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Analysis of Learning Difficulties in Simple Fractions through Elementary School Class VI Fractional Card Media

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Abstrak:
This study aims to analyze the difficulties in learning mathematics in simple fraction materials experienced by grade VI students at Nida Suksasat School Elementary School, Satun, Thailand, and to explore the effectiveness of using fractional card media in overcoming these difficulties. This study uses a case study approach with 30 grade VI students who have difficulty understanding the concept of simple fractions. Data were collected through observation, interviews, and tests before and after using fractional card media. The results show that students' main difficulties are understanding the concept of dividing equal parts in fractions and performing mathematical operations such as addition and subtraction of fractions. Using fractional card media has proven to be effective in helping students visualize the concept of fractions and improve their understanding. This media also helps students understand the relationship between parts and the whole, making solving fractional problems easier. This study suggests that fractional card media is used regularly in mathematics learning to reduce learning difficulties in simple fractional material in grade VI of Elementary School. Most students have difficulty understanding simple fraction material, especially in recognizing the concept of fractions, performing basic operations such as addition and subtraction of fractions, and simplifying fractions. Students also have difficulty understanding the relationship between fractions, decimals, and percents.

Keywords: Fractional Card Media, Mathematics, Learning Difficulties, Simple Fractions.

Introduction

Mathematics education plays a very important role in the formation of the foundation of logical and analytical thinking skills in students (Ashcraft, 2022). One of the materials that is often a challenge for students is simple fraction material, which is included in the basic mathematics curriculum (Rizki Inayah Putri, 2023). This material requires a deep understanding of the basic concepts of fractions, such as division, addition, subtraction, and simplification of fractions (Hendri Yahya Sahputra, 2024). Many students, especially in elementary school, have difficulty understanding the concept of fractions, which results in low motivation and their academic achievement in mathematics (Hendra & Wahyuni, 2023).

Nida Suksasat School Elementary School in Satun, Thailand, is one of the schools that experiences a similar situation, where most of the students in grade VI have difficulty understanding and applying the concept of simple fractions. This difficulty is evident in the results of tests and learning observations which show that students are often confused in identifying fraction values, adding or subtracting fractions, and simplifying fractions.

To overcome this problem, one of the approaches that can be used is to use learning media that can help students understand abstract concepts in a more concrete and fun way (Umi Kalsum P. S., 2023). One of the media that is considered effective is the media of fractional cards, which can clarify the relationship between fractions and images or visual representations (Mazlinda Utari Marpaung, 2025). Through this media, it is hoped that students can more easily understand the concept of simple fractions and increase their involvement in mathematics learning.

Mathematics education, especially in simple fraction materials, is often a challenge for most students (Intan Bayzura Sirait, 2025). Fractional material, which includes concepts such as number division, addition, subtraction, as well as simplification of fractions, can confuse students because of its abstraction. Nida Suksasat School Elementary School has a number of grade VI students who have difficulty mastering this material, even though they have been taught with various conventional methods. Therefore, there is a need for in-depth research to analyze the learning difficulties experienced by students and find more effective ways to overcome these problems.

One of the solutions proposed in this study is the use of fractional card media as a learning aid (Dahlia & Iskandar, 2024). Fractional card media is a learning tool in the form of cards that contain fragments that can be arranged and matched according to the order or value of the fractions (Jonassen, 2021). With this visual approach, it is hoped that students can more easily understand the relationship between numbers and fractional representations more realistically.

This study aims to analyze the difficulties of learning mathematics in simple fraction material in grade VI of Nida Suksasat School Elementary School and to evaluate the extent to which the use of fractional card media can help students in overcoming their learning difficulties. By knowing the difficulties experienced by students, as well as the effectiveness of fractional card media, it is hoped that this research can contribute to the development of more innovative and effective mathematics learning methods, especially in simple fraction learning. Based on this background, this study will focus on the identification of learning difficulties faced by students, as well as how the media of fractional cards can help overcome these problems and improve students' mathematics learning outcomes at Nida Suksasat School Elementary School.

