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Implementation of Treffinger Model assisted by Color Card Media to Enhance Students' Mathematical Creativity Skills

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Abstract: This study aimed to find out the increase in students' creativity by using the Treffinger model assisted by color card media. This research used Class Action Research. The subject of the research was the VIII.3 grade students of Junior high school 1 Parepare. The data was collected using observation and tests. The research instrument was student activity observation sheets and test sheets for cycles 1 and 2. The data collected were analyzed by descriptive statistics technique. The result of the study showed that the implementation of the Treffinger model assisted by color card media can increase the mathematical creativity of the VIII.3 grade students of junior high school 1 Parepare. It can be indicated by the increase in the activity percentage with an average of 24.74% by cycle 1 was in the "fair" category (55.21%) to cycle 2 was in the "good" category (79.95%), and the increase of the achievement test was 24.53%.

Keywords: color card, creativity, mathematics, Treffinger learning model.

Abstrak: *Penelitian ini bertujuan untuk mengetahuai peningkatan kreativitas siswa dengan menggunakan model treffinger berbantuan media colorcard. Jenis penelitian yang digunakan adalah Penelitian Tindakan Kelas (PTK) dengan subjek penelitian siswa kelas VIII.3 SMP Negeri 1 Parepare. Teknik pengumpulan data menggunakan teknik observasi dan teknik tes. Instrumen yang digunakan berupa lembar observasi aktivitas, dan lembar tes siklus 1 dan siklus 2. Data yang terkumpul dianalisis dengan teknik statistik deskripstif. Hasil penelitian menunjukkan bahwa penggunaan model Treffinger berbantuan media Colorcard dapat meningkatkan kreativitas matematika siswa kelas VIII.3 SMP Negeri 1 Parepare. Hal ini ditunjukkan persentase aktivitas yang mengalami peningkatan skor rata-rata sebesar 24.74% dari siklus 1 kategori "cukup" (55.21%) ke siklus 2 kategori "baik" (79.95%), dan peningkatan hasil tes sebesar 24.53%.*

Kata kunci: *kartu warna, kreativitas, matematika, model pembelajaran Triffenger.*

▪ INTRODUCTION

Mathematics is one of the sciences that has an important role in human life. The concepts of mathematics are applied in other science because mathematics is a universal science that underlies the development of science and technology. Mathematics subject needs to be taught to all the students from elementary school (Mustafa et al, 2021), it aims to o equip students with logical, analytical, systematic, critical, and creative thinking.

The learning process of mathematics aims to prepare students to be able to face changing circumstances through logical, critical, creative, and effective thinking. Mathematics learning needs some aspects to support the learning process, they are creativity (Lubis, 2018). Therefore, teachers are required to be able to make various efforts to improve the mathematics learning process. One of the efforts that teachers can do is to increase mathematical creativity, according to Guilford (1973) creativity or

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creative thinking is the ability to see various possible solutions to a problem, it is a form of thinking that nowadays has received less attention in education, especially in schools, so it needs to be improved to support the goals of mathematics education.

Creativity is a result of the creative thinking process. Creativity is a key to success in solving problems (Sharon, 2021). Creativity in learning needs to be grown and developed (Muslimin, 2019) because it can bridge between the cognitive management stage and the execution stage so that students have convincing achievements and results (Adiansha, et al, 2018). Creativity in mathematics learning is very important because it contributes to the first level of development of mathematics theory, enabling the conjecture to be presented as an individual experience of a mathematical concept. This review is one reason why creativity is such an important factor in mathematical research.

Mathematics creativity must be activated. Creativity needs a context that the students should be prepared based on the significant experience to face a new situation. Students' creativity in solving a problem is still limited. So, the teacher must be able to ask the students to express their idea. Because basically, creativity is a complicated activity to bring up how the next mathematical creativity appears.

