

## Teacher Creativity in Using Mathematics Learning Media in Higher Grades in the Independent Curriculum at SDN 21 Rejang Lebong

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### Abstract

This study aims to describe the creativity of mathematics teachers in using learning media in higher classes in the independent curriculum at SDN 21 Rejang Lebong and to describe the supporting and inhibiting factors of teacher creativity in using mathematics learning media in higher classes in the independent curriculum at SDN 21 Rejang Lebong. This study uses a qualitative research method, in which there are 4 steps in its implementation, namely: 1) observation, 2) documentation, 3) interviews, and 4) conclusion. Based on these research steps, it can be concluded that teachers at SDN 21 Rejang Lebong meet the criteria for creative teachers, namely being able to produce innovations in learning activities, being able to create graphic media in mathematics learning, teachers can also create fun learning experiences, teachers can also include students in all learning activities. In addition, there are supporting factors for teacher creativity in using mathematics learning media in the independent curriculum, namely: 1) the existence of a Learning Community (Kombel), 2) colleagues, 3) teaching tools from the Ministry of Education and Culture, and 4) the independent learning platform. Meanwhile, the inhibiting factors for teacher creativity in using mathematics learning media in the independent curriculum are: 1) student character, 2) student thinking ability level, 3) facilities and infrastructure, 4) costs, 5) how to make graphic media, and 6) limited time.

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## Introduction

Mathematics is one of the important subjects in elementary education. Mathematics has an important role in improving students' ability to think rationally, systematically, critically, and creatively (Maryanti & Qadriah, 2019). Mathematics is essentially inseparable from everyday life, but mathematics lessons are rarely of interest to students and are often difficult, boring, and uninteresting.

Research conducted by Bela, Arifin, and Tri in their journal entitled "Analysis of Factors of Low Interest in Learning Mathematics of Class V Students at SD Negeri 4 Gumiwang" in 2019 explained that one of the factors of low student interest in learning mathematics is the teacher's method of teaching which is still monotonous and rarely uses learning media during mathematics learning (Putri, Muslim, & Bintaro, 2019).

Learning media is very important for both teachers and students in the teaching and learning process. Learning media is a means of conveying material delivered by teachers to students, media can represent material clearly, interestingly, carefully, and in detail. When teachers do not use media when delivering material, students can interpret the material that is not in line with what the teacher means, this is because the students' perspectives and ways of responding to the teacher's explanation are different. The use of learning media in teaching and learning activities can be found in the Qur'an, the Word of Allah SWT., in Surah al-Nahl verse 44, namely:

بِالْبَيِّنَاتِ وَالزُّبُرِ وَأَنْزَلْنَا إِلَيْكَ الذِّكْرَ لِتُبَيِّنَ لِلنَّاسِ مَا نُزِّلَ إِلَيْهِمْ وَلَعَلَّهُمْ يَتَفَكَّرُونَ

Meaning: "(We sent them) with clear proofs (miracles) and scriptures. We sent down to you the Qur'an (Al-Zikr) that you may explain to mankind what has been sent down to them, so that they may reflect" (Ministry of Religion of the Republic of Indonesia, 2019).

A study conducted by Peni in 2022 entitled "The Relationship between Teacher Creativity in Using Learning Media and Student Learning Motivation in Science Subjects for Class V of Elementary School 20, Bengkulu City" showed that there is a relationship between teacher creativity and student learning motivation (Peni, 2022). This shows that teacher creativity in using learning media has a great influence on increasing children's understanding of the material. The more creative the teacher is in conveying the content of the learning, the easier it is for children to understand the material and form children's creative nature in learning, and can increase children's motivation in participating in learning.

The independent curriculum provides a wide space for teachers to develop their thinking in learning. Teachers are encouraged to create various learning aids that can attract students and create new things to improve student motivation and learning outcomes (Kebudayaan, 2022). Learning media that suit students' needs can make students understand the concept of mathematical material more easily and enjoyably. Teachers must understand the various characteristics of creative teachers, which are important aspects of creativity. According to (Sastradiharja, 2022, p. 11) there are 9 characteristics of creative teachers, namely: 1) can produce new innovations in learning activities, 2) Able to develop and create various teaching materials, 3) Can develop and create interesting learning media, 4) able to express various things in learning activities, 5) Can build fun learning, 6)

Able to develop learning strategies, namely methods, approaches, techniques and models, in learning stages in line with student needs and material character, 7) Able to provide encouragement to students both through words and actions, 8) Can include students in all learning activities, 9) Able to introduce students to various things that can help them understand learning materials.