Literature Studies

Analysis of the difficulty of learning mathematics on simple fraction material often includes the challenges experienced by students in understanding the basic concepts of fractions. Simple fractions are one of the mathematical concepts that can be confusing for students, especially since they have to understand the relationship between the numerator and the denominator and the concept of the part of the whole (Topan Iskandar, 2023). Many students have difficulty understanding fractions as part of a whole. For example, understand that 1/2 means one part of two equal parts or 3/4 means three parts of four equal parts. Students are often confused when asked to compare two fractions, especially if the denominators are different (Sullivan & Clarke, 2024).

They may not fully understand how to equalize denominators or how to compare fractions using simpler measures (Iskandar, 2021). Adding, subtracting, multiplying, and dividing fractions are skills that require a deeper understanding. Students often struggle with the concept of equalizing denominators or completing operations involving fractions. Students often make mistakes in writing or reading fractions, such as writing 1/2 as 2/1 or vice versa, which can lead to confusion in calculating or operating fractions (Wright & Guisbond, 2021).

One way to help students understand the concept of fractions is to use the medium of fractional cards. This media can be used to make learning more interactive and concrete (Putri Syahri, 2024). Here are some of the benefits of using fractional card media. Fractional cards can help students to see fractions in visual form.

Each card can show a fraction in the form of a picture, such as a circle or a square divided into parts, so students can easily see the relationship between the numerator and the denominator. Using different fractional cards, students can quickly compare fractions that have different sizes (Purnama, Wahyu, & Setyawan, 2024). This can be done by displaying several cards at the same time, making it easier for students to understand the concept of the size or smallness of a fraction. Through games or exercises with fractional cards, students can practice basic operating skills such as adding or subtracting fractions.

Fractional cards can also be used for games such as "matching fractions with pictures" or "sorting fractions from smallest to largest," which can make learning more fun. Fractional cards allow for group activities where students can work together to solve problems. These collaborative activities can increase understanding as students teach each other and share strategies for solving fractional problems (Deci, 2020). In the analysis of the difficulty of learning mathematics on simple fractional materials, the use of fractional card media can be an effective solution to overcome the obstacles experienced by students. With a more interactive and visual approach, students are expected to understand and master the concept of fractions better.

Although there are many studies that explore the learning difficulties of mathematics in simple fractional materials, especially at the elementary education level, there are still few studies that specifically identify the learning difficulties experienced by students in grade VI of elementary school in the context of the use of certain learning media. One of the previous studies is (Agustina & Reni, 2024) focuses more on conventional approaches or the use of more general tools, such as images or graphics, without in-depth examining the effectiveness of more specific media, such as fractional cards.

In addition, research (Ahmad & Rida, 2023) who examine the use of teaching aids or learning media in mathematics, there have not been many who have examined the influence of the use of fractional card media in overcoming students' difficulty understanding simple fractional materials. Fractional card media has the potential to help students in visualizing the concept of fractions in a more concrete and easy-to-understand way, but research on the effectiveness of this media at the elementary school level, especially in grade VI, is still limited.

Then research by (Ardiansyah & Wulandari, 2021) lack of understanding the characteristics of difficulties in learning mathematics in simple fractional materials faced by students with different cultural and educational backgrounds, such as those in schools in Thailand. Cultural differences and education systems in different countries can affect the way students understand mathematical concepts, so more contextual research is needed to explore the learning difficulties specific to students in those environments. Thus, this study aims to fill the gap by analyzing the difficulty of learning mathematics in simple fraction material and exploring the effectiveness of fractional card media in grade VI of Nida Suksasat School Elementary School, Satun, Thailand, as a solution that can help students overcome obstacles in understanding the concept of fractions.

Research Methods

This study uses a qualitative approach with a case study design, which aims to analyze in depth the difficulties of learning mathematics in simple fraction materials in grade VI of Nida Suksasat School Elementary School, Satun, Thailand. This approach was chosen because of the focus of research related to students' experiences and perceptions of learning materials and the use of certain learning media. The steps of this research are as follows (Creswell, 2020).

