelajaran berbasis android untuk pelajaran matematika. Kesimpulan: perlu dikembangkan media pembelajaran flashcard berbantuan Canva pada materi perkalian untuk meningkatkan keterampilan berpikir kreatif.
Kata Kunci: Media pembelajaran, flashcard, Canva, berpikir kreatif

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INTRODUCTION

Education is the main key in the progress and development of the nation. Education can develop potential and quality human resources (Mardhiyah et al., 2021). The quality of human resources is determined by the quality of learning. Good learning must be able to improve a person's abilities, one of which is the ability to think creatively. Purwaningsih & Supriyono (2020) said that creative thinking is the ability of students to understand problems and find solutions with varied (*divergent*) strategies or methods. According to Agustiana et al. (2020) creative thinking is a series of actions a person takes to create new thoughts from a collection of ideas, information, concepts, experiences, and knowledge possessed. Creative thinking requires a child to have the ability to solve problems, have diverse answers, have the ability to master a problem concept, convey ideas or ideas on a problem topic (Fairazatunnisa et al., 2021). According to Fadlilah & Siswono (2022), there are 5 levels of creative thinking ability, namely: Level 4 (Very Creative)**,** Level 3 (Creative)**,** Level 2 (Moderately Creative)**,** Level 1 (Less Creative), and Level 0 (Not Creative).

Currently, students' creative thinking skills still tend to be low. Widiastuti & Indriana (2019) stated that the cause of students' low creative thinking ability is because the learning material delivered by the teacher is not interesting, never uses learning media, and does not relate lessons to everyday life. One of the efforts to improve creative thinking skills is to use good and effective learning media. Learning media is everything both physical and technical in the learning process that can help teachers to make it easier to convey subject matter to students so that it can facilitate the achievement of learning objectives that have been formulated (Firmadani, 2020). Zahwa & Syafi'i (2022) learning media is a tool or means in channeling and delivering material that can stimulate the audience's mind so that the teaching and learning process can run effectively and learning objectives can be achieved perfectly. Indriani, et al (2021) state that the function of learning media is to provide opportunities for teachers to diagnose and correct problems that exist in learning activities, increase student creativity and provide meaningful learning experiences, not just the delivery of information. One of the learning media that can be used to develop thinking creativity is *flashcards*.

Pradana (2020) states that *flashcards* are small cards that contain images, text, or symbols that can remind and lead students to something related to the image. Febriyanto (2019) states that *flashcard* media is a simple medium in the form of cards that can be used by teachers to convey the content of the material in a simple way but help students easily recognize the images and writing. Flashcard *media* has several advantages as revealed by Arisandy & Wahyuni (2024), including being easy to carry everywhere, practical, easy to remember, and fun. While the shortcomings of *flashcard* media according to Maeswaty, et al (2023) are that images only emphasize eye sense perception, images of objects that are too complex are less effective for learning activities, and the size is very limited for large groups. With technological advances, *flashcards* can be developed to be more interactive and interesting through integration with digital media (Hermansyah, et al, 2023). One of the platforms that can be used to develop interactive learning media is *Canva*.

Canva is a free *online* design program that provides a variety of tools such as presentations, CD cover posters, book covers, posters, brochures, flyers, graphics, infographics, banners, certificates, diplomas, invitation cards, business cards, greeting cards, thank you cards, postcards, logos, book labels, bookmarks, and many more (Parinduri, 2023). The benefit obtained by using *Canva* is that it can increase student creativity. *Canva* allows teachers to design *flashcards* that are more visually appealing and easily accessible to students through digital devices. The use of *flashcards* with the help of *Canva* can be combined with several games such as dominoes so that learning becomes more interesting. This concept can be applied in learning mathematics, especially in multiplication material. Alisnaini et al., (2023) state that multiplication is

addition done repeatedly with the same terms. This means that the principle of multiplication will be the same as addition done repeatedly. Multiplication is a derivative of addition, but to determine the result of the multiplication, the addition is done repeatedly according to the existing numbers (Febriyanto et al., 2018). In other words, multiplication is multiplying one number by the number it multiplies so that the result of the multiplication will be known. Based on the definitions that have been presented, it can be concluded that multiplication is a basic arithmetic process that involves repeated addition of the same number so as to produce a larger value by multiplying one number by another. In the context of education, multiplication material in the lower grades is a continuation of the concept of addition which is basically another form of repeated addition.

Flashcard media development using *Canva* can be an effective and interesting learning media for elementary school students. The development of this learning media is expected not only to facilitate students in understanding the concept of multiplication, but also to improve students' creative thinking skills.

Although there are a number of studies that examine the effectiveness of flashcard media and the use of Canva in learning. Canva offers the potential to create flashcards tailored to students' individual needs and interests. However, there is not enough research that examines the extent to which personalized flashcards created with Canva can contribute to improving students' creative thinking skills in multiplication materials. Therefore, it is necessary to conduct further research to test the effectiveness of this approach.

