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EXPLORING LOCAL WISDOM: UTILIZING ETHNOMATHEMATICS TO IMPROVE MATHEMATICAL CREATIVE THINKING SKILLS

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ABSTRACT

Ethnomathematics is cultural mathematics. The culture in question is the habitual behavior of the people around you, such as the behavior of urban or rural community groups, labor groups, professional groups, student age groups, indigenous peoples, and other groups. Various efforts are made to increase student motivation in learning mathematics. It is hoped that it can improve learning outcomes and improve mathematical creative thinking skills. One of the initiatives is ethnomathematics-based learning, which studies the relationship between culture and mathematics, and integrates local wisdom values into mathematical concepts. In this way, students not only learn mathematical concepts, but also develop an appreciation and love for their own culture. The purpose of this study is to determine the use of ethnomathematics to improve mathematical creative thinking skills. Metode penelitian yang digunakan dalam penelitian ini adalah metode SLR (Systematic Literature Review), This is a method of identifying, reviewing, and summarising various studies on the topic at hand. Data collection is done by documenting all articles that have similar research results. The articles used in the study were 14 articles taken from the Gooogle Scholar database, Research Gate, Springer Link. This research shows that the ethnomathematics approach can increase learning motivation, student engagement, understanding of mathematical concepts, and creative problem solving skills. In addition, ethnomathematics can also be used as a means to preserve local wisdom and cultural values of Indonesian society. Therefore, the use of ethnomathematics in mathematics learning can be an effective strategy to improve students' creative thinking skills and foster deeper cultural awareness.

Keywords: Ethnomathematics, Mathematical Creative Thinking Skills, Systematic Literature Review.

INTRODUCTION

Every culture in the world uses and develops mathematical ideas, methods, and techniques to meet life's challenges (D'Ambrosio, 1985, 2016; Rosa & Orey, 2016; Risdiyanti & Prahmana, 2019). The ideas, methods and techniques of mathematics developed by a Brazilian mathematician are called ethnomathematics (Rosa & Orey, 2016). D'Ambrosio initiated ethnomathematics motivated by mechanistic mathematics teaching, directly on formulas and abstract structures that are far from the reality of student life (D'Ambroiso, 2016; Rosa & Orey, 2016, Risdiyanti & Prahmana, 2017). Since the beginning of ethnomathematics in 1977, ethnomathematics has developed and become known to the world through D'Ambrosio's writings and speeches at various conferences.

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Ethnomathematics grows and develops in certain cultures with behavioral habits in their environment. Human behavior habits in their environment, such as the behavior of urban or rural community groups, work groups, professional classes, students by age group, indigenous peoples, and several other groups. (D'Ambrosio, 1989; Prabawati, 2016;). Mathematics is a form of culture that is integrated in aspects of people's lives throughout the world, including ethnic communities, especially Indonesia, and ethnic groups throughout the world. By using the habits experienced by students and relating them to the mathematical concepts they learn, they will discover the benefits of learning mathematics (Hartono. S, 2014).

In 2016 there has been research on ethnomathematics in Indonesia, various studies show that ethnomathematics has great potential to be used in learning. Ethnomathematics can increase student learning motivation, understanding mathematical concepts, increase creativity in solving mathematical problems and instill character in students (Agasi, G. R., & Wahyuono, Y. D, 2016; Richardo, 2016; Utomo, A. D., & Purwanto, A, 2016).

One of the causes of low student learning outcomes is mechanistic learning that does not connect mathematics with the reality of life (Agusta, F. A, 2017; Istiqomah, I., &; Ashadi, A, 2018; Sucipto, S., & Istiqomah, I, 2018). Students as members of society who enter the world of formal education have a foundation of knowledge that has essentially been formed since being in the surrounding community, including in life. Activities carried out in everyday life indirectly use mathematical concepts. For example, the habit of getting up early depends on the time of waking up, shopping habits and others. Behavioral habits that indicate the culture around and that are associated with mathematical concepts are known as ethnomathematics (Hartono. S, 2014).

Many students view mathematics as a difficult subject and often cause complex problems resulting in poor learning outcomes. Mistakes made not only come from students' lack of ability, but there are other factors that also affect student success in learning mathematics, learning is tailored to student needs. In order for learning outcomes to be successful, an appropriate method or strategy is needed in the learning process by students and teachers (Marisanita, 2009).