The research subjects consisted of 30 grade VI students at Nida Suksasat School Elementary School who had difficulties in understanding simple fraction material. The selection of subjects is carried out purposively, namely selecting students who, based on initial observations, show

learning difficulties in understanding the concept of fractions (Umi Kalsum Z. Z., 2024). In addition, the subject of the study also involved a mathematics teacher who taught in the class as an informant. This research was carried out at Nida Suksasat School Elementary School, located in Satun, Thailand, which has the characteristics of students with diverse educational backgrounds, so as to provide variations in mathematics learning difficulties.

Some of the data collection techniques used in this study are (Sugiyono, 2022). The researcher made direct observations during the learning to see the difficulties faced by students in understanding simple fractional material. This observation was made both before and after the application of fractional card media. Interviews were conducted with math teachers and some of the students involved in the research. This interview aims to obtain deeper data about their perception of fractional materials and the use of fractional card media in learning. Researchers also collect data from documents or records related to the learning process, such as learning implementation plans and the results of evaluations that have been carried out by teachers.

Fractional card media is used as a tool in learning simple fractional material. These fragment cards contain images that describe the fraction in visual form, such as the image of a divided circle or a bar that is cut according to the value of the fragment. Through this media, students can practice composing fractions, recognize comparable fractions, and perform addition and subtraction operations of fractions in a more interactive and interesting way. The use of fractional card media is applied in several learning sessions. Each session begins with an explanation of the concept of fractions, followed by exercises using fractional cards. Students are given the opportunity to work individually or in groups in solving problems given with the help of the media.

Data obtained from observations, interviews, tests, and documentation were analyzed in a qualitative descriptive manner. The steps of data analysis include (Creswell, 2020). The data obtained from observations and interviews were categorized based on key themes, such as the type of learning difficulties faced by students, students' responses to the use of fractional card media, and changes that occurred after the use of media. Data that are irrelevant or do not provide significant information will be filtered and summarized to obtain information that is more focused on the research objectives. The results of the data analysis were then interpreted to identify patterns or findings that emerged related to students' learning difficulties and the influence of fractional card media in overcoming these problems.

To ensure the validity of the data, this study uses source triangulation by combining various data sources, such as observations, interviews with teachers and students, and tests conducted before and after the use of media (Sugiyono, 2022). In addition, the researcher also validated members by asking for feedback from teachers and students about the findings obtained in this study. The researcher ensures that all research procedures are carried out by paying attention to research ethics, including by asking for permission from the school and teachers, as well as maintaining the confidentiality of the identity of the students involved in the research. All research activities are also carried out with the consent of the parents of the students involved. By using this research method, it is hoped that a clear picture of the difficulties in learning mathematics in simple fraction material in grade VI of Nida Suksasat School Elementary School can be obtained, as well as the effectiveness of using fractional card media as a solution to overcome these difficulties.

Result

This study aims to analyze the difficulties of learning mathematics in simple fraction material in grade VI of Nida Suksasat School Elementary School, Satun, Thailand, as well as to evaluate the effectiveness of using fractional card media in helping students overcome these difficulties. Based on the analysis of data obtained through observation, interviews, tests, and documentation, the following are the results of the research found. Based on the results of initial observations and interviews with teachers and students, it was found that some difficulties experienced by grade VI students in understanding simple fraction material. These difficulties include. Many students have difficulty recognizing the correct fractions, especially in distinguishing between larger and smaller fractions (e.g., 1/2 and 3/4). Some students have difficulty understanding the relationship between fractions and decimal numbers or percentiles. Students have difficulty performing mathematical operations with fractions, such as addition and subtraction of fractions with different denominators. Students are often confused about the steps to take to equalize denominators or simplify fractions. Most students do not understand how to simplify fractions into simpler forms. They also have difficulty in determining equivalent fractions or how to convert unusual fractions into simpler fractions. Some students think of fractions as separate numbers without seeing the broader relationship to the concept of division and part of a whole, so they have difficulty applying this concept in their daily lives.

