

The Use of Number Transformer Media in Learning Mathematics Material Recognizing Numbers in Elementary School Lower Grades

Penggunaan Media Transformer Angka dalam Pembelajaran Matematika Materi Mengenal Angka di Kelas Rendah Sekolah Dasar

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Abstract

This Best practice paper is to develop learning media in the Lower Grades in mathematics. This paper focuses on the initial class that has just entered a new school in elementary school, namely students between 7 until 8 years of age. The background in writing this paper is how the learning media used in grade 1 is learning while playing. Students in their first grade enter elementary school, and it must be a place they enjoy, as it is for children who have attended kindergarten or early childhood education. During kindergarten and early childhood, children are more inclined to play while learning. This was done to attract students in grade 1 to lose the feeling of playing at PAUD/Kindergarten. The author makes a learning media that is "Transformer Figures". Number transformers are used in students' numeracy learning in recognizing numbers by playing with paper folding made from used invitation paper. Media Transformer: this number is made from numbers 0-9 with different shapes. This is also very good for the psychomotor growth of children through their fingers with the art of paper folding. The use of transformer learning media makes learning mathematics interesting and fun. The presence of this number of Transformer learning media makes students in grade 1 very happy in learning.

Keywords: figure transformer, learning media, independent curriculum

Abstrak

Penulisan makalah Best practise ini adalah untuk mengembangkan media pembelajaran di Kelas Rendah pada mata Pelajaran matematika. Pada makalah ini berfokus pada kelas awal yang baru memasuki sekolah baru di SD yaitu Siswa pada tahap usia antara 7- 8 tahun. Latar belakang dalam penulisan makalah ini adalah bagaimana media pembelajaran yang digunakan di kelas 1 yaitu belajar sambil bermain. Siswa di kelas pertama mereka masuk kesekolah SD, harus menjadi tempat yang mereka senang seperti halnya bagi anak yang pernah duduk dibangku TK ataupun PAUD. Pada saat TK dan PAUD anak lebih condong bermain sambil belajar. Hal itu dilakukan untuk menarik siswa di kelas 1 untuk kehilangan rasa bermain pada saat di PAUD/TK. Penulis membuat sebuah media pembelajaran yaitu "Transformer Angka". Transformer angka digunakan pada pembelajaran numerasi siswa dalam mengenal angka-angka dengan cara bermain melipat kertas yang dibuat dari kertas undangan bekas. Media Transformer angka ini dibuat dari angka 0-9 dengan bentuk yang berbeda-beda. Hal ini juga sangat baik bagi pertumbuhan psikomotorik anak melalui jemari tangannya dengan seni melipat kertas. Penggunaan media pembelajaran transformer menjadikan pembelajaran menjadi menarik dan menyenangkan bagi pembelajaran matematika. Bagaimana media ini digunakan sebagai Media transisi bagi siswa PAUD ke SD kelas awal, agar mereka tidak kehilangan dunia bermainnya ketika mulai masuk ke sekolah dasar. Kehadiran media pembelajaran Transformer angka ini menjadikan siswa di kelas 1 menjadi sangat senang dalam belajar. Dapat dikatakan Media Pembelajaran Transformer angka ini sangat efektif digunakan untuk siswa kelas awal sebagai media pembelajaran transisi PAUD-SD pada materi mengenal angka. Selain dapat meningkatkan motivasi belajar siswa juga dapat membuat pembelajaran menjadi menyenangkan bagi siswa kelas awal. Hal ini dapat dilihat dari hasil wawancara dan respon positif siswa yang menyatakan sangat suka dengan pembelajaran setelah menggunakan media pembelajaran Transformer Angka.

Kata Kunci: media transformer, learning media, independent curriculum

1. Introduction

Students in the early grades who are in transitional classes from PAUD-SD have the same characteristics, namely learning while playing. The curriculum currently used is the Merdeka curriculum, which provides space for teachers to be creative and conduct fun learning according to the needs and characteristics of students in the classroom. (Kemdikbudristek, 2022). This independent learning curriculum is based on the ideals of Ki Hajar Dewantara, a national education figure who emphasized freedom to learn independently and creatively. This will produce independent students (Ardianti, 2022).

The independent curriculum is a curriculum that makes learning in favour of students. By taking into account various conditions, such as the nature of nature and the nature of the times that strengthen students' choice of learning. (Khoirurrijal, 2022). Curriculum implementation is a step that is not set by the government and is intended to help teachers, and educational institutions set goals for an independent curriculum. The capacity of educators and educational units is certainly different, but the implementation stage is designed so that educators can try to implement the Merdeka Curriculum with confidence. The confidence in question is the belief that educators can continue to learn and improve their ability to do their best in implementing the curriculum and, more importantly, in educating (Kemendikbudristek, 2022).