The inability of students to think creatively about what they have learned results in poor ability to solve mathematical problems, which is caused by their low ability to think creatively. Indeed, there are still many schools that use conventional methods that are applied continuously, so that student learning outcomes have not been maximized.

To perfect students' creative thinking skills, learning must be designed by integrating methods that prioritize students' psychological aspects (Wahyu Munawaroh, 2019). Ethnomathematics, as a concept that combines local culture and mathematical material is one option that can be done. Apart from being a means of motivation, ethnomathematics brings new nuances to reduce student boredom in learning

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mathematics (Widyaningsih, et al, 2020). By utilizing local culture that is close to student life, students will have ease in relating and cultural elements associated with mathematical material.

Cockroft suggests that mathematics needs to be taught to students because (1) it is always used in all aspects of life; (2) all fields of study require appropriate mathematical skills; (3) is a strong, concise, and clear means of communication; (4) can be used to present information in a variety of ways; (5) improve logical thinking skills, accuracy, and spatial sense; and (6) provide satisfaction for efforts to solve challenging problems (Abdurrahman, 2003; Sarwoedi, Desi O.M, Peni Febrianti, I Nyoman W, 2018).

Related to the study above, Ethnomathematics is an approach to learning mathematics that utilizes the habits experienced by students and relates them to the mathematical concepts learned. This approach is based on the assumption that mathematics is part of people's culture, so it can be found in various forms and expressions in everyday life.

According to Rahmatina (2015) in learning mathematics creativity is needed, especially to solve problems involving creative thinking, where students are expected to be able to come up with new creative ideas to analyze and solve problems. Not only to solve problems, creative abilities are also very important to be used to find mathematical concepts (Damanik, 2018). Creative thinking must be formed and developed in the learning process. Creative thinking will help a person to improve the quality and effectiveness of problem solving and decisions taken (Azmi, 2014).

Ethnomathematics studies the relationship between culture and mathematics, as well as integrating the values of local wisdom into mathematical concepts. In this way, students not only learn mathematical concepts, but also develop an appreciation and love for their own culture. The use of ethnomathematics in mathematics learning can be an effective strategy to improve students' creative thinking abilities and develop deeper cultural awareness.

In accordance with Ricardo's (2016) research (1) Showing that ethnomathematics helps students build mathematical concepts with the prior knowledge they already know, because it is through the student's own environment. (2). Ethnomathematics provides a learning environment that creates fun and is free from the assumption that mathematics is scary. (3). Ethnomathematics is able to provide affective competence in the form of creating a sense of appreciation, nationalism, pride in the nation's heritage, traditions, and culture (4). Ethnomathematics supports students' abilities in accordance with the expectations of a scientific approach.

M. Andi., Detalia, N. (2022), showed that the use of rotational textbook media on geometric transformations with ethnomathematical nuances in the Kudus kretek dance played a role in improving students' learning and mathematical creative thinking skills, as evidenced by a significant difference between student learning outcomes before and after using the textbook media of rotation materials on geometric transformations with ethnomathematical nuances in the Kudus kretek dance.

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Zahara, S., Ervin, A. (2022), stated that students' creative thinking skills are better with ethnomathematical methods compared to PBL methods. The statement of the results of this study is also supported by research (Amalia, 2018) which states that learning that contains ethnomathematics has a positive effect on improving students' creative thinking skills. The results of the study also agree with (Sariningsih & Kadarisma, 2016) which states that there is an increase in students' creative thinking skills thanks to an ethnomathematics-based scientific approach.

Adi, S., dkk. (2023) menyatakan bahwa penggunaan bahan ajar etnomatematika melalui permainan engklek untuk kemampuan berpikir kreatif siswa dapat menjadi solusi yang tepat bagi seorang guru untuk menjadikan suasana pembelajaran lebih efektif, inovatif dan interaktif. Sesuai dengan hasil penelitian yang dilakukan oleh Herianto (2021), hasil menunjukan bahwa terdapat pengaruh etnomatematika terhadap kemampuan berpikir kreatif siswa.

Theoretical Studies

Some of the theories on which this writing is based are ethnomathematics and the ability to think creatively mathematically..

a. Ethnomathematics

Ethnomathematics is a new term in mathematics that links culture with mathematical concepts. The term was coined by D'Ambrosio (1984) a Brazilian mathematician with the following definition: "Ethnomathematics is the way different cultural groups mathematise (count, measure, relate, classify, and infer)". According to him, ethno affixes explain all phenomena whose cultural identity is grouped into language, codes, values, dialects, beliefs, food and clothing, customs and behavior. The word mathematics describes a broad view of mathematical calculations of solving, arithmetic, classifying, sorting, decision making and modeling.