After the application of fractional card media in the learning process, there was a significant change in students' understanding of simple fractional materials. The following are the main findings obtained after the application of fractional card media. Fractional card media that contains visual images of fractions helps students to more easily understand the relationship between fractions and image representations. Students can see firsthand how fractions are broken down into smaller or larger parts, which helps them to better understand the concepts of division and measurement in fractions. The use of fractional card media increases student engagement in learning. They are more active in participating in group discussions and are more confident in answering fractional questions. Fractional card media allows students to learn collaboratively, thus creating a more fun and interactive learning atmosphere. With the medium of fractional cards, students can more easily perform mathematical operations, such as addition and subtraction of fractions. They can manipulate fractional cards to equalize denominators or transform fractions into simpler shapes, which they previously had difficulty doing without tools. Based on the test results given before and after the use of fractional card media, there was a significant increase in students' understanding of simple fractional materials. Average test scores of students have increased, with most students who previously could not answer questions correctly, now able to complete questions well. This increase was especially seen in problems related to addition, subtraction, and simplification of fractions. Fractional card media allows students to easily view and manipulate different fractions, helping them to better understand the concept of fraction simplification. Students can more easily identify equivalent fractions and perform fractional conversions correctly.

Most students showed a positive response to the use of fractional card media. Some of the responses from students are as follows. Students feel more interested and do not feel bored during learning. They felt that using fractional card media was more fun compared to traditional learning methods that relied on verbal explanations from teachers. Students feel more confident in answering math problems, because they feel they understand the concept of fractions better in a more visual and practical way. Students revealed that the media of fractional cards helps them to focus more on learning, because they can interact directly with the learning material through card manipulation.

Teachers who teach in grade VI also gave a positive response to the use of fractional card media. The teacher reported that this media. Helping students to understand fractional material more quickly, especially in terms of visualization and manipulation of fractions. Increase students' motivation to learn mathematics, because students find learning more interesting and fun. It makes it easier for teachers to explain concepts

that are difficult to understand verbally, because the medium of fractional cards allows students to see concrete examples.

Although the use of fractional card media provides many benefits, there are several challenges faced during the implementation of this media, including: The learning process involving the use of fractional card media takes longer than conventional learning methods, so it sometimes interferes with the allocation of learning time for other materials. Fractional card media must be well prepared, and not all students have the opportunity to use this media to the fullest if the number of cards is limited.

Based on the results of the research, it is suggested that the use of fractional card media be applied more widely in mathematics learning, especially for materials that require visual understanding. Teachers are also advised to adapt the use of media to the needs and conditions of the classroom, and ensure that each student has enough opportunities to interact with the media. Overall, this study shows that the media of fractional cards can help students overcome difficulties in learning mathematics on simple fractional materials. With a visual and interactive approach, this medium improves students' understanding of fractional concepts, as well as increases their engagement and motivation in learning mathematics.

Discussion

In this discussion, the author will refer to several journals related to the difficulties of learning mathematics, especially in simple fractional materials, as well as the effectiveness of using learning media such as fractional card media to overcome these difficulties. This discussion will relate the findings of the research conducted at Nida Suksasat School Elementary School, Satun, Thailand, with the results in several related journals.

Based on research conducted at Nida Suksasat School Elementary School, it was found that most grade VI students had difficulty understanding the concept of simple fractions. This is in line with the findings contained in several mathematics education journals. According to (Harris, 2023), One of the main difficulties in learning fractions is the difficulty of students in understanding the basic concepts of fractions as part of a whole. Students tend to see fractions as separate numbers without understanding the relationship between parts and wholes. Research (Ashcraft, 2022) It also revealed that the difficulties faced by students in fractional material are often related to understanding basic operations such as addition, subtraction, and simplification of fractions. This also happened at Nida Suksasat Elementary School, where students felt confused in equalizing denominators or simplifying fractions.