Research on teacher creativity in using learning media has been widely conducted by several previous studies such as research conducted by (Rahmaniati, Septiana, & Setyawan, 2022) entitled *Teacher Creativity in Using Mathematics Learning Media for Grade IV*, (Awaliyah, Angraini, & Muhammad, 2023) entitled *Research Trends on Teacher Creativity in Mathematics Learning: A Bibliometric Review*, (Murni, Mudjiran, & Mirna, 2023) entitled *Analysis of Teacher Creativity and Innovation in Creating Elementary School Mathematics Learning Media*, (Rahma, Irawan, & Abdussakir, 2024) entitled *Teacher Creativity in Increasing Student Learning Interest in Mathematics Subjects at MI Tarbiyyatul Arifin*, and (Istiqomah, Lestari, Anggraeni, & Utami, 2023) entitled *Analysis of Factors Influencing Teacher Creativity in Developing Learning Media at SD Negeri 3 Brosot*. Teacher creativity in using learning media is very necessary to achieve the desired learning objectives, especially in mathematics learning which is a learning that is less popular with some students (Putri, Muslim, & Bintaro, 2019), therefore it is necessary to conduct research on teacher creativity in using mathematics learning media in high classes in the independent curriculum at SDN 21 Rejang Lebong.

## Method

The research was conducted at SDN 21 Rejang Lebong, located on Jalan Lintas Curup-Lubuk Linggau. The selection of this location was based on several factors, the first of which is its strategic location and easy access for researchers. Second, this school has become a pioneer in implementing the independent curriculum as a driving school for batch 1. The data sources in this study were high-class teachers (grades IV, VA, VB, VIA, and VIB), high-class students (grades IV, VA, VB, VIA, and VIB), and supplementary data such as school identity, documentation, and literature related to the research.

The method used in this study is a qualitative research method, which aims to describe the conditions of the object being studied through observation data, documentation, and interviews, and then conclusions can be drawn directly.

The qualitative research method is a research method used by researchers to research natural object conditions, where the researcher is the key instrument, the data collection technique is carried out by triangulation (combination), and the results of the research emphasize more on meaning (Sugiyono, 2019).

## Result and Discussion

This research was conducted at SDN 21 Rejang Lebong, located on Jalan Curup-Lubuk Linggau, Simpang Beliti village. This school has implemented the independent curriculum since 2020 under the leadership of Mrs. Mamik Uriastuti, S. Pd. The results of this study were obtained from the results of observations and interviews in high classes (Classes IV, VA, VB, VIA, and VIB), the interviewees were high class teachers and students in order to obtain data on teacher creativity in using mathematics learning media in the independent curriculum as well as supporting and inhibiting factors for teacher creativity. The results of this study were obtained by researchers during researchers in the field from December 4, 2024, to January 4, 2024. Researchers conducted observations from December 4, 2024, to December 15, 2024, and then conducted interviews on December 16-18, 2024.

From the results of observations that have been carried out by researchers, the school environment is quite good, starting from a fairly large land area, teachers' rooms, principal's rooms, and adequate classrooms, school fields, and school gates that are safe and pleasant for students. The social environment is also in good condition. This school is right in a residential area and right on the edge of the highway, but the level of hustle and bustle can still be tolerated. The facilities and infrastructure are fairly good because they cannot fully support the teaching and learning process, but the condition of the facilities in this school is well-maintained. And the implementation of learning activities is good, accompanied by decent classrooms with sufficient lighting and ventilation to be used in the learning process. Other observation results obtained by the researcher it was found that teachers were quite good at implementing mathematics learning. Teachers had used graphic learning aids, although only for some materials, and not all materials used graphic learning media. This was due to several things in the field.

Picture 1: Graphic media used by high school teachers



The results of the interview found that the creativity of high-class teachers in using Mathematics learning media in the Medeka Curriculum, namely: First, it can produce results in learning innovation by trying new and unique things in the classroom or in the teaching and learning process. Second, teachers can develop and create interesting learning by making their own tools in the teaching and learning process, teachers also realize the importance of using learning media and teachers always ensure that the tools used are in accordance with student needs. Third, teachers can build fun learning by creating exciting learning and creating student enthusiasm for learning, teachers also realize how important fun learning is. And finally, teachers include all students in the learning process. In addition, various supporting factors and inhibiting factors were found for the creativity of high-class teachers in using Mathematics learning media in the Medeka Curriculum, the supporting factors for teacher creativity include how teachers get learning ideas, ideas in making learning media, the advantages of the learning media used, and training that has been attended by teachers. While the inhibiting factors for teacher creativity include difficulties in implementing new learning, obstacles in involving all students in all learning processes, and weaknesses of the learning media used.