Therefore, ethnomathematics is a way of using mathematics by cultural groups. Because ethnomathematics grows and develops from culture, often people do not realize that they use mathematics. Therefore it is necessary to point out that in everyday life, society, especially students, is no stranger to mathematics or that mathematics is in everyday life. If they feel the benefits of mathematics, they will naturally learn mathematics.

In his writing quoted by Mampouw (2010), D'Ambrosio put forward the philosophy and pedagogics in ethnomathematics as follows "ethnomathematics is a research program in the history and philosophy of mathematics, with pedagogical implications", which focuses on the description of art and technique (tic [from techne]), understanding and organizing it (mathema) in different socio-cultural environments (ethno). In addition, according to Mampouw (2010), research conducted by Orey and Rosa managed to bring together several terms used to describe how mathematics is explored revealed from a local perspective.

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These terms are indigenous mathematics (Gay & Cole, Lancy), sociomathematics (Zaslavsky), informal mathematics (Posner, Ascher & Ascher), mathematics in the socio-cultural environment (Doumbia, Toure'), spontaneous mathematics (D'Ambrosio), oral mathematics (Carraher, Kane), oppressed mathematics (Gerdes), non-standard mathematics (Carraher, Gerder, Harris), hidden or frozen mathematics (Gerdes), folk mathematics (Mellin-Olsen), people's mathematics (Julie) and mathematics codifies in know-how (Ferreire). Of course, by paying attention to the broad scope of ethnomathematics and understanding the wisdom of local communities, ethnomathematics can be explored with the aim of developing learning.

Based on the study above, it can be concluded that ethnomathematics can be used as an effective and meaningful approach to learning mathematics for students. Ethnomathematics helps students more easily understand mathematics, increases student learning motivation, and develops critical and creative thinking skills.

b. Mathematical Creative Thinking Ability

Pehkonen, 1997; Krutetskii, 1976 states that creative thinking is a combination of logical thinking and thinking based on intuition, with conscious attention to flexibility, fluidity and novelty. Creative thinking is indispensable in mathematics because it is useful for formulating, interpreting, and solving problem-solving plan models. This is reinforced by Ginsburg's view (Singer and Voica, 2015) that mathematics is not only about determining what is true but also attracting thoughts.

The ability to think creatively is a higher-order thinking skill, namely thinking skills that go beyond memorizing and conveying known information (Solehuzain, 2017). A person with strong thinking skills will connect, change, and manipulate experiences to think critically and creatively to make decisions and solve problems of new situations (Nurlaela & Ismayati, 2015: 51). According to Siswono (2005), creative thinking ability ability to: (a) understand related information, what is known and what is needed (b) problems with various answers (fluency) (c) solved in one way or another, and students provide various explanations for the problem (flexibility) (d). Check the answer with different solution methods, with different new methods (novelty).

The ability to think creatively allows discoveries in the fields of science and technology. Something that already exists is then transformed into something new and so on. This is where creativity allows humans to be competitive and survive in an ever-changing life. Creative people are able to see things from a different point of view. If someone manages to solve the problem, then he is a creative person (DePorter & Hernacki, 1992).

According to Rahmatina (2015), creativity is very necessary in learning mathematics, especially for problem solving, namely creative thinking, where students are expected to be able to come up with new creative ideas to analyze and solve problems. Not only for solving problems, creative skills are also very important to use to discover mathematical concepts (Damanik, 2018). Creative thinking must

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be formed and developed in the learning process. Creative thinking will help someone improve the quality and effectiveness of problem solving and decision making (Azmi, 2014).

Mathematical creative thinking ability is the ability to find mathematical solutions in a simple and flexible way. According to Livne (Mahmudi, 2010: 3), the ability to think creatively in mathematics includes aspects of fluency, flexibility, originality/novelty, and detail. Here, fluency is related to the number of solutions. Flexibility is associated with a diversity of problem-solving strategy ideas. Authenticity concerns the uniqueness of student responses. The detail aspect is related to the coherence of answers.

Based on this view, it can be concluded that the ability to think creatively in mathematics is defined as a person's ability to produce and solve mathematical problems by means of divergent deduction. In addition, from these abilities, ideas and real works can be realized in the form of products that have not existed before.