Alexander (2007) stated that creativity cannot be developed without regard to the creativity level. This notion informs that the level of individual creativity is different. The development of creativity aims to develop individual creative potential based on their level (Mahmudi, 2008). Creativity in mathematics learning is very important because it is one of the indicators of students' achievement in learning. Creativity shows students' skill to produce new ideas that can be an imaginative or synthetic activity that may involve the formation of new patterns in solving mathematical problems. Students who have creativity are more able to determine and solve the problem. Therefore, the teacher should give opportunities to the students so their creativity can be developed related to their potential. Based on that explanation, the students' creativity must be developed. A learning model is needed to facilitate the effort to increase students' creativity. In addition, supporting students' creativity is needed a learning media that can catch students' attention, making it easy to express their creative ideas. One of the appropriate learning models is the Treffinger model assisted by a color card. Therefore, this study aims to determine the increase in students' creativity through the Treffinger model assisted by color card media.

According to Treffinger (2005), the Treffinger model is one of the learning models that can organize the students' effort in solving problems, so students' mindsets are more systematic. The characteristic of the Treffinger learning model is integrating the cognitive and affective dimensions of the students to find out a solution to solve problems and make the students the active participant in solving a problem (Juliantari, et.al, 2018). According to Munandar (2014), Treffinger's model is one of the few that tackles creativity issues directly and provides practical suggestions on achieving cohesiveness by involving cognitive and affective skills at each level of this model. The Treffinger model shows their relationship and dependence in encouraging creative learning. In this research, the Treffinger model was applied through color card media. This modification aims to support the students' creativity in mathematics learning. So, they can easily understand abstract mathematical concepts. According to Djemari (2017), a colored card media is a color card that contains material and questions that

students in their group discussion are the relationship between the material and the question.

The Treffinger model is one of the few that tackle creativity issues directly and provides practical suggestions on achieving cohesiveness by involving cognitive and affective skills at each level of this model (Munandar, 2014). The Treffinger model shows their relationship and dependence in encouraging creative learning. The characteristics of the Treffinger model consist of some steps, they are basic tools, practice with the process, and working with real problems.

Table 1. Learning activity through the treffinger model settings

Steps	Learning Activity
Basic tool (Level 1, Divergent Function)	1. The students understand opened-ended problems (more than one solution) 2. Discussing, conveying ideas, and writing down them.
Practice with process (Level 2, the process of thinking and complex feeling)	Discussing and analyzing analog samples given and presenting examples in daily life.
Working with real problems (Level 3, Involvement in real challenges)	1. Understanding the problems in daily life. 2. Making questions and problem solving independently. 3. Giving reward.

According to Dj Pomalato (2019), Treffinger's creativity development models involve two dimensions, namely cognitive and affective, and consist of three stages. The first stage is the development of divergent functions to open the students to new ideas and possibilities. The second stage of the development phase emphasized the use of ideas in complex situations with tension and conflict. The third stage is the stage of involvement in the development of a real challenge with an emphasis on the use of the processes of thinking and feeling creative to solve problems freely and independently. Mathematics learning through the Treffinger model is the learning that uses three steps of the Treffinger model to develop students' creativity. Students are divided into some little groups to help each other understand the learning material and complete the task given by the teacher.

The Treffinger model assisted by color card media in this research aims to support the development of students' creativity in understanding the mathematical concept. Color card media also means colored card. A color card is a card that contains material and questions that students with their group discuss the relationship between the material and the question. This media is expected to increase students' creativity in problem-solving.

