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The Effect of Problem Posing Learning Assisted Origami Paper on Creative Thinking Skill Students

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ABSTRACT

The research aimed to see the effect problem posing to creative thinking skills and students achievement-assisted origami paper. Problem posing is used to increase students' skills not only to find knowledge accidentally but through the effort to find relationship knowledge they learn. The result from relationship knowledge was question or answer from their filed self so they understand the way to solve the problem using origami paper to attract student's attention and strengthen student understanding. Literacy study was used in this research. The data obtained were compiled, analyzed, and concluded to get conclusions about the effect of origami paper in the problem-posing learning to creative thinking skill students. Based on the results of this research using literacy studies from several research journals and articles show that problem-posing has the effect of origami paper on creative thinking skills students and students achievement.

Keywords: problem posing, origami paper, creative thinking

INTRODUCTION

Law Number 20 of 2003 concerning the National Education System, article 3 explains that National Education aims to develop the potential of students to become human beings who believe and fear God Almighty, have a noble character, are healthy, knowledgeable, capable, creative, independent and become citizens a democratic and responsible country.

This is confirmed by the Regulation of the Minister of Education and Culture Number 69 of 2013 that the 2013 Curriculum aims to prepare Indonesian people to have the ability to live as individuals and citizens who are faithful, productive, creative, innovative, and effective, and able to contribute to the life of society, nation, and society, state, and world civilization. From these policies, there are similarities in the goal of developing the creative potential of students that humans need in facing 21st-century life.

The ability to think creatively should be applied from an early age to deal with problems or problems both in learning and in everyday life. This is in line with Hanifah, et al. (2019) in their research which stated the importance of creative thinking for elementary school students, but the results of their research showed that students' creative thinking skills were still low. In fact, in the discussion, teachers in teaching mathematics still find it difficult to build students' creative thinking. Students working on the problem can only from the examples contained in the book. If the teacher makes more varied questions, the students will find it difficult to answer. The ability to think creatively will generate ideas, find interrelated relationships, create and carry out imaginations, and have many

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perspectives on various things. In learning creative thinking, it is very necessary to get a link between the concepts that have been learned and those that are being studied, so that they can solve the problems faced.

One of the efforts to overcome this problem can be done by learning problem posing in English, namely problem posing. "Submission of questions essentially asks students to propose or create new problems (questions) before, during or after solving the initial problems given" (Siswono, 2005). Amri (2013) states that "in principle, the problem posing learning model requires students to ask their own questions through independent problem learning". In line with this opinion, Kasiati (in Ompusunggu, 2014) stated that "one of the learning strategies is to use a problem posing model, which emphasizes students to make questions". Information that is processed in mind,

The development of science and technology is increasingly developing and is currently required to increase superior human resources. So the teacher is expected to be able to make their learning media. Therefore, teachers need to understand how to select and determine learning media so that the achievement of learning objectives in the teaching and learning process can be optimal. Haryanti (2014) in her research decided to use origami paper because she found problems in students' math learning activities because the teacher did not use the right media and was less varied. Origami media is a handicraft technique by folding paper so that it can produce a certain shape that gives meaning, which really requires coordination between eyes and hands, neatness, accuracy, and patience to do it carefully to create the desired shape. Origami is basically a world of creativity. There are many forms and models of origami, both traditional and modern. If a student is already proficient in folding the paper, then he will make a folded shape according to his ideas. This means that children have learned to be creative to be able to produce other forms. The selection of appropriate media in the learning process and the use of appropriate learning methods to improve students' creative thinking skills, in the end, is the achievement of student learning outcomes after participating in the learning process and showing the level of student understanding. Sudjana (2013) explains that student learning outcomes are abilities that students have after receiving their learning experiences. Student learning outcomes must be evaluated by the teacher to know the extent to which students have performed as expected

MATERIAL AND METHODS

The research method is a way to obtain data with specific purposes and uses. Sugiono (2009) states that the research method is a scientific way to obtain valid data to be able to find, develop, prove, certain knowledge so that in turn it can be used to understand, solve and anticipate problems in the field of education. The research method used is to use reviews from several journals. Melfianora (2021) explained that research with literature studies is research that has the same preparation as other research but the sources and methods of data collection are by taking secondary data by reading, taking notes, and processing research materials then compiled, analyzed and concluded. Embun in Melfianora (2021), what is meant by library research, is research that is only carried out based on written work, including research results that have been or have not been published.