Ethnomathematics can stimulate students' creative thinking. By looking at how maths is used in different ways, students may be faced with new challenges that require them to think of ways to find solutions. This can help students develop their creative thinking skills.

METHODS

The research method uses the Systematic Literature Review (SLR) method. In Indonesian, systematic literature review is a literature review method that identifies, reviews, evaluates, and interprets all available research. With this method, researchers review and identify journals in a structured manner that in each process follows the steps that have been set (Triandini et al, 2019). The design used in this study is to summarize, review, and analyze several studies that are relevant to the problem.

To complete this study, researchers collected journal notes from Google Schoolar, Research Gate, Springer Link. The keywords are Ethnomathematics and Mathematical Creative Thinking Ability. The collected articles are only articles published in the period from 2016 to 2024. From various articles, the researcher selected 14 articles that were closely related to the keywords used. The next step, the researcher grouped articles related to ethnomathematics and mathematical creative thinking skills.

FINDINGS

Ethnomathematics-based mathematics learning is one of the solutions to improve mathematical creative thinking skills. By applying ethnomathematics to the mathematics learning process, students' mathematical creative thinking skills can be improved compared to before applying ethnomathematics. The data of the research results included in this article is an analysis and summary of the documented articles related to ethnomathematics and mathematical creative thinking skills.

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Table 1 Research Results related to the Utilization of Ethnomathematics to Improve Mathematical Creative Thinking Ability

No	Researcher and Year	Heading	Research Results
1	Aisyah, N. A., dkk. (2024)	Application of Geogebra-Assisted Ethnomathematics-Based Discovery Learning Model to Mathematical Creative Thinking Ability.	There is an increase in capabilities mathematical creative thinking using the Discovery Learning Model based on ethnomathematics assisted by GeoGebra. The mathematical creative thinking ability in the experimental class with the GeoGebra-assisted ethnomathematics-based Discovery Learning Model was higher and better than the control class with the learning model Conventional.
2	Cahyono, B., dkk. (2023)	Development of E-comic Learning Media Based on Ethnomathematics and Creative Thinking Skills on MTs Geometry Materials	E-comic media is effective in increasing creative thinking ability. So that ethnomathematics-based e-comic media and think creatively on the material geometry is declared feasible for use because it is valid, practical and effectively increase motivation and students' creative thinking skills, even though there are special notes for originality indicators get the lowest score and need further e-comic development.
3	Adi, S., dkk. (2023)	Innovation of Ethnomathematics Teaching Materials Through Engklek Games with Game Base Learning on Students' Creative Thinking Skills	The use of ethnomathematics teaching materials through engklek games for students' creative thinking skills can be the right solution for a teacher to make the learning atmosphere more effective, innovative and interactive
4	Firda, A.,dkk. (2023)	Development of Flipchart Learning Media based on Ethnomathematics	The learning process using media tools in the form of ethnomathematics-based flipcharts increases the new knowledge obtained by students and the active participation of students so that students construct their own ideas. Then, by using media tools in the form of ethnomathematics-based flipcharts, students also get used to practicing their thinking on their ideas.
5	Nugraha, K. S., dkk. (2023)	Creative thinking skills in the SAVI learning model with ethnomathematical nuances based on learning styles	The ethnomathematical visual learning style has a KBK level in the level 4 (Very Creative) category, able to meet the indicators of fluency, flexibility, novelty, and elaboration better compared to auditory and kinesthetic learning style students.
6	M, Andi., Detalia, N. (2022)	Development of Rotation Material Textbook in Transformation Geometry in	The results of the study showed that the use of rotational textbook media on geometric transformations with