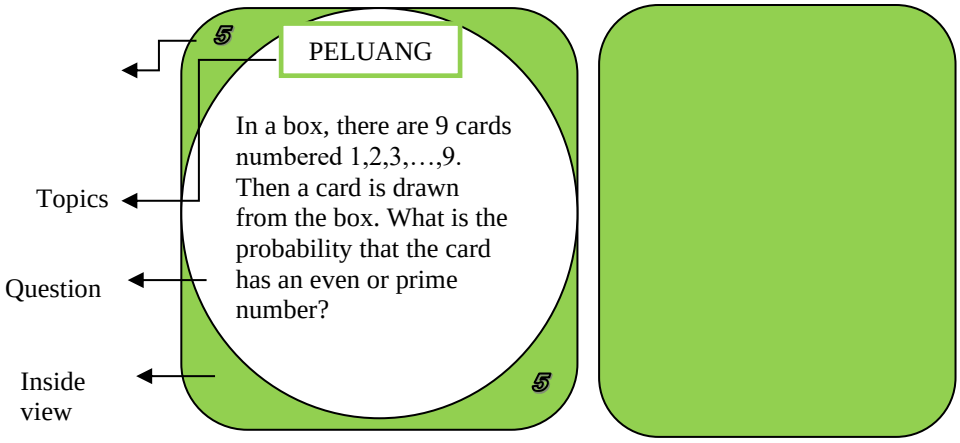

Figure 1. Color card Media

How to use the color card:
1. The teacher provides 6 colors of the color card and then distributes them to students
2. Students who get the same color card will be in the same group. They will identify the problem and solve it with their group.

In the learning activities, the creative students are more able to identify and solve the problem. Therefore, the teacher needs to provide opportunities to students so their creativity, talents, and interests can develop based on their potential. The creativity indicators used in this study (Haylock, 1987; Pitta-Pantazi, et.al, 2018) are (1) Fluency in thinking, it is fluent and precise in solving the problem, (2) Flexibility, which is an ability to use some approaches in solving the problem, (3) Originality, it is an ability to use an unconventional way to solve the problem, and (4) Elaboration, is the ability to do something in details.

▪ METHOD

This study was a Classroom Action Research. It was conducted in 2 cycles. The stage of cycles in the Class action study is as follows: (1) Planning stage, at this stage the researcher explains what, why, where, when, and how the research is conducted. Classroom action learning is carried out collaboratively, to avoid the element of subjectivity. The researcher also explained the preparation of the research implementation, such as the lesson plan and instrument observation. (2) Implementation phase (Acting), at the implementation stage implementation activities or application planning actions, are carried out. At this stage, the learning process takes place as usual. Observers make observations objectively following the learning conditions carried out by researchers. This activity is urgent because the purpose of classroom action studies is to improve the learning process. (3) Observing stage, in the observation stage, two activities are observed, namely student learning activities and the learning process. Observation of the student learning process is carried out by the teacher (researcher) when conducting learning, while observing the learning process the teacher asks for the help of colleagues who act as collaborators in making observations. Collaborators make learning observations based on instruments that have been prepared by researchers. The results of observations from collaborators will later be useful or will be used by

researchers as reflection material for further learning improvements. (4) Reflection Phase, reflection activities are carried out when the collaborator (observer) has finished observing the researcher in carrying out learning. This activity is in the form of a discussion of the results of observations carried out by collaborators with implementing teachers (researchers). This stage is the core of the action class study, which is when the collaborator reveals things that he feels have gone well and have not gone well when his research manages the learning process. The results of reflection are used as material for consideration in the next design cycle, so that in essence reflection is an activity of evaluation, analysis, meaning, explanation, drawing conclusions, and identification actions carried out in the next planning cycle.

The population in this study were all students of class VIII Junior high school 1 Parepare which consisted of 4 classes, namely grades VIII1, VIII2, VIII3, and VIII4. Furthermore, class VIII3 totaling 32 students was used as a purposive sample with the consideration that the creativity of students in that class still needed to be improved. The technique of collecting data used the observation technique and test technique, by collecting the activity observation sheets and test sheets as the instruments. Then the collected data were analyzed using descriptive statistical techniques to calculate the mean and percentage of data. In addition, qualitative techniques are also used to describe the data that has been analyzed quantitatively. The interpretation of learning activities is categorized in Table 2.

Table 2. The interpretation of learning activities

The Percentage of Learning Activities	Category
$80\% \leq Pi \leq 100\%$	Very Good
$60\% \leq Pi < 80\%$	Good
$40\% \leq Pi < 60\%$	Fair
$20\% \leq Pi < 40\%$	Poor
$0\% \leq Pi < 20\%$	Very Poor

The data obtained from the students' creativity test achievement are used in the categorization in the following table.