### **Teacher Creativity in Using Mathematics Learning Media in Higher Grades in the Independent Curriculum at SDN 21 Rejang Lebong**

a. Can produce new innovations in learning activities

The creativity of teachers at SDN 21 Rejang Lebong can produce new ideas in learning activities, teachers dare to try new things in teaching and learning activities to achieve the desired learning goals. The new things that teachers have tried in their classes are:

1. Applying the teaching at the right level learning method, the teaching at the right level learning method is learning that is adjusted to the level of student ability.
2. Applying differentiated learning, differentiated learning is learning that is adjusted to the interests and talents of students.
3. Utilizing the surrounding environment, in addition, teachers also utilize the surrounding environment, to create teaching and learning activities that are enjoyed and easy for students to understand.
4. Learning with children's experiences, Teachers apply learning related to things that students often encounter in their daily lives, so that students are expected to better understand the material being taught.
5. Utilizing technology, Teachers also utilize technology to find new ideas in learning, using social media or the internet to find and see new ideas in learning and then apply them in class. Occasionally using a projector screen in the learning process, but in using this projector screen has not been maximized because of the character of the students themselves.

6. Implementing ice breaking, the teacher implements ice breaking, in implementing ice breaking it is expected that students do not feel tense and bored. In implementing this ice breaking, the teacher creates a sense of comfort for new students to continue the learning process.

b. Can develop and create interesting learning media

Mathematics learning is often considered a difficult subject by some students, to achieve learning objectives a teacher is required to be creative in developing and creating interesting learning media. The media that teachers at SDN 21 Rejang Lebong use are:

1. Objects in the surrounding environment related to learning materials, SDN 21 Rejang Lebong has facilities and infrastructure for projector screen learning media, due to the lack of a sense of security in the surrounding environment, some teachers prefer to use media available in the surrounding environment for learning. In this case, teachers utilize the existing environment, teachers utilize used goods to be created into learning media, teachers also use concrete objects in the mathematics learning process, for example calculating the height and width of milk cartons, calculating using leaves, sticks, stones and introducing the shape of solid and flat shapes from objects around them. What this teacher does also teaches students that learning is not only based on books, but can be learned from anywhere, even from small things around them.
2. Projector screen, occasionally teachers use projector screens for learning, to create learning activities that are not boring and enjoyable and to introduce technology to students.
3. Cardboard/Paper, Teachers use cardboard or paper as learning media, teachers make various shapes from cardboard and paper to convey material and achieve learning objectives. For example, teachers make scoreboards from cardboard, make flat puzzles from cardboard, make cubes from cardboard, make illustrations of the solar system from cardboard, and so on.
4. Pictures, Teachers use pictures as learning media, teachers display pictures for objects that cannot be found in the surrounding environment and also objects that are less possible to be brought into the classroom.
5. Quizizz application, Teachers use the quizizz application in the learning process, teachers make this new innovation with the aim of creating interesting learning and introducing technology to students.

Here are the ways teachers at SDN 21 Rejang Lebong ensure that the mathematics learning media used are in accordance with students' needs and can attract students' attention, namely:

1. Initial learning assessment, in ensuring that the media used is in accordance with students' needs and attracts students' attention, teachers conduct an assessment at the beginning of learning. With the aim of finding out what students' weaknesses and needs are in teaching and learning activities, so that subsequent activities can make students interested and the media used is also in accordance with students' needs.
2. Mid-learning quiz, in ensuring that the media used is in accordance with students' needs and attracts students' attention, teachers also conduct mid-learning quizzes. With the aim of finding out the limits of children's understanding and strengthening children's memory related to the material presented.
3. Final learning assessment, in ensuring that the media used is in accordance with students' needs and attracts students' attention, teachers also conduct a final learning assessment. With the aim of finding out whether children's understanding has achieved the learning objectives or not, if it has achieved the learning objectives, it means that the learning media has been used effectively, but the learning objectives have not been achieved, the teacher evaluates his teaching methods, one of which is in the use of learning media.
4. Student response, in ensuring that the learning media used is in accordance with the needs and attracts students' attention, teachers can see from student responses during the learning process. If students are enthusiastic and active, it is certain that the media used is interesting enough. However, if students look bored and tired, the teacher evaluates the way they teach, one of which is in the use of learning media.
5. Learning materials. In addition, teachers also look at the material presented. Whether the material is in accordance with the learning media or not, teachers also look for learning media that are related to students' daily lives, this aims to make it easier for students to understand the learning material presented by the teacher.