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		the Holy Kretek Dance Movement to Improve the Creative Thinking Ability of Junior High School Students	ethnomathematical nuances in the Kudus kretek dance played a role in improving students' learning and mathematical creative thinking skills, as evidenced by a significant difference between student learning outcomes before and after using the textbook media of rotation materials on geometric transformations with ethnomathematical nuances in the kudus kretek dance.
7	Zahara, S., Ervin, A. (2022)	Comparison of Creative Thinking Ability Using PBL and Ethnomathematics Reviewed from KAM	The results of the study stated that students' creative thinking skills were better with the ethnomathematical method compared to the PBL method.
8	Irfan, M. (2022)	The Effect of Ethnomathematics-Based Project Based Learning (PjBL) Learning Model on Students' Creative Thinking Ability	From the research conducted and the results of data analysis, it was concluded that student activities in the experimental classroom using the Project Based Learning (PjBl) learning model with Ethnomathematics were better than the control class using conventional learning.
9	Herianto, H.,dkk (2021)	The Influence of Ethnomathematical Approaches and Cognitive Styles on Students' Creative Thinking Ability. Pedagogy	The results of the study show that there is an influence of ethnomathematics on students' creative thinking skills.
10	Amalia, S. R.,dkk. (2021)	Application of Ethnomathematics-Based Problem Based Learning to Mathematical Creative Thinking.	The results of the research, It can be concluded that the application of ethnomathematics-based PBL model able to improve the ability creative thinking.
11	Amalia, S. R. (2018)	The Effectiveness of the Ethnomathematical Charged Discovery Model on Mathematical Creative Thinking Ability	Based on the results of the study, it was concluded that the process ability of students with an ethnomathematical discovery model had a positive effect on KBKM and the average mathematical creative thinking ability was higher than the average mathematical creative thinking ability using the expoitory method.
12	Solehuzain, & Dwidayati, N.K. (2017)	Creative Thinking Ability and Curiosity in Problem-Based Learning Model with Open Ended Problems	The study concluded that problem-based learning with open-ended problems was effective on students' mathematical creative thinking skills and curiosity. There is a significant influence of students' curiosity on mathematical creative thinking skills.
13	Sariningsih, R., & Kadarisma, G. (2016)	Improving the Mathematical Creative Thinking Ability and Learning Independence of Junior High School Students through an	The results of the study showed that junior high school students whose learning used a regular scientific approach and those who used an ethnomathematics-based scientific

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		Ethnomathematics-Based Scientific Approach	approach had different performance and improvement in mathematical creative thinking skills. There is a relationship between students' mathematical creative thinking ability and students' learning independence whose learning uses an ethnomathematics-based scientific approach.
14	Ricardo, R. (2016)	The Role of Ethnomathematics in the Application of Mathematics Learning in the Curriculum	Based on the results of the study, it is shown that ethnomathematics in mathematics learning in the 2013 curriculum is to provide a learning environment that creates good motivation and fun and is free from the assumption that mathematics is scary and supports students' abilities in accordance with the expectations of the implementation of the scientific approach.

Based on the results of research that has been carried out as listed in the table above, it shows that the use of ethnomathematics has the potential to improve mathematical creative thinking skills. Several examples of ethnomathematical concepts presented with learning models, and used in the development of teaching materials show positive results in increasing students' learning motivation and mathematical creative thinking skills.

DISCUSSION

In this study, data analysis is focused on the use of ethnomathematics to improve mathematical creative thinking skills by summarizing, reviewing, and analyzing several studies relevant to the problem. The collected articles are only articles published in the period from 2016 to 2024. From various articles, the researcher selected 14 articles that were closely related to the keywords used. The next step, the researcher grouped articles related to ethnomathematics and mathematical creative thinking skills.

The results of the analysis can be concluded that the use of ethnomathematics in learning can improve mathematical creative thinking skills. There is an increase in mathematical creative thinking skills in learning by using the learning method presented based on ethnomathematics. And there is also an increase in learning motivation and mathematical creative thinking skills if the teaching materials made are presented based on ethnomathematics. Based on this, the use of ethnomathematics has the potential to increase learning motivation, mathematical creative thinking skills and make the learning atmosphere more effective, innovative and interactive.

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This is in line with research (Aisah, N. A., et al., 2024; Nugraha, K. S., et al., 2023; Zahara, S., Ervin, A., 2022; Irfan, M., 2022; Amalia, S. R., et al., 2021; Amalia, S. R., 2018; Solehuzain, & Dwidayati, N.K., 2017) that the use of ethnomathematics, learning is more interesting, increases creative thinking skills and learning motivation.

The use of teaching materials or media in ethnomathematics-based learning, in addition to improving mathematical creative thinking skills, also makes the learning atmosphere more effective, innovative and interactive (Cahyono, B., et al., 2023; Adi, S., et al., 2023; Firda, A., et al., 2023;

M, Andi., Detalia, N., 2022).

This research can contribute to improving mathematical creative thinking skills. By applying the approach or utilization of ethnomathematics in learning, either presented with other learning models or with innovative teaching materials, students can engage in learning more meaningfully and contextually.

Challenges await when applying ethnomathematics to mathematics education. One of the challenges is finding the right resources. Ethnomathematical resources are not always available, especially in urban areas. Another challenge is to train teachers to use ethnomathematics in learning. Teachers must have a good knowledge of ethnomathematics and local culture.