Table 3. The interpretation of creativity level

Score	Category
81% −100%	Very high
61% − 80%	High
41% − 60%	Fair
21% − 40%	Low
0% − 20%	Very low

▪ RESULT AND DISSCUSSION

Learning activities were conducted in two cycles. Each cycle consisted of 3 meetings and it ended by giving the test. Each learning activity was observed using observation sheets that contain the indicators of creativity, such as fluency, flexibility, originality, and elaboration. The test given aimed to determine students' level of mathematical creativity after the learning activities through the Treffinger model

assisted by color card media. The observation sheet instrument and the worksheet had been validated by the validator, so they had been valid to use in this research. The student's activities during the learning process are shown in the following figure.

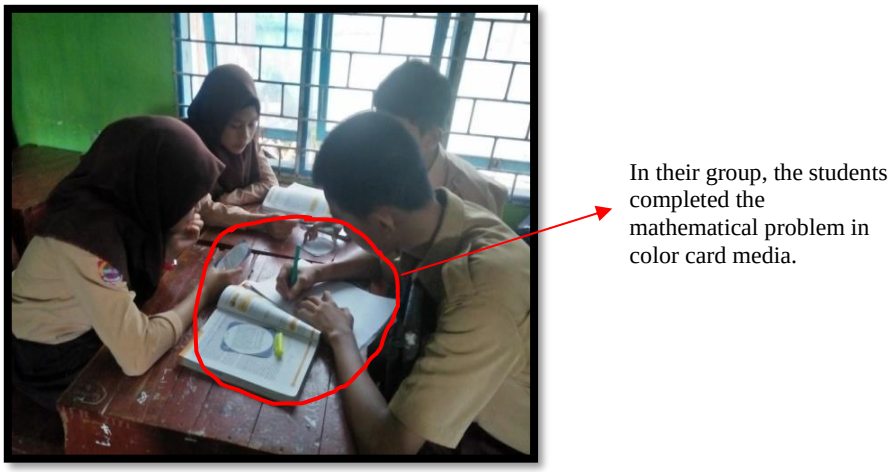

Figure 2. Problem solving activities using color card

The picture above shows the activities of students in groups to solve mathematics problems using color card media. In this process, the students used their creativity to express their ideas, then they discussed finding the solution to the worked problem. The result of the discussion was presented in front of the class to get suggestions from other groups. The observation result of students' activities in cycles 1 and 2, generally had creativity increase. This may happen because, at the end of cycle 1, the reflection was conducted to evaluate the weakness of the learning activities in cycle 1, so cycle 2 was expected to have an increase in activity. The comparison of the percentage of students' creativity in each indicator from cycle 1 to cycle 2 through the Treffinger model assisted by Color card media can be seen in Figure 3.

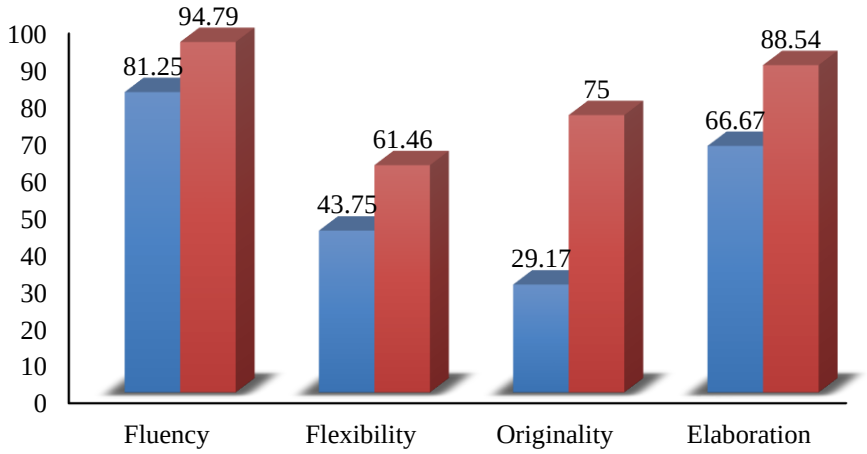

Figure 3. The Percentage of creativity indicators in phase 1 (blue) and phase 2 (red)

Figure 3 shows that there was an increase in the percentage of students' creativity in each creativity indicator from cycle 1 to cycle 2. This achievement indicated that the Treffinger model assisted by color card media can support students' creativity in mathematics learning. The indicators of creativity; fluency, flexibility, originality, and elaboration increased by an average of 24.74% from cycle 1 categorized as "Fair" (55.21%) to cycle 2 categorized as "Good" (79.95%).