The independent curriculum is a curriculum that favours students. According to Ki Hajar Dewantara's philosophy, it pays attention to many situations, such as the nature of nature and the nature of the times, where students have their own uniqueness (Ultra Gusteti, 2022). Curriculum implementation is a government-mandated phase designed to assist teachers and educational institutions in developing objectives for an independent curriculum. The ability of educators and educational units varies, and this level of implementation is intended to give educators the confidence to try to implement the independent curriculum. Confidence is the belief that educators can continue to learn and improve their ability to implement the curriculum and, more importantly, to educate (Badan Standar, 2022).

In implementing the curriculum, education units must consider the achievement of students' abilities in certain situations. Education units or groups of education units must implement the curriculum based on the principle of diversification to address *learning loss* in special conditions. This must be adjusted to the conditions of the education unit, potential, and students (Kemdikbud, 2022). Students, as one of the components of education that is the topic of education itself, play an important role in successful learning. Primary school children are very diverse (Prasetyo, 2022). The diversity of learner skills in the classroom requires a teacher to think imaginatively to create learning that suits the needs of the students to achieve learning goals. (Halimah, 2023).

Especially for students in the early grades who are entering the transition from PAUD to SD, of course, experiencing new things and new conditions. For this reason, more action is needed from the Merdeka Curriculum, which brings students back to the world of children through learning that is fun according to the characteristics of the students. Teachers play an active role in creating a comfortable learning atmosphere according to the needs and characteristics of students in the lower grades. Playing is what students need at that age, by incorporating learning by learning while playing and introducing learning concepts such as in math learning. Often, math learning is considered a scary specter, so it becomes a scary learning so that math learning becomes fun for students.

Abstract mathematics requires a lot of attention and concentration, even a long time to learn symbols that are difficult to understand (Hartinah DS, 2013; Mustamid, 2015) (Masykur et al., 2017). Learning math in the lower grades should be fun, with simple concepts that encourage students to learn. One way to make learning fun is to use Learning Media. According to (Daryanto, 2017), why Learning Media be needed because a teacher must know in advance to learn abstract and concrete concepts from the learning media. It becomes a messenger or teaching poured into communication symbols needed in conveying material.

The use of this *number Transformer* learning media is to be applied to students in low grades, especially grade 1 elementary school. At the beginning of elementary school, students are already faced with literacy and numeracy learning by reading and writing. But before doing this, the teacher should introduce learning by playing in the early stages. The introduction of numeracy using learning media such as recognizing numbers, shapes and concepts. *Number transformers* are learning media made from invitation paper with shapes that are known and close by students. The *number transformer* itself will change shape from one shape to another. This is similar to the toys owned by learners that they play with every day, which are toys that require creativity in changing the shape of the toy into another form. Likewise, this number transformer can change shape from numbers into an attractive shape. The author makes this learning medium to show fun learning by playing so that students do not feel bored, as desired by the Merdeka Curriculum, and that learning is in favour of students. In the curriculum, there is a teacher's space, namely the teacher's freedom to create learning methods needed by students in the classroom. Moreover, there is a lack of interesting learning media in learning for low grades that introduce the concepts of learning materials.

The author makes a media, namely *Number Transformers*, to make learning meaningful for students and increase teacher creativity to find learning methods that are suitable for students on learning materials taught at school. The Transformer movie that we know is a cartoon movie that is often seen by children, and some of them even have the game. That is the game of changing the shape of numbers into a form of other objects. Here, it can improve students' psychomotor in thinking to change the shape of the number into a shape. The strength of the student's imagination can be seen from what is moved through his thinking hands and brain.

The formulation of the problem in this study is to see the feasibility of learning the Transformer Numbers media used by students in learning math material to recognize numbers. Based on the observation of the transition of PAUD-SD students who are very close to the world of play, the number transformation learning media is expected to be used for early-grade students when the PAUD-SD transition occurs. This is done when students enter the early grades of elementary school and do not lose their learning patterns when in PAUD.

2. Literature Review

Primary school education is significantly different from other higher levels of education, especially in terms of the learning process (Kiswanto, 2017; Zulvira, 2021). Learning in elementary school must take into account the components of child growth. Teachers in elementary schools must be able to create and manage a curriculum based on the characteristics of student development. This is also inseparable from the role of parents, especially during the PAUD-SD transition period. The role of parents here is needed as adults who guide the nature of children through good education to become children's capital to live and survive in the times. (Kadek, 2018).

The times have made developments in the world of education related to education science and technology. In order to create meaningful learning, in this case, the role of the teacher is needed in designing and developing learning based on the conditions of students as learning subjects and the cultural community where students live. (Astuti, 2021). The use of learning media with games in learning, especially in mathematics, can make children more active and increase children's creativity (Rohmatulloh. Alfian Lutfi, 2020).