In addition, teachers at SDN 21 Rejang Lebong have made their own tools, the tools that were made were:

1. Quizziz, this quizziz tool is a tool that is implemented with a game system. The teacher creates multiple choice questions on the quizziz website, then the teacher enters the names of the students who are taking part in the game, then each student has their answer barcode that can be printed. Each side of the barcode has the answers A, B, C and D, when the teacher gives a question, students choose the answer by rotating the barcode sheet according to their choice, and lifting the sheet so that it can be seen by the teacher. Then the teacher scans the students' answers using the cellphone camera from the quizziz website, from the direct scan the teacher can find out who has the correct answer and who is still wrong.

2. Flat shape puzzle, this tool is a puzzle in the form of a flat shape, and each puzzle has the name of the flat shape and the formula for finding its area and circumference.
  3. Cube, this tool is a cube made of cardboard, after being made it is measured using a ruler, then the area and circumference are calculated.
  4. Build a flat circle, this tool is a flat circular shape made of cardboard, which contains a formula for finding the area and circumference.
  5. Formula board for area and perimeter of flat shapes, this tool is a tool made of cardboard, which contains various shapes of flat shapes, names of flat shapes, and area formulas.
  6. Place Value, this tool is a printed image made using the Canva application, which contains the meaning of place value, its name and examples of its pronunciation.
- The advantages of SDN 21 Rejang Lebong teachers in using these learning media are: Students understand more easily and are enthusiastic in teaching and learning activities, Students understand the concept of learning mathematics more easily, foster students' creative nature in learning, and can motivate students to be more active in learning.

c. Can build fun learning

In the use of mathematics learning media, teacher creativity is an important part in creating fun learning. The ways in which teachers of SDN 21 Rejang Lebong create fun learning are: Creating learning that suits students' interests and talents, creating learning that suits students' needs, building closeness with students, and becoming a fun teacher.

In addition to creating fun learning, in using mathematics learning media, teachers of SDN 21 Rejang Lebong also maintain students' enthusiasm for learning from the beginning to the end of learning, namely by:

1. Building closeness between teachers and students, one way to maintain students' enthusiasm for learning from the beginning to the end of learning is to build closeness between teachers and students, because if students feel close, students will feel happy and there is no pressure in learning.
2. Providing motivation to students, providing motivation and enthusiasm to students can also build enthusiasm in students from the beginning to the end of learning.
3. Being a fun, enthusiastic and interesting teacher, before students are happy and enthusiastic about learning, teachers must also be interesting in learning by being fun and enthusiastic teachers. Teachers have an influence on their students' behavior, if teachers are not enthusiastic and not fun in teaching, then their students will also be infected and not enthusiastic and happy in learning.
4. Giving appreciation to students, giving appreciation is also a factor that can shape students' enthusiasm from the beginning to the end of learning, because students

still have a fear of being wrong, if their answers are not appreciated, it will reduce students' enthusiasm in learning activities.

The discussion described is relevant to the goals of teacher creativity expressed by Levanon (2021), that teacher creativity in creating fun learning can make the material easier to understand, and learning is not boring. Teacher creativity in involving students in all learning activities is also very important in using mathematics learning media. This is to achieve the desired learning objectives, the way teachers of SDN 21 Rejang Lebong involve all students in all learning activities, namely:

1. Giving questions to children who seem less focused. The teacher sees and observes students who seem unenthusiastic in learning. If the teacher finds students who are lethargic, unfocused, and unenthusiastic, then the teacher asks questions to students so that in future learning, students are more enthusiastic about learning.
2. Forming a group learning system, the teacher also forms group learning, where this learning consists of several students with different levels of understanding and absorption. The teacher combines several students with low, medium, and high levels of understanding in one group. What is expected is that students with high and medium levels of understanding can help each other students with low levels of understanding.