The percentage of 55.21% in cycle 1 shows that students' creativity is quite good during the mathematics learning process, but several obstacles need to be overcome so it is expected that in cycle 2 creativity will increase. An important aspect that needs to be improved is the indicator of "originality" creativity or students in solving problems only follow the way given by the teacher and have no other solution. In cycle 2, this obstacle was overcome by directing students to read other reference books related to the questions given, lots of practice solving math problems, and the results obtained increased by 79.95% indicating creativity was in a good category. This means that the Treffinger model contributes to the mathematics learning process.

Next, the test was conducted at the end of each cycle. The test sheets contained essay mathematics question that was completed by students individually. The following presented the students' assignments.

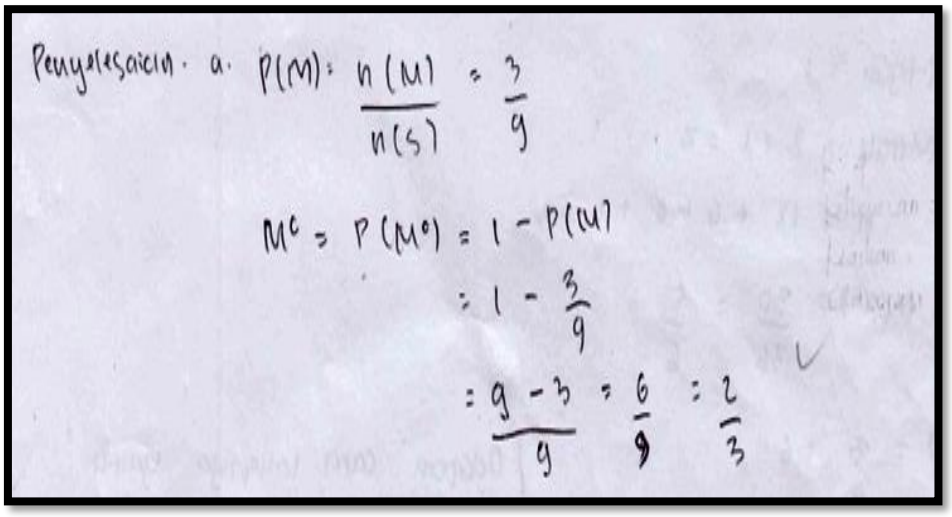

Figure 4. The scan of the student's assignment

Figure 4 is assumed to be representative of students' assignments. This achievement shows that the students' creativity was good because it indicates fluency, the students can express a relevant idea and solve it correctly and clearly. The test score data that has been converted into a categorization table for cycles 1 and 2 is explained in the following.

Table 4. Distribution of frequency and percentage of creativity score of cycles 1 and 2

Score Interval	Category	Cycle 1		Cycle 2	
		Frequency	Percentage (%)	Frequency	Percentage (%)
81 - 100	Very high	2	8.3	21	87.5

61 - 80	High	8	33.3	3	12.5
41 - 60	Fair	10	41.7	0	0
21 - 40	Low	4	16.7	0	0
0 - 20	Very low	0	0	0	0
	Total	24	100	24	100

Based on the data analysis result of cycles 1 and 2, it can be categorized that there was an increase in creativity after the implementation of the Treffinger model assisted by Color card media. Based on the results of the data analysis cycle 1 and cycle 2, it can be categorized that there is an increase in creativity after the Treffinger model is applied with the help of Color card media. The average score of students' creativity in the first cycle was 55.47, an increase of 24.53% in the second cycle to 80.00. Referring to the data on student creativity during the learning process which was measured using activity observation sheets and test sheets, it showed an increase in scores from cycle 1 to cycle 2. These data indicate that the application of the Teffinger model assisted by color card media supports the creativity of class VIII3 junior high school 1 Parepare students in learning mathematics.