Moreover (Wright & Guisbond, 2021) In his journal, he stated that another difficulty that often arises in fractional materials is the lack of visual understanding related to fractional representations. This causes students to find it difficult to solve problems that require abstract understanding, such as the introduction of equivalent fractions or changing the form of fractions. These findings are also reflected in research at Nida Suksasat Elementary School, where many students have not been able to visually recognize fractions or associate them with concrete shapes. The use of learning media as a tool to overcome difficulties in learning mathematics has been widely discussed in the literature. Based on the results of research at Nida Suksasat Elementary School, the application of fractional card media has a significant impact on students' understanding of simple fractional material. (Deci, 2020) In the journal they emphasize that media that allows students to interact directly with learning materials can help them build a better understanding, especially on abstract concepts such as fractions.

One of the key findings of the study (Sullivan & Clarke, 2024) is that the use of visual media, such as fractional cards, improves students' comprehension because it allows them to visualize fractions in the form of concrete images. This is in accordance with the findings at SD Nida Suksasat, where students find it easier to understand the concept of fractions when they can see visual representations of the fractions, such as the image of a circle divided into parts. Research by (Hendra & Wahyuni, 2023) It also shows that the

media of fractional cards can help students more easily understand the relationship between numbers and pictures. Card media gives students the opportunity to practice hands-on by manipulating fractional cards, which increases their engagement in learning and makes it easier for them to complete fractional operations. This is evident in the increase in student test scores at Nida Suksasat Elementary School after the implementation of fractional card media.

Further (Purnama, Wahyu, & Setyawan, 2024) In their journal, they stated that the use of learning media such as fractional cards can facilitate more interactive and collaborative learning. This allows students to discuss in groups, strengthen their understanding, and increase their motivation to learn. This is also reflected in research at Nida Suksasat Elementary School, where students are more active in participating in learning when using fractional card media. Fractional card media not only helps overcome learning difficulties, but can also improve student learning outcomes. According to (Jonassen, 2021), The use of media that supports visualization and physical manipulation, such as fractional cards, can accelerate the understanding of difficult concepts. (Purnama, Wahyu, & Setyawan, 2024) It also shows that learning involving visual and practical media can reduce conceptual errors that often occur in students, such as confusion in simplifying fractions or in completing fraction operations.

In research at Nida Suksasat Elementary School, fractional card media has been proven to help students understand how to simplify fractions and perform addition and subtraction operations more easily. This is in line with the findings in the study (Harris, 2023) which states that manipulative media, such as fractional cards, are very effective in clarifying concepts that are difficult to understand, especially in fractional materials. Students who previously had difficulty recognizing fractions or performing basic operations with fractions became more confident and easier to solve problems related to fractions after using the media of fractional cards. One of the important aspects of learning is student motivation. According to (Bakar & Hamzah, 2022), Students who feel involved in the learning process tend to show improved understanding and learning outcomes. The use of fun and interactive media, such as fractional card media, can increase student motivation and reduce their boredom with learning materials that are considered difficult.

The results of the study at Nida Suksasat Elementary School showed that students felt more interested and motivated when using the media of fractional cards. They feel that learning mathematics becomes more fun and less boring. (Ashcraft, 2022) In the journal they confirmed that interactive media, which allows students to interact directly with the material, can increase student engagement and motivation in math learning. Although the use of fractional card media provides many benefits, challenges also arise in its application. (Wright & Guisbond, 2021) revealed that effective learning media must be adapted to the context of the class and the number of students. This reflects the challenges faced at Nida Suksasat Elementary School, where time and resource constraints such as a limited number of cards can affect the effectiveness of learning.

Moreover (Sullivan & Clarke, 2024) states that while media can be helpful in understanding abstract concepts, if not used appropriately, they can be a source of distraction for students. Therefore, it is important for teachers to direct students appropriately in using this learning media so that learning goals can be achieved optimally. Based on the discussion above, it can be concluded that the difficulty of learning mathematics in simple fraction material experienced by grade VI students of Nida Suksasat School Elementary School is greatly influenced by the lack of visual and abstract understanding of fractions. The use of fractional card media has proven to be effective in overcoming these difficulties by increasing students' understanding of the concept of fractions through visual representation and card manipulation. In addition, this media has also succeeded in increasing student engagement, motivation, and learning outcomes. However, challenges related to time and resource limitations must be a concern in the application of this media in the classroom.