The literature study in this study is to examine several journal articles to determine whether there is an effect of using origami paper on the problem posing learning method on creative thinking skills and student learning outcomes.

Table 1. The journals that will be reviewed in this study

No.	Title of Researcher	Peneliti	What is being reviewed
1.	Pembelajaran Problem Posing Untuk Meningkatkan Kemampuan Berpikir Kreatif Siswa	Tafsillatul	Analyzing Problem posing in creative thinking
2.	Meningkatkan Kemampuan Siswa Pada Aspek Berpikir Kreatif Matematika Melalui Pembelajaran Problem Posing	Mahirah	Analyzing critical thinking in problem posing
3.	Upaya Meningkatkan Kreatifitas Anak Menggunakan Media Kertas Origami	Salis	Analyzing children's creativity with the help of origami paper
4.	Penerapan Model Problem Posing Untuk Meningkatkan Kemampuan Berpikir Kreatif Dalam Pembelajaran Matematika Sekolah Dasar	Larasati	Problem Posing to improve critical thinking skills
5.	Pengaruh Pendekatan Pendidikan Matematika Realistik Berbantuan Origami Terhadap Hasil Belajar Siswa Matematika Siswa Kelas V SDDI Desa Leas Kecamatan Tejakula tahun Pelajaran 2013/2014	Putra	The effect of origami on student learning outcomes
6.	Teaching and learning through mathematical problem posing:commentary	Lyn	The importance of problem posing for learning
7.	Use of origami in mathematics: An Exemplary Activity	Kogce	The use of origami in creative thinking

RESULTS AND DISCUSSION

Based on a study of several journal articles that students in Indonesia are still very low in creative thinking skills which are taken based on observation, interview, and test data. As stated by Asriningsih (2014) that based on the results of observations and interviews about the conditions of learning mathematics in high school classes, it shows that students' creative thinking skills are very low with indicators including that most students can only work on questions of the same type as given by the teacher and are unable to find another alternative solution to a problem.

Whereas Larasati (2019) in the results of his preliminary research study revealed that student score data in mathematics showed that students' creative thinking skills were still low, even no one was in the very creative category, then 20.68% were creative and 24.31% of students were not creative.

Based on a background study of several research articles on the low ability of students to think creatively, they use solutions to use approaches and problem posing learning methods where they think these approaches and methods can be used as alternatives to overcome the low ability of students to think creatively as stated by Arsiningsih (2014) the problem posing method gives students freedom of thought so that students are expected to develop their reasoning, one of which is by making their own questions or modifying their own questions. It is different with Larasati (2019) who made a solution decision to solve the problem of low student creative thinking in his research by looking at the success of

previous research in overcoming low creative thinking skills, namely by using problem posing.

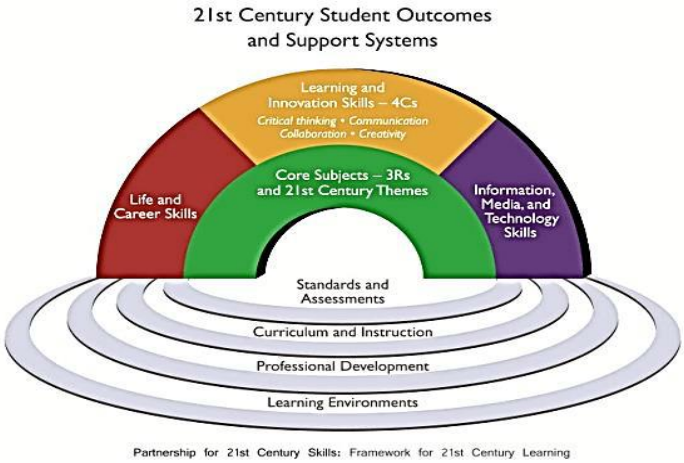
Lyn (2020) explained that the importance of problem posing from the perspectives of teachers and students which was carried out through a study of several articles and questionnaires, then it was concluded that the application of problem posing can significantly increase knowledge and understanding, thinking skills, serve students according to various abilities, sharpen structure and mathematical concepts. From the description of these conclusions, it can be ascertained that problem posing is appropriate to be used to improve students' creative thinking skills with different abilities so that in learning activities students can make problem submissions in the form of questions and their answers according to their abilities to be given to other students. From these basic things, it becomes the foundation for students to be bolder and more varied in posing problems and their answers at the next stage so that students' creative thinking skills will be sharper.