The learning activity through the Treffinger model assisted by color card media has increased from cycle 1 to cycle 2. The increase in student activity means that learning mathematics with the Treffinger model with the help of Color card media can support students' creativity during the learning process. This is related to Handayani (2020) who stated that the Treffinger model facilitates the creative learning process and Wirahayu (2017) who stated that the Treffinger model is a way to conduct creative learning through levels started with basic elements to more complex creative functions.

The indicators of creativity used in this research; are fluency, flexibility, originality, and elaboration are important aspects and relevant to the objective of the research. Because in mathematics learning must be developed mathematical creative thinking skills, it is the ability to solve mathematics problems creatively. Mathematical creative thinking skills are needed as a solution to the assumption that mathematics is difficult to be learned and understood because students with sufficient mathematical creative thinking skills will find mathematics a fun and challenging lesson (Virliani, et al, 2019).

The result of the observation and the test conducted on the subject of the research showed that the Treffinger model that was used during the learning process created a new learning atmosphere and fun for students because it used color card media. The use of cards as learning media, especially in mathematics learning has an important role if it is interactive, as explained by Julianus, et al (2017) that interactive learning media are useful to make learning more varied.

The Treffinger model assisted by color card media can help students to think creatively in solving problems, assist students in mastering the concepts of the material being taught, and provide opportunities for students to show their potential abilities. This model also requires the teacher’s ability to assist students in developing fluency and flexibility in creative thinking, encourage creative ideas, and develop real and complex problem-solving skills. This is related to the research of Ndiung (2020) that the Treffinger model more effective to increase students’ creative thinking skills than conventional learning models, and Darminto (2013) concluded that the implementation

of the Treffinger learning model was significantly affected the increase of mathematical problem-solving abilities. Therefore, Darminto (2013) also stated the important stages in the Treffinger model, including 1) accommodating new ideas and finding many ways to solve the problem; 2) using creative ideas that involved the thinking and feeling process; using feeling and creative thinking for problem-solving. These steps are reinforced by Ndiung (2019) who explains that this Treffinger shows the link between cognitive and affective skills in encouraging creative learning, which aims at higher order thinking processes. The Treffinger model assisted by color card media can also increase creativity, it was proven by the increase of students' creativity from cycle 1 to cycle 2. The increase in creativity means that it is effective to learn through the Treffinger model assisted by color card media.

▪ CONCLUSION

The Treffinger model assisted by color card media helps students to think creatively in solving the problem, assists students in mastering the concepts of the material being taught, and provides opportunities for students to show their potential abilities. Besides requiring students' creativity, this model also requires to teacher's ability to help the students to develop their fluency and flexibility in creative thinking, encourage creative ideas, and develop real and complex problem-solving skills. The result shows that the Treffinger model assisted by color card media can increase students' creativity. This is indicated by an increase in the percentage of activity with an average score of 24.74% from cycle 1 in the "fair" category (55.21%) to cycle 2 in the "good" category (79.95%), and an increase in test achievement by 24.53%.

The data from this study indicate that the Treffinger model assisted by color card media can support the creativity of class VIII3 students of junior high school 1 Parepare in learning mathematics. The results of this study can be used as consideration for the use of the Treffinger model in mathematics learning at the junior high school level widely, and can even be tested on research subjects at all levels of education using more interesting learning media so that the Treffinger model contributes to improving the quality of education.

▪ REFERENCES

Alexander, K. (2007). Effects Of Instruction In Creative Problem Solving On. Dissertation. Texas Tech University.

Anggraini, W., Maskur, R., Susanti, A., Suryani, Y., Safitri, W. D., & Susilowati, N. E. (2020). The Comparison of Concept Attainment Model and Treffinger Model on Learning Outcome of Al-Kautsar Senior High School Bandar Lampung. Journal of Physics: Conference Series, 1467(1).

Apriadi Adiansha, A., & Syarif Sumantri, M. (2017). The Effect of Brain-Based Learning Model and Creative Thinking about the Ability of Mathematics Concept of Elementary Students. American Journal of Educational Research, 5(12), 1195–1199.

Arikunto, S. 2012. Dasar-Dasar Evaluasi Pendidikan. Jakarta: Bumi Aksara.