Based on the description above, this research can formulate the problem formulation, namely: how is the need for the development of *Canva-assisted flashcard* learning media on multiplication material to improve creative thinking skills? The purpose of this study was to determine the students' needs for Canva-assisted flashcard learning media on multiplication material.

METHODS

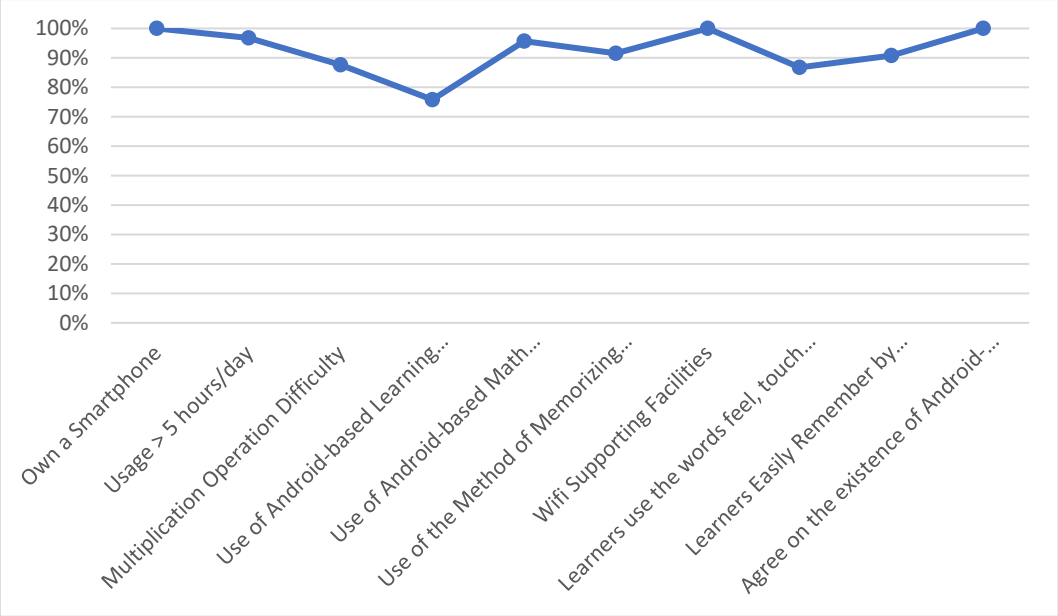
This research is qualitative research. According to Moleong (2018), qualitative research is “research that intends to understand phenomena about what is experienced by research subjects such as behavior, perceptions, motivations, actions, etc., holistically, and by means of descriptions in the form of words and language, in a special natural context and by utilizing various natural methods”. This study used subjects in the form of elementary school students and teachers in Ngadirojo District. The data collection technique used a questionnaire, with indicators in the form of Smartphone facility needs indicators, math learning indicators, supporting facility indicators, student learning style indicators. The questionnaire has been tested for validity and reliability. The validity test shows how accurately a questionnaire measures what should be measured (Yusuf, 2018), while the reliability test shows how consistent the measurement results of an instrument are (Rosita et al., 2021). Data analysis using the percentage formula. The percentage formula is a very simple but effective statistical tool for converting raw data (the number of respondents who choose an answer) into a more understandable form, namely a percentage (Rahmadhani et al., 2024). This percentage shows the proportion or share of all respondents who chose that answer. In other words, the percentage provides a clearer picture of the distribution of answers from all respondents, which is formulated as follows:

$$Prosentase = \frac{Many\ Subject\ Answers}{Many\ Subject}\ x\ 100\%$$

RESULTS AND DISCUSSION

Research Results

Based on the questionnaire that has been distributed by researchers, the indicators of the need for Smartphone facilities, indicators of mathematics learning, indicators of supporting facilities, indicators of students' learning styles, the following results are obtained:



Questionnaire results with indicators of Smartphone facility needs

Tabel 1. Questionnaire results with indicators of Smartphone facility needs

Indicator	Question	Percentage
The need for Smartphone facilities	Own a Smartphone	100%
	Usage > 5 hours/day	96,78%
Math learning	Multiplication Operation Difficulty	87,65%
	Use of Android-based Learning Media	75,80%
	Use of Android-based Math Learning Media	95,72%
	Use of the Method of Memorizing Formulas and Practicing Math Problems	91,50%
Supporting facilities	Wifi Supporting Facilities	100%
Student learning style	Learners use the words feel, touch and hold	86,75%
	Learners Easily Remember by Seeing and Doing	90,75%
	Agree on the existence of Android-based learning media for learning mathematics	100%

Based on the questionnaire above, it is necessary to use flashcar media with the help of Canva.

Discussion

Based on the description above, it is evident that there is a need for the development of Canva-assisted *flashcard* learning media on multiplication material to improve creative thinking skills. This is because, of the 4 indicators used, namely 1) indicators of Smartphone ownership used as learning support media for students, aiming

to see whether students already have supporting media in applying Android-based learning media in the subject; 2) Indicators of mathematics learning, aiming to measure the effectiveness of the media in the desired learning; 3) Indicators of supporting facilities, aiming to support or hinder learning using the media; and 4) Indicators of students' learning styles, aiming to find out the learning styles of students, in order to adjust the design and use of media according to the characteristics of students; provide data that is significant enough to be developed.