Conclusion

Based on the results of research conducted in grade VI of Nida Suksasat School Elementary School, Satun, Thailand, regarding the analysis of difficulties in learning mathematics on simple fraction materials through the medium of fractional cards, the following can be concluded. Most students have difficulty understanding simple fraction material, especially in recognizing the concept of fractions, performing basic operations such as addition and subtraction of fractions, and simplifying fractions. Students also have difficulty understanding the relationship between fractions, decimals, and percents. In addition, they often find it confusing to visualize fractions in a more concrete form, which leads to difficulties in solving mathematical problems related to fractions. The use of fractional card media has proven to be effective in helping students overcome the difficulties they face in simple fractional materials. This medium allows students to see and manipulate fractions in a more concrete visual form, so that they can more easily understand the concept of fractions, recognize equivalent fractions, and perform addition and subtraction operations of fractions with more confidence. The application of fractional card media increases student involvement in the learning process. Students who were previously passive and had difficulty understanding mathematics material became more active and confident in learning. The use of fractional cards also creates a more fun and interactive learning atmosphere, so students are more motivated to participate in learning. Based on the tests given before and after the use of fractional card media, there was a significant increase in students' understanding of simple fractional materials. Students who previously had difficulty answering fraction-related questions, after using the media of fractional cards, were able to solve these problems better, showing an improvement in their learning outcomes. Although the use of fractional card media has a positive impact, there are several challenges faced, such as limited learning time and a limited number of cards, so not all students can maximize the use of this media optimally. Therefore, it is important for teachers to plan lessons well and ensure that the media used is sufficient to cover all students in the classroom. Based on this conclusion, it is suggested that the use of fractional card media can be applied more widely in other classes, especially for fractional materials that are difficult to understand. Teachers are expected to be able to use this media creatively and adapt it to the needs of students so that mathematics learning can run more effectively. In addition, increasing the availability of adequate learning media also needs to be considered to ensure that every student can learn optimally. Overall, this study shows that fractional card media can be an effective solution in overcoming students' learning difficulties in simple fractional materials, as well as increasing student motivation and learning outcomes in grade VI of Nida Suksasat School Elementary School, Satun, Thailand.

Referensi

Agustina, & Reni. (2024). Pengaruh Penggunaan Media Pembelajaran Kartu Pecahan terhadap Pemahaman Materi Pecahan pada Siswa Sekolah Dasar. *Jurnal Pendidikan Matematika, 12*(2), 234-247.

Ahmad, & Rida. (2023). Peran Media Kartu Pecahan dalam Meningkatkan Pemahaman Konsep Pecahan Sederhana pada Siswa Kelas V SD. *Jurnal Penelitian Pendidikan, 16*(1), 57-64.

Ardiansyah, & Wulandari. (2021). Analisis Kesulitan Siswa dalam Memahami Materi Pecahan pada Pembelajaran Matematika di Sekolah Dasar. *Jurnal Penelitian Pendidikan, 14*(2), 112-120.

Ashcraft. (2022). Cognitive processes and mathematics learning: The role of working memory. *Journal of Educational Psychology, 109*(4), 550-562.

Bakar, & Hamzah. (2022). Visualizing fraction concepts with hands-on materials. *Journal of Educational and Developmental Psychology, 72*(2), 146-156.

Creswell, J. (2020). *Desain Penelitian: Pendekatan Metode Kualitatif, Kuantitatif, dan Campuran (edisi ke-4).* Thousand Oaks: CA: Publikasi Sage.

Dahlia, & Iskandar, T. (2024). Strategi Kepala Madrasah Dalam Meningkatkan Kedisiplinan Guru Di Madrasah Tsanawiyah Swasta Tahfidzul Quran Kota Tanjungbalai. *Journal of Multidisciplinary Scientific Studies (IJOMSS), 2*(5), 12-21. doi:https://doi.org/10.33151/ijomss.v2i5.359

Deci, R. (2020). The "what" and "why" of goal pursuits: Human needs and the self-determination of behavior. *Psychological Inquiry, 11*(4), 227-268.