Creative thinking is one of the high order thinking skills (hots) that is currently being applied in education in Indonesia to face the global challenges of the 21st century where steps that can be taken are to develop thinking skills through habituation in the learning process. This is in line with Haryanti (2019) who emphasizes thinking skills to be the core in the learning process so that students have the competence to solve the complexity of problems encountered in the challenges of the times. Hanifah (2019) from the results of interviews with the teacher in his research explained the importance of creative thinking to be taught but in learning activities, it cannot be taught maximally because the teacher focuses more on cognitive assessment and has little attention to student learning activities which will lead to the creative thinking process. For this reason, learning activities are needed to accelerate the success of student's creative thinking skills with a problem posing approach model as done by Purnamawati (2017) in her research using the problem posing pre-solution type where students make questions and answer based on statements given by the teacher then students create in the form other questions and answers. In this creative process students are expected to use other sources such as modules and the internet. The application of the use of the problem posing method to improve students 'creative thinking skills has also been proven successful by Diyanah (2018) in his research which states that there is an increase in students' abilities in the creative thinking aspect through the problem posing learning model based on the calculation of the n-gain test which is 0.32 in the medium category.

Silver (1994), the clarity between problem posing and creativity is very evident from the fact that problem posing activities have included experimental designs to identify individual creativity. Problem posing has been seen as a characteristic of creative activity or extraordinary abilities.

The ability to think creatively is very important as a skill or life skill where students are expected to be able to understand problems quickly and be able to come up with solutions that are useful as provisions for the era of the industrial revolution 4.0. This is in line with the explanation by Mardhiyah et al. (2021) that in the 21st century, not only relying on knowledge but skills is also an important component needed in various fields of life. In the context of 21st-century learning, the development of thinking skills, especially higher-

order thinking, become a reference for the optimal learning process. The development of high-level thinking is also the basic concept in the 2013 Curriculum in Indonesia which adapts 21st-century learning based on a partnership for 21st-century learning.



From the picture above we do not close our eyes to the information, media, and technology skills. As teachers, we must also provide students with media use skills, especially in learning activities where we know that the role of media in learning is very important as an intermediary for the entry of information from teachers to students.

Rahma (2019) said that in his research on media selection, it is essentially one of the components of the learning system for interaction between teachers and students so that media selection must be adjusted to the needs and conditions of students, whether it is available in school according to the planned learning objectives and what is the price. affordable. Origami paper is rectangular paper with each side the same length and has one color on the side (Anisah: 2000). Kogce (2020) conducted a study on the usefulness of origami in mathematics learning to 32 students who were taking a mathematics course with origami at the end of the 2017-2018 semester. The results of the case study research analysis show that teaching mathematics with origami will make a positive contribution to learning mathematics. As we all know, everyone who holds origami paper will make reflex movements to fold the paper. That's where creativity will emerge. This is the reason for using origami paper as a trigger for students to think creatively in learning mathematics.