Based on the results of the questionnaire above, for the indicator of the need for Smartphone facilities, it is found that 100% of students have smartphones, 96.78% of students interact with smartphones more than 5 hours per day. This can be interpreted that all students have a Smartphone and the majority use it more than 5 hours a day. This potential is very large to be utilized in learning. By using *flashcard* learning media created using Canva and using the help of a Smartphone, it is hoped that it can increase student learning motivation and provide a more interactive and fun learning experience. In math learning indicators, 87.65% of students have difficulty with multiplication operations, 75.80% of teachers use android-based learning media; 95.72% of teachers have not used technology-based math learning media, 91.50% of teachers use the method of memorizing formulas and practicing math problems. This indicates that there is a gap between student needs, existing learning practices, and technology utilization. As many as 87.65% of students have difficulty with multiplication, while the majority of teachers (91.50%) still use conventional methods. Although there have been efforts to utilize technology (75.80% of teachers use Android-based media), its use in mathematics learning is still limited. The use of Canva-based *flashcard* media can be a comprehensive solution. With Canva, teachers can create interesting visualizations for the concept of multiplication, adjust to the diverse learning styles of students, and at the same time take advantage of the devices that students already have (Smartphones). In line with the next indicator, namely the supporting facilities indicator which states that there are supporting facilities such as wifi to support the teaching and learning process using Smartphone-based learning media. Meanwhile, the indicator of students' learning styles, it is known that 86.75% want to feel touch and hold, 90.75% remember more easily by seeing and doing, and 100% of students agree that there is android-based learning media for math lessons. This can be interpreted that students have diverse learning style preferences. As many as 86.75% of students like learning that involves touch and movement, while 90.75% of students remember more easily by seeing and doing. The use of Canva-based flashcards can provide variations in learning methods. With Canva, teachers can create various types of *flashcards*, ranging from flashcards containing simple images to flashcards equipped with animations or short videos. This variety can help students understand math concepts better. In addition, it is supported by the opinion that 100% of students agree to use android-based learning media for math learning.

The use of Canva-assisted *flashcard* learning media has several advantages according to (Aurora and Simanuhuruk, 2024), namely: 1) Flexibility and creativity, canva allows teachers and students to create interesting and varied *flashcard* designs, 2) Visualization of concepts, *flashcards* can be used to visually represent the concept of multiplication, such as by using pictures of groups of objects, 3) Engaging activities, teachers can design various interesting activities using flashcards, such as pair-matching games, number sequences, or puzzles. These activities are not only fun, but also stimulate students to think critically and creatively in solving problems. 4) Student-Centered Learning, by making their own flashcards, students become more actively involved in the learning process. They can choose the images, colors, and words they like, thus increasing their motivation to learn, as well as improving their creative thinking skills.

In addition, according to Shafa *et al*., (2022) with flexibility, attractive visualizations, and varied activities, flashcards can help students to: 1) Understand the concept of multiplication more deeply, 2) Build connections between math concepts, 3) Improve problem solving skills, and 4) Develop creativity and innovation. In addition, the use of Canva also allows teachers to customize learning media to the needs and interests of individual students.

Therefore, electronic media such as Canva has revolutionized the way students learn math. With great flexibility, students can create engaging and interactive visualizations for multiplication concepts. The collaboration feature allows them to work together and inspire each other. Compared to conventional methods, Canva offers more possibilities to explore creative ideas, thus stimulating imagination and enhancing divergent thinking skills. As a result, learning multiplication becomes more fun and effective. This is in line with the opinion of Purba (2022) who explains that modern tools such as graphic design software, presentation makers, and online learning platforms provide unlimited flexibility for individuals to explore creative ideas. With these tools, students can easily manipulate images, text and other design elements to create unique and personalized work. This encourages students to think out-of-the-box and find innovative solutions.

CONCLUSION

Based on the discussion above, it can be concluded that the application of Canva-assisted *flashcard* learning media is needed in multiplication material to improve creative thinking skills. This is evidenced by the value of the indicator of the need for Smartphone facilities is 100% stated that students have Smartphones, 96.78% of students interact with Smartphones more than 5 hours per day; indicators of mathematics learning are 87.65% of students have difficulty with multiplication operations, 75.80% of teachers use android-based learning media; 95.72% of teachers have not used technology-based mathematics learning media, 91.50% of teachers use the method of memorizing formulas and practicing math problems; and indicators of supporting facilities are 100% of schools have Wifi supporting facilities; indicators of students' learning styles are: 86.75% want to feel touch and hold, 90.75% remember more easily by seeing and doing, and 100% of students agree that there is an android-based learning media for math lessons. Suggestions for teachers or school education policy makers for revising the mathematics curriculum to accommodate the use of Canva-based learning media in the multiplication learning process and developing learning modules integrated with the use of Canva, so that teachers have clear guidelines in its implementation. In addition, it is necessary to socialize to teachers about the benefits and how to use Canva in mathematics learning.

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