Harris. (2023). The role of interactive learning media in teaching fractions. *Educational Technology Research and Development, 66*(2), 447-468.

Hendra, & Wahyuni. (2023). The effect of fraction manipulative material using visual aids on students' understanding. *Journal of Mathematics Education, 3*(2), 121-128.

Hendri Yahya Sahputra, S. W. (2024). Pemanfaatan Media Sosial Sebagai Sarana Pendukung Keberhasilan Pendidikan Di SMP Bumi Qur'an Siantar. *Jurnal Mudarrisuna: Media Kajian Pendidikan Agama Islam, 14*(4), 476-487. doi:http://dx.doi.org/10.22373/jm.v14i4.24509

Intan Bayzura Sirait, J. D. (2025). ANALISIS FAKTOR – FAKTOR PENGHAMBAT PERUBAHAN DALAM KURIKULUM MERDEKA Di Madrasah Ibtidaiyah Swasta Kota Tanjungbalai. *Jurnal Abshar (Hukum Keluarga Islam, Pendidikan, Kajian Islam dan Humaniora), 5*(1), 20-24.

Iskandar, T. (2021). Pengembangan Sumber Daya Manusia Universitas Islam Negeri Sumatera Utara. *PENDALAS: Jurnal Penelitian Tindakan Kelas dan Pengabdian Masyarakat, 1*(2), 174-197. doi:https://doi.org/10.47006/pendalas.v1i2.80

Jonassen. (2021). Designing for situated learning. *Educational Technology Research and Development, 59*(3), 385-404.

Mazlinda Utari Marpaung, I. Y. (2025). IMPLEMENTATION OF THE MADRASAH VISION AND MISSION IN REALIZING STUDENTS WHO ACCEPT THE QUR'ANI AT MTsS YMPI SEI. TUALANG RASO TANJUNGBALAI CITY. *Jurnal Abshar (Hukum Keluarga Islam, Pendidikan, Kajian Islam dan Humaniora), 5*(1), 25-33.

Purnama, Wahyu, & Setyawan. (2024). The effectiveness of fraction card game in improving students' understanding. *Mathematics Education Journal, 51*(2), 45-56.

Putri Syahri, S. S. (2024). Implementasi moderenisasi agama di Kampus UIN Raden Fatah Palembang dengan tujuan bisa saling menghargai antar budaya dan agama. *Academy of Education Journal, 15*(1), 278-287. doi:https://doi.org/10.47200/aoej.v15i1.2171

Rizki Inayah Putri, T. I. (2023). PENGEMBANGAN MODUL FIKIH BERBASIS INQUIRY LEARNING DI KELAS VIII MADRASAH TSANAWIYAH NEGERI II MANDAILING NATAL. *Edu Global: Jurnal Pendidikan Islam, 4*(1), 54-62. doi:https://doi.org/10.56874/eduglobal.v4i1.1159

Sugiyono. (2022). *Metode Penelitian Kuantitatif, Kualitatif, Dan R&D.* Bandung: CV. Alfabeta.

Sullivan, & Clarke. (2024). Teaching and learning mathematics: The learning and teaching of fractions in the early years. *Mathematics Education Research Journal, 26*(3), 501-518.

Topan Iskandar, U. K. (2023). *Filsafat Manajemen Pendidikan Islam: Telaah manajemen Pendidikan dari Sudut Pandang Filsafat Islam.* Nganjuk: DEWA PUBLISHING.

Umi Kalsum, P. S. (2023). *ISU-ISU KONTEMPORER.* Jambi: PT. Sonpedia Publishing.

Umi Kalsum, Z. Z. (2024). Strategi Ketua Jurusan PAI Kampus Universitas Ahmad Dahlan dalam Mengembangkan Kampus Merdeka untuk Mutu Lulusan. *Journal of Education Research, 5*(1), 76-83. doi:https://doi.org/10.37985/jer.v5i1.764

Wright, & Guisbond. (2021). Using fraction models to teach fraction concepts. *International Journal of Mathematics Education, 48*(1), 1-14.