CONCLUSION AND SUGGESTION

Based on the results of the study, it was concluded that the use of ethnomathematics is an effective strategy to improve students' mathematical creative thinking skills. Ethnomathematics can provide experiential learning and encourage students to think critically and creatively. This approach can help students to understand math better and relate it to their own lives. It is based on the study of findings related to ethnomathematics and mathematical creative thinking.

Here are some suggestions to improve the effectiveness of ethnomathematics learning in improving students' mathematical creative thinking skills, namely ethnomathematics learning must be adjusted to the level of student development, ethnomathematics learning must be designed with attention to creativity, ethnomathematics learning should be designed to encourage students to think critically and solve problems.

REFERENCE

Agasi, G. R., & Wahyuono, Y. D. (2016). Kajian Etnomatematika: Studi Kasus Penggunaan Bahasa Lokal untuk Penyajian dan Penyelesaian Masalah Lokal Matematika. PRISMA, Prosiding Seminar Nasional Matematika, 527-534.

Agusta, F. A. (2017). *Pengaruh Pendekatan Saintifik Berbasis Etnomatematika Terhadap Hasil Belajar Matematika Siswa Kelas VII SMP Negeri 14 Kota Palembang. Jurnal Pendidikan Matematika,*

e-ISSN: 2528-102X
p-ISSN: 2541-4321

11(1), 1-11.

Aisyah, N. A., Abdullah, A. A., Mubarrok, M. N., Adawiya, R., & Sholihah, D. A. (2024). Penerapan Model Discovery Learning Berbasis Etnomatematika Berbantuan Geogebra terhadap Kemampuan Berpikir Kreatif Matematis. MATHEMA: JURNAL PENDIDIKAN MATEMATIKA, 6(1), 1-10.

Amalia, S. R. (2018). Efektivitas Model Discovery Bermuatan Etnomatematika Terhadap Kemampuan Berpikir Kreatif Matematis. Jurnal Karya Pendidikan Matematika, 5(1), 9–14. https://doi.org/10.26714/jkpm.5.1.2018.9-14

Amalia, S. R., Purwaningsih, D., & Fasha, E. F. (2021). Penerapan Problem Based Learning Berbasis Etnomatematika Terhadap Berpikir Kreatif Matematis. AKSIOMA: Jurnal Program Studi Pendidikan Matematika, 10(4), 2507-2514.

Angraini, Firda, et al. "Pengembangan Media Pembelajaran Flipchart Berbasis Etnomatematika." Proximal: Jurnal Penelitian Matematika dan Pendidikan Matematika 6.2 (2023): 196-207.

Ardiansyah, A. S., Anwar, M., Prasetya, B. D., Wardani, R. K., & Ratnawati, N. (2023). Inovasi Bahan Ajar Etnomatematika Melalui Permainan Engklek Dengan Game Based Learning Terhadap Kemampuan Berpikir Kreatif Peserta Didik. Jurnal Lebesgue: Jurnal Ilmiah Pendidikan Matematika, Matematika dan Statistika, 4(2), 1344-1357.

Avella, J. T., Kebritchi, M., G. Nunn, S., &Kanai, T. (2016). Learning Analytics Methods, Benefits, and Challenges in Higher Education: A Systematic Literature Review. Online Learning, 20(2), 13-29.

Cahyono, B., Rohman, A. A., & Setyawati, R. D. (2023). Pengembangan Media Pembelajaran E-komik Berbasis Etnomatematik dan Kemampuan Berpikir Kreatif pada Materi Geometri MTs. AKSIOMA: Jurnal Program Studi Pendidikan Matematika, 12(2), 2283-2295.

D'Amborsio,U.1985. *Ethnomathematics and Its Place in the History And Pedagogy of Mathematics. For the Learning of Mathematics Journal.* Vol 5(1), 44-48

D'Ambrosio, U. (2016). *An Overview of the History of Ethnomathematics*. 5–10. https://doi.org/10.1007/978-3-319-30120-4_2

D'Ambrosio, U. (2016). *An overview of the history of Ethnomathematics. In M. Rosa, U. D'Ambrosio, D.C. Orey, L. Shirley, W. V. Alangui, P. Palhares, & M. E. Gavarrete (Ed.). Current and Future Perspectives of Ethnomathematics as A Program* (pp. 5- 10). Cham: Springer. https://doi.org/10.1007/978-3-319-30120-4_2

Damanik, W. P, 2018. Peran Keterampilan Kreatif dalam Penemuan Konsep Matematika. Jurnal Pendidikan Matematika.8(2).