The benefits of SDN 21 Rejang Lebong teachers involving all students in the entire learning process are: Improving the quality of learning, Students are more active in learning, Achieving the expected goals, The learning process grows and develops, Students get to know each other's characters, and the formation of individuals who help each other.

From the discussion above, the creativity of SDN 21 Rejang Lebong teachers in using high-class mathematics learning media in the independent curriculum, is relevant and meets the indicators of teacher creativity conveyed by (Sastradiharja, 2022, p. 11), namely producing new innovations in learning activities, being able to develop and create interesting learning media, being able to build fun learning, and being able to include students in all learning activities.

### **Supporting Factors for Teacher Creativity in Using Mathematics Learning Media in Higher Grades in the Independent Curriculum at SDN 21 Rejang Lebong**

There are supporting factors in the creativity of SDN 21 Rejang Lebong teachers in using mathematics learning media in high classes, namely:

1. Learning Community (Kombel), SDN 21 Rejang Lebong teachers hold *Kombel* which is held every Monday, here teachers get various inspirations in making and using mathematics learning media.

2. Colleagues, SDN 21 Rejang Lebong teachers also support each other and work together in providing inspiration to make and develop mathematics learning media.
3. Teaching Tools from the Ministry of Education and Culture, Teachers can get inspiration in using mathematics learning media from teaching tools provided by the Ministry of Education and Culture, these teaching tools can be accessed by teachers through the Merdeka Mengajar website.
4. Merdeka Mengajar Platform (PMM), The Merdeka Mengajar Platform is a site or space provided by the Ministry of Education, Culture, Research, and Technology (Kemendikbudristek) with the aim of supporting the implementation of the Merdeka Curriculum. In this PMM, various types of independent training are provided that can be accessed by teachers to support teacher creativity in using mathematics learning media.

### **Factors Inhibiting Teacher Creativity in Using Mathematics Learning Media in Higher Grades in the Independent Curriculum at SDN 21 Rejang Lebong**

There are inhibiting factors in the creativity of SDN 21 Rejang Lebong teachers in using learning media in high classes, namely:

1. Student Character, the character of students who are too active in moving and too passive in thinking, and still have an attitude of fear of being wrong, inhibits the creativity of teachers in using mathematics learning media in high classes in the independent curriculum.
2. Student Thinking Power Level, the level of student absorption is also an obstacle for teachers, because the different levels of student thinking power cause the material presented to not be absorbed evenly by students.
3. Facilities and Infrastructure, the facilities and infrastructure at SDN 21 Rejang Lebong are still not optimal to support teacher creativity in using learning media. In addition, the level of security of the surrounding environment is also an obstacle for teachers in using facilities and infrastructure.
4. Cost, in the creativity of teachers in using learning media, SDN 21 Rejang Lebong teachers are hampered by the cost of making interesting learning media that keeps up with the times. This requires teachers to make better use of the existing environment.
5. How to Make and Limited Time. How to make learning media is also an obstacle for teachers at SDN 21 Rejang Lebong, sometimes, the desired form is different from what is imagined, and in making and implementing learning media, teachers are sometimes constrained by time. The learning time has finished, but the learning material has not been completely finished.

## Conclusion

After the researcher conducted research at SDN 21 Rejang Lebong, it can be concluded that the creativity of teachers in using mathematics learning media in high classes in the independent curriculum at SDN 21 Rejang Lebong can produce new innovations in learning activities by trying new things such as teaching at the left level learning methods, differentiated learning, utilizing the surrounding environment, learning with children's experiences, utilizing technology, and implementing ice breaking. Teachers are able to create graphic media in mathematics learning, such as area and circumference formula boards for flat shapes, place values, circle flat shapes, cubes, and puzzles of flat shapes. Teachers can also create fun learning by creating learning that is in accordance with students' interests and talents, and needs, building closeness with students, and being fun teachers. In addition, teachers can also include students in all learning activities by asking questions to children who seem less focused and forming a group learning system. In addition, there are supporting factors for teacher creativity in using mathematics learning media in the independent curriculum, namely: 1) the existence of a Learning Community (Kombel), 2) peers, 3) teaching tools from the Ministry of Education and Culture, and 4) the independent learning platform. Meanwhile, the inhibiting factors for teacher creativity in using mathematics learning media in the independent curriculum are: 1) student character, 2) student thinking ability level, 3) facilities and infrastructure, 4) costs, 5) how to make graphic media, and 6) limited time.

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