Darminto, B. P. (2013). Improving the Ability of Students' Mathematical Problem Solving. Jurnal Pendidikan Matematika dan Sains Tahun, 1(2), 101–107.

Dj Pomalato, S. W. (2019). Integration of Treffinger model to increase students' creative thinking and mathematics problem solving ability: an experimental study on 8th grade students in Gorontalo. In Sciences and Technology (GCSST) (Vol. 2).

Djemari. (2017). Penerapan Model Treffinger Dengan Media Colorcard Untuk Meningkatkan Pretasi Belajar Materi Operasi Hitung Bilangan Pecahan [Application of the Treffinger Model with Color Card Media to Improve Learning Achievement in Operational Material Counting Fractions]. Riset dan Konseptual, 2(1), 1-6.

Elvita, A., Johar, R., & Abidin, T. F. (2020). The development of learning tools using treffinger model assisted by GeoGebra to enhance students' creativity. Journal of Physics: Conference Series, 1460(1).

Ferdianto, F., & Alfiani, N. (2019). Digital module and treffinger model: Can improve mathematics ability. Journal of Physics: Conference Series, 1360(1).

Guilford, J.P. 1973. Traits of Creativity. Baltimore: Penguin Education Inc.

Handayani, R., Hajidin, Duskri, M., & Maidiyah, E. (2018). Development of learning tools using Treffinger learning model to improve creative thinking. Journal of Physics: Conference Series, 1088.

Handayani, R. (2020). Efektivitas Perangkat Pembelajaran Menggunakan Model Treffinger Untuk Meningkatkan Kemampuan Berpikir Kreatif [The Effectiveness of Learning Devices Using the Treffinger Model to Improve Creative Thinking Ability]. Jurnal At-Tarbawi, 12(1), 93-107.

Haylock, D.W. (1987). A framework for assessing mathematical creativity in school children. Educational Studies in Mathematics 18(1), 59–74.

Huda, M. 2013. Model-Model Pengajaran dan Pembelajaran. Yogyakarta: Pustaka Pelajar.

Huda, M. 2016. Model-Model Pengajaran dan Pembelajaran: Isu-Isu Metodis dan Paradigmatis (VII). Yogyakarta: Pustaka Pelajar.

Jalinus, N., Nabawi, R. A., & Mardin, A. (2017). The Seven Steps of Project Based Learning Model to Enhance Productive Competences of Vocational Students.

Juliantari, NP., Suharta, IGP., & Suarsana, IM. (2018). Peningkatan Kemampuan Pemecahan Masalah Matematika Siswa Kelas VII pada Materi Bilangan melalui Model Treffinger Berbantuan Masalah OpenEnded [Improved Mathematics Problem Solving Ability of Class VII Students on Numbers through the Treffinger Model Assisted with OpenEnded Problems]. Jurnal Riset dan Konseptual, 3(4), 438-448.

Lubis, S. S. (2018). Penerapan Pembelajaran Kooperatif Tipe Think-Pair-Share (TPS) Sebagai Upaya Meningkatkan Kreativitas Matematika Siswa Kelas X SMAN Angkola Selatan [The Application of Think-Pair-Share Cooperative Learning as an Effort to Increase the Mathematics Creativity of Class X Students of SMAN Angkola Selatan]. PeTeKa (Jurnal Penelitian Tindakan Kelas dan Pengembangan Pembelajaran), 1(2), 123-137.

Mawardino, M. (2019). The Influence of Treffinger Model on Creative Thinking Ability in Terms of Cognitive Style.

Muslimin, A. A., & Mutakallim, M. (2019). Kreativitas dalam Pembelajaran. TARBAWI : Jurnal Pendidikan Agama Islam, 4(01), 72–85.

Mustafa, S., Baharullah., & Vernita Sari. (2021). Gesture, Berpikir Spontan ataukah Manipulatif?. Makassar: Pustaka Almaida.

Mustafa, S., & Azizah, N. (2021). The Effect of Locus of Control on Learning Achievement during the Covid-19 Pandemic. Indonesian Research Journal in Education, 5(2), 450-461.