D'Ambrosio, U. On ethnomathematics. 1989. Philosophica Mathematica (2) 4 no.1, 3-14.

e-ISSN: 2528-102X
p-ISSN: 2541-4321

DePorter, B., & Hernacki, M. 1992. *Quantum learning*. Jakarta : PT Mizan Publika. Sumarmo. 2013. Berpikir dan Disposisi Matematik Serta Pembelajarannya. Bandung: Jurusan Pendidikan Matematika UPI.

Firda, A.,dkk. (2023) Pengembangan Media Pembelajaran *Flipchart* berbasis *Ethnomatematika*. Proximal: Jurnal Penelitian Matematika dan Pendidikan Matematika. Vol.6 No.2.

Hartono, S. (2014). *Etnomatematika: Sebuah pendekatan pembelajaran matematika yang kontekstual. Yogyakarta: Kanisius.*

Herianto, H., Sumiati, S., & Jusmiana, A. (2021). Pengaruh Pendekatan Etnomatematika Dan Gaya Kognitif Terhadap Kemampuan Berpikir Kreatif Peserta didik. Pedagogy: Jurnal Pendidikan Matematika, 6(2), 1-16

Irfan, M. (2022). Pengaruh Model Pembelajaran Project Based Learning (PjBL) Berbasis Etnomatematika Terhadap Kemampuan Berpikir Kreatif Siswa. Proximal: Jurnal Penelitian Matematika dan Pendidikan Matematika, 5(2), 1-7.

Irma Risdiyanti and Rully Charitas Indra Prahmana.(2017). *Ethnomathematics: Exploration in Javanese culture. Journal of Physics: Conference Series.*

Istiqomah, I., & Ashadi, A. (2018). *Pengaruh Model Pembelajaran Etnomatematika Terhadap Hasil Belajar Matematika Siswa Kelas VII SMP Negeri 2 Ngoro, Mojokerto. Jurnal Pendidikan Matematika, 12(2), 1-12.*

Krutetskii, V.A. 1976. *The Psychology of Mathematical Abilities in School Children. Chicago: University of Chicago Press.*

Mahmudi, A. 2010. "Mengukur Kemampuan Berpikir Kreatif Matematis". Makalah. Konferensi Nasional Matematika XV UNIMA pada tanggal 30 Juni – 3 Juli 2010.

Mampouw. (2010). Eksplorasi Konsep Dasar Matematika Melalui Konteks Lokal dan Penggunaannya dalam Pembelajaran, Prosiding Konferensi Nasional Matematika V, Universitas Negeri Manado, ISBN 978-602-96426-1-2, hal.413-422.

Nugraha, K. S., Zaenuri, Z., & Suyitno, A. (2023). Kemampuan berpikir kreatif pada model pembelajaran SAVI bernuansa etnomatematika berdasarkan gaya belajar. JNPM (Jurnal Nasional Pendidikan Matematika), 7(2), 210-223.

Nugroho, M. A., & Munahefi, D. N. (2022). Pengembangan Buku Ajar Materi Rotasi dalam Geometri Transformasi pada Gerakan Tari Kretek Kudus untuk Meningkatkan Kemampuan Berpikir Kreatif Peserta Didik SMP. MATH LOCUS: Jurnal Riset dan Inovasi Pendidikan Matematika, 3(1), 66-75.

Nurlaela, L & Ismayati, E. 2015. Strategi Belajar Berpikir Kreatif. Yogyakarta : Penerbit Ombak.

Pehkonen, Erkki, & Helsinki. 1997. *"The State-of-Art in Mathematical Creativity". Zentralblatt für Didaktik der Mathematik (ZDM).* Vol 29(3) : pp 63—67.

e-ISSN: 2528-102X
p-ISSN: 2541-4321

Prabawati, M. N. (2016). Etnomatematika Masyarakat Pengrajin Anyaman Rajapolah Kabupaten Tasikmalaya. Infinity Journal, 5(1), 25. https://doi.org/10.22460/infinity.v5i1.p25-3.

Putri, ZS, & Azhar, E. (2022). Perbandingan Kemampuan Berpikir Kreatif Menggunakan PBL dan Etnomatematika Ditinjau dari KAM. Persatuan: Jurnal Ilmiah Pendidikan Matematika , 10 (3), 357-370. DOI:http://dx.doi.org/10.30738/union.v10i3.13245.