Origami paper in several studies has an important role as a fun communication medium between teachers, students, and parents if applied with the right learning methods. The use of origami paper can be used as an intermediary in the problem posing learning method, wherein problem posing learning activities there are student activities to present, shape, and create problems from examples given by the teacher. Setiawan (2017) in his research results stated that the use of origami paper media can clarify the meaning of learning so that students can understand the learning objectives well. Khoiriyah (2019) in his research concluded that although not all students are good at folding origami paper, it can be seen that children who have a high level of creativity will always make new things and always try other new things, always innovating to develop their imagination as a form. creativity from what has been taught by the teacher. Manurung (2020) concludes that the results of his research hypothesis test on the ability to think creatively with mathematics learning outcomes have a linear regression equation which means that each increase in one

score of creative thinking skills is followed by an increase in learning outcomes scores, and thus there is a positive contribution between creative thinking skills and results from the study.

Nurrita (2018) in his journal explains that using learning media can improve the quality of learning, especially student learning outcomes where students are involved in the learning process as subjects who have the opportunity to develop their potential and creativity. Putra, et al (2014) there are significant differences in mathematics learning outcomes between students learning with the help of origami paper and conventional learning without the help of media. While learning outcomes are not only achieved with instructional media but are also influenced by the use of appropriate learning methods, one of which is problem posing as suggested by Christidamayani, et al. (2020) based on the results of comparisons between the experimental class using the problem-posing method and the control class which does not use the problem. The problem-posing method uses a quasi-experimental research design with a t-test on the pre-test and a u-test on the post-test with exposure to the test results table. There is no significant difference in learning outcomes between students in the experimental class and the control class at the time of the pre-test. There is a significant difference in learning outcomes at the time of the post-test where the experimental class students who apply the problem-posing learning have better learning outcomes than the control class students who do not use the problem-posing method in their learning activities.

CONCLUSION

Creative thinking is one of the skills that students must have in the face of the era of globalization and the era of the very fast industrial revolution 4.0. Teachers are expected to give more freedom to students to be more creative in solving problems, appreciating every result whether it is right or wrong. The use of appropriate and fun media in learning makes students more interactive, happy, time-efficient, changes the role of teachers to be more positive and productive and learning is more active and less monotonous. Student learning outcomes also improve with the use of appropriate media.

Likewise, this study concluded that the use of origami paper in the problem-posing method based on a study of several journal articles described the success of creative thinking skills and student learning outcomes. In the end, researchers in the field discussed the effects of using origami paper in problem-posing learning on students' creative thinking.

REFERENCES

[1] Amri, Sofan. 2013. Pengembangan & Model Pembelajaran Dalam Kurikulum 2013. Jakarta: PT. Prestasi Pustakarya.
[2] Anisah, Nur. 2000. *Mahir Membuat Origami Bentuk Binatang*. Jakarta : Demodia.
[3] Asriningsih. Mufida. Tafsillatul. 2014. Pembelajaran Problem Posing Untuk Meningkatkan Kemampuan Berpikir Kreatif Siswa. Gamatika. Vol. 1.
[4] Christidamayani.Puri. Agatha, & Kristanto. Dwi. Yosep. 2020. The Effects of Problem Posing Learning Model on Students Learning Achievement and Motivation. IJOLAE. http://journals.ums.ac.id/index.php/ijolae.
[5] Diyanah. Mahirah, dkk. 2018. Meningkatkan Kemampuan Siswa Pada Aspek Bepikir Kreatif Matematika Melalui Pembelajaran Problem Posing. Jurnal Elektronik Pembelajaran Matematika. Vol. 5, Hal. 163-172. http://jurnal.uns.ac.id/jpm.
[6] Fajri. Muhammad. 2017. Kemampuan Berpikir Matematis Dalam Konteks Pembelajaran Abad 21 Di Sekolah Dasar.