Mahmudi, A. (2008). Tinjauan Kreativitas Dalam Pembelajaran Matematika [Overview of Creativity in Mathematics Learning]. Phitagoras, 4(2), 37−49.

Munandar, U. (2014). Pengembangan Kreativitas Anak Berbakat. Jakarta: PT Rineka Cipta.

Nasir S., Mustafa, S., & Ahmad, M. (2022). Increasing Learning Outcomes Through Student Team Heroic Leadership Strategy and Provision of Structured Tasks. Edukasi: Jurnal Pendidikan dan Pengajaran, 9(1), 6-17.

Ndiung, S. (2019). The Treffinger Learning Model with RME Principles on Mathematics Learning Outcome by Considering Numerical Ability.

Ndiung, S., Sennen, E., Helmon, A., Jediut, M., Katolik, U., Santu, I., & Ruteng, P. (2020). Efektivitas Model Pembelajaran Treffinger dalam Menumbuhkan Keterampilan Berpikir Kreatif Peserta Didik Sekolah Dasar [The Effectiveness of the Treffinger Learning Model in Developing Creative Thinking Skills for Elementary School Students]. Jurnal Prisma, 9(2). 167-178.

Ndiung, S., Sariyasa, Jehadus, E., & Apsari, R. A. (2021). The effect of treffinger creative learning model with the use RME principles on creative thinking skill and mathematics learning outcome. International Journal of Instruction, 14(2), 873–888.

Nizham, H., Suhendra, S., & P., B. A. (2017). Improving ability mathematic literacy, self-efficacy and reducing mathematical anxiety with learning Treffinger model at senior high school students. International Journal of Science and Applied Science: Conference Series, 2(1), 130.

Pitta-Pantazi, D., Kattou, M., & Christou, C. (2018). Mathematical Creativity: Product, Person, Process and Press. In F. M. Singer (Ed.), Mathematical Creativity and Mathematical Giftedness. Springer International Publishing.

Putu, N., Ayuningsih, M., & Dwijayani, N. M. (2018). The Effect Of Treffinger Learning Model That Was Oriented By Local Wisdom Assisted Taired Task Toward Students' Mathematical Strategic Competence.

Ridwan, R., Ridwan, Supriyadi, E., & Nurmanita, M. (2019, July 22). The Effect of Treffinger Learning Model on Critical Thinking Ability of Students in SMK 3 Yogyakarta.

Sholeh, A., & Fahrurozi, F. (2021). Pendekatan Realistic Mathematic Education (RME) Berbasis Blended untuk Meningkatkan Kreativitas Matematika di Sekolah Dasar [Blended-Based Realistic Mathematical Education (RME) Approach to Improve Mathematics Creativity in Elementary Schools]. Jurnal Basicedu, 5(4), 1743–1753.

Syamsuddin, A., Sukmawati, Mustafa, S., Rosidah, & Ma'rufi. (2021). Analyzing the skill of writing a scientific article as a written communication skill of prospective elementary school teacher on learning mathematics. Journal of Educational and Social Research, 11(5), 88–98.

Treffinger, D. J. (1986). Research on Creativity. Gifted Child Quarterly, 30(1), 15–19.

Treffinger, D. J., & Isaksen, S. G. (2005). Creative Problem Solving: The History, Development, and Implications for Gifted Education and Talent Development. Gifted Child Quarterly, 49(4), 342–353.

Virliani, V., & Sukmawati, R. (2019). Upaya Peningkatan Kemampuan Berpikir Kreatif Matematis Siswa SMP Dengan Model Treffinger [Efforts to Improve Mathematical Creative Thinking Ability of Middle School Students Using the Treffinger Model]. Jurnal Pendidikan Matematika, 3(1), 17–23.

Wirahayu, Y. A., Purwito, H., & Juarti, J. (2018). Penerapan Model Pembelajaran Treffinger dan Ketrampilan Berpikir Divergen Mahapeserta didik [Application of the Treffinger Learning Model and Divergent Thinking Skills for Students]. Jurnal Pendidikan Geografi: Kajian, Teori, dan Praktek dalam Bidang Pendidikan dan Ilmu Geografi, 23(1), 30-40