Rahmatina (2015). Pengaruh Penerapan Model Pembelajaran Berbasis Proyek Terhadap Kreativitas Siswa Pada Materi Geometri Ruang di Kelas XI SMA Negeri 10 Kota Padang. Jurnal Pendidikan Matematika.

Ricardo, R. 2016. Peran Etnomatematika Dalam Penerapan Pembelajaran Matematika Pada Kurikulum 2013. Jurnal Literasi Vol II (2) : 118 – 125

Rosa, M., & Orey, D. C. (2016). *State of the art in Ethnomathematics. In M. Rosa, U. D'Ambrosio, D. C.Orey, L. Shirley, W. V. Alangui, P. Palhares, & M. E. Gavarrete (Ed.). Current and Future Perspectives of Ethnomathematics as A Program* (pp. 11- 37). Cham: Springer. https://doi.org/10.1007/978-3-319-30120-4_3

Rusliah, N. 2016. Pendekatan Etnomatematika dalam Permainan Tradisional Anak di Wilayah Kerapatan Adat Koto Tengah Kota Sungai Penuh Propinsi Jambi. *Procedings Of The Interntional Conference On University-Community Enggagement Surabaya*– Indonesia, Hal: 715-726.

Sariningsih, R., & Kadarisma, G. (2016). Meningkatkan Kemampuan Berpikir Kreatif Matematis Dan Kemandirian Belajar Siswa Smp Melalui Pendekatan Saintifik Berbasis Etnomatematika. P2M STKIP Siliwangi, 3(1), 53. https://doi.org/10.22460/p2m.v3i1p53-56.478

Sarwoedi, Desi O.M, Peni Febrianti, I Nyoman W. (2018). *Efektifitas Etnomatematika dalam Meningkatkan Kemampuan Pemahaman Matematika Siswa. Jurnal Pendidikan Matematika Raflesia. Volume 3, No.2*

Singer, Florence Mihaela, & Voica, Cristian. 2015. *"Is Problem Posing a Tool for Identifying and Developing Mathematical Creativity?"*. Dalam Florence Mihaela Singer, Nerida F. Ellerton dan Jinfa Cai (Ed). 2015. *Mathematical Problem Posing : From Research to Effective Practice. New York : Springer*

Siswono. 2005. Upaya Meningkatkan Kemampuan Berpikir Kreatif Siswa Melalui Pengajuan Masalah. Jurnal Pendidikan Matematika dan Sains (JMPS). 10 (1) :1-9

Solehuzain, & Dwidayati, N.K. (2017). "Kemampuan Berpikir Kreatif dan Rasa Ingin Tahu pada Model *Problem-Based Learning* dengan Masalah *Open Ended*". UJMER : *Unnes Journal of Mathematics Education Research,* 6(1): 103-111.

Sucipto, S., & Istiqomah, I. (2018). *Pengaruh Model Pembelajaran Etnomatematika Terhadap Hasil Belajar Matematika Siswa Kelas VII SMP Negeri 1 Wonosari, Gunungkidul. Jurnal Pendidikan*

e-ISSN: 2528-102X
p-ISSN: 2541-4321

Matematika, 12(2), 13-20.

Triandini, E., Jayanatha, S., Indrawan, A., Werla Putra, G., & Iswara, B. (2019). Metode Tinjauan *Literatur Sistematis* untuk Identifikasi Platform dan Metode Pengembangan Sistem Informasi di Indonesia. *Jurnal Sistem Informasi Indonesia* , *1* (2), 63–77. https://doi.org/10.24002/ijis.v1i2.1916

Utomo, A. D., & Purwanto, A. (2016). *Etnomatematika Jawa dalam Pembuatan Batik. Jurnal Pendidikan Matematika, 10(2), 121-130.*

Wahyu Munawaroh, H. I. D. A. Y. A. T. U. L. (2019). Pengembangan Handout Melalui Pendekatan Etnomatematika Berbasis Keunggulan Lokal Materi Bangun Datar untuk Siswa Kelas IV Sd. Jurnal Penelitian Pendidikan Guru Sekolah Dasar, 7(2).

Widyaningsih, E., Septena, V. A., & Pamungkas, M. D. (2020). Analisis Bangunan Bersejarah Panggung Krapyak Terhadap Geometri. UNION: Jurnal Ilmiah Pendidikan Matematika, 8(1), 111-119.