Lemma. Vol. III, No. 2.
[7] Hanifah. Wardatul, dkk. 2019. Creative Thinking Skills in Science Lessons in Elemanty Schools. Advences in Social Science, Education and Humanities Reserarch. Vol. 397. http://creativecommons.org/licences/by-nc/4.0/
[8] Haryanti. Dwi. Yuyun, Saputra. S D. 2019. Intrumen Penilaian Berpikir Kreatif Pada Pendidikan Abad 21. Jurnal Cakrawala Pendas. Vol. 5, No. 2.
[9] Haryanti. Rica, dkk. 2014. Peningkatan Aktivitas Pembelajaran Matematika Dengan Menggunakan Media Kertas Origami. Jurnal Pendidikan dan Pembelajaran Khatulistiwa. Vol. 3, No. 6.
[10] Khoiriyati. Salis, & Maharintan. B. 2019. Upaya Meningkatkan Kreatifitas Anak Menggunakan Media Kertas Origami. Jurnal Betii.
[11] Kogce. Davut. 2020. Use of origami in mathematics: An Exemplary Activity. Asian Journal of Education and Training. Vol. 6, No. 2.
[12] Larasati. Retno. Dewi, dkk. 2019. Penerapan Model Problem Posing Untuk Meningkatkan Kemampuan Berpikir Kreatif Dalam Pembelajaran Matematika Sekolah Dasar. Jurnal Inovasi Pendidikan Matematika. Vol. 7, No. 7.
[13] Lyn. 2020. Teaching and learning through mathematical problem posing:commentary. International Journal of Educational Research. Vol. 102
[14] Manurung, S.A. dkk. 2020. Pengaruh Kemampuan Berpikir Kreatif Untuk Meningkatkan Hasil Belajar Matematika di Sekolah Dasar. Jurnl Basicedu. Vol. 4, No. 4. http://jbasic.org/index.php/basicedu.
[15] Mardhiyah. Hanifah. Rifa, dkk. 2021. Pentingnya Keterampilan Belajar di Abad 21 Sebagai Tuntutan Dalam Pengembangan Sumber Daya Manusia. Jurnal Pendidikan. Vol. 12, No. 1.
[16] Melfianora. Tanpa tahun. Penulisan Karya Ilmiah dengan studi Literatur. https://OSF.io. Diunduh tanggal 18 Mei 2021.
[17] Nurrita, Teni. 2018. Pengembangan Media Pembelajaran Untuk Meningkatkan Hasil Belajar Siswa. Misykat. Vol. 3, No. 1.
[18] Rahma, F I. 2019. MEDIA PEMBELAJARAN (kajian terhadap Langkah-langkah Pemilihan Media dan Implementasinya dalam Pembelajaran bagi Anak Sekolah Dasar. PANCAWAHANA: Jurnal Studi Islam Vol.14, No.2.
[19] Peraturan Menteri Pendidikan dan Kebudayaan Nomor 69 Tahun 2013 tentang Kurikulum 2013
[20] Purnamawati, dkk. 2017. Appication of Problem Posing Learning Model on Electrical Enginering Subject in SMK 2 Makasar. E Perintis.
[21] Putra, A.T.N, dkk. 2014. Pengaruh Pendekatan Pendidikan Matematika Realistik Berbantuan Origami Terhadap Hasil Belajar Siswa Matematika Siswa Kelas V SDDI Desa Leas Kecamatan Tejakula tahun Pelajaran 2013/2014. Jurnal Mimbar PGSD Universitan Pendidikan Ganesha. Vol. 2, No. 1.
[22] Sardi. 2019. Meningkatkan Kemampuan Berpikir Kreatif Matematika Siswa Pada Pokok Bahasan Bilangan Melalui Pendekatan Problem Posing. Jurnal THEOREMS. Vol. 4, No. 1, pp 29-41.
[23] Setiawan. Fajar. 2017. Upaya Meningkatkan Hasil Belajar Siswa Dengan Menggunakan Media Kertas Origami. Jurnal Bidang Pendidikan Dasar (JBPD). Vol. 2. http://ejournal.Unukama.ac.id/index.php/JPBD.
[24] Siswono, Tatag Y.E. 2005. Upaya Meningkatkan Kemampuan Berpikir Kreatif Siswa melalui Pengajuan Masalah. Jurnal Pendidikan Matematika dan Sains, (1), 1-9.
[25] Sudjana, Nana. 2013. Dasar-Dasar Proses Belajar Mengajar. Bandung: Sinar Baru Algesindo.
[26] Sugiyono. 2017. Metode Penelitian. Bandung: Alfabeta.
[27] Undang-Undang Nomor 20 Tahun 2003 tentang Sistem Pendidikan Nasional.