3. Research Methods

Qualitative descriptive research was conducted in this study. This was done considering the age of the students, who were eight years old and was considered more practical. Data collection techniques with interviews, questionnaires/questionnaires that must be filled in by students in the form of simple essay questions and emotion-shaped questionnaires. Interviews were also conducted with students who were involved as subjects of this study, namely Grade 1 students at SD Negeri 11 Rantau Selatan. Likewise, interviews were conducted with class teachers and school principals about this transformer learning media. The observation technique in this study involves the location, participant samples, and activities in the use of learning media. Transformer Numbers *are* supported by documentary evidence.

The research procedures carried out are Observation, Planning, Action, and Reflection. In the initial stage, researchers made observations of student learning through teacher and student interviews. After obtaining the results of the observation, the researcher made learning improvements with lesson planning that would be carried out according to the needs and characteristics of the students. After compiling the plan, the researcher took further action by making simple learning media, namely Number Transformation, to make learning more meaningful and fun for grade 1 students at the beginning of the PAUD transition. Furthermore, reflecting on learning to see the results of learning carried out before and after using learning media. The results of the trial were then carried out by giving questionnaires and interviews on the media they used to see the practicality of a questionnaire on student satisfaction with learning.

4. Results and Discussion

Utilization of this number Transformer Learning Media is used in the lower grades, namely in grade 1, which is used in basic mathematics learning, as a material to recognize the concept of numbers. In addition to gaining knowledge and skills that can be seen from the results of use through the level of creativity of students in carrying it out. The participants in grade 1 are 26 students who will be the sample of this study. Some principals and teachers will respond to the use of this number of Transformer learning media. Concept learning is an inference about something based on the existence of characteristics with an object or an event related to humans (Sumiati & Asra, 2007). Learning that is done is problem-solving on an object that must be resolved by learners who can improve the psychomotor of learners through fingers. This increases the interest of learners. Interest has a big influence on a lesson that is studied seriously because there is an attraction for students when learning (Syaiful Bahri Djamarah, 2002).

One of the roles of learning media is for education, where the knowledge included in the media must involve students both cognitively and physically in the form of real actions so that learning can occur (Azhar. A, 2018). Learning media has several advantages, including the following: 1) learning media can clarify the presentation of messages and information in the learning process, 2) learning media can focus students' attention, which can arouse motivation for students, 3) learning media can overcome the limitations of the senses, space, and time, and 4) learning media can represent students' daily activities (Azhar. A, 2018).

With this number of Transformer learning media, learners are more likely to use their fingers and right brain. Learners' creativity will be seen in how to hold, fold, and rotate the transformer

media paper with the results of their thinking. Children who learn through active experiences such as sticking, turning, and folding will become meaningful learners when every consequence of action is scrutinized and interpreted (Hamdani, 2011). In general, learning media must be considered in the use of media in all teaching and learning activities because the media is utilized and directed to support student learning in an effort to understand the subject matter (Wina Sanjaya, 2006). From several explanations about learning media, the author can conclude that learning media must represent children's patterns that are in accordance with the characteristics and needs of students, which can increase students' attention so that they become motivated to learn. In line with the principle of learning in the Independent Curriculum which was rushed by Ki Hajar Dewantara that, education must be in favor of students. This means that the independent curriculum invites teachers to continue to make improvements and create learning that sees the benefits of learning for students. How is learning meaningful according to the characteristics and needs of students? (Khoirurrijal, 2022).

Example of Number Transformer Learning Media



Figure. 1. Transformer 0



Figure. 2. Transformer 1



Figure. 3. Transformer 2



Figure. 4. Transformer 3

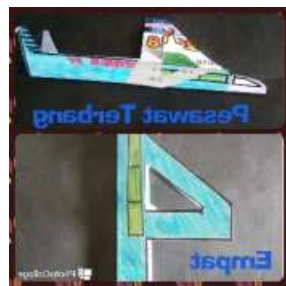


Figure. 5. Transformer 4



Figure. 6. Transformer 5



Figure. 7. Transformer 6



Figure. 8. Transformer 7



Figure 9. Transformer 8



Figure 10. Transformer 9

The implementation of this learning material in grade 1 of SD Negeri 11 Rantau Selatan received a positive response from students, teachers and the principal. This is evident from the findings of observations in the use of media and interviews with samples taken from the population in this study.

Based on the results of interviews conducted with grade 1 students about the use of Number Transformer learning media, it can be concluded as follows.

1. Learners feel that learning media transformers are children's toys like they have so that learning is more fun while learning.
2. Students feel interested in learning, so learning is very active in the classroom
3. Students are very happy with the learning provided by the teacher
4. Students are able to complete learning and understand the material with the learning media.

Based on interviews with students, learning mathematics by recognizing the concept of material using Transformer learning media makes learning more active. Students in grade 1 are very happy to learn while playing.



Figure 11. Using Number Transformer Media with Students

The results of interviews conducted with grade 1 teachers of SD Negeri 11 rantau Selatan towards the use of learning media Transformer numbers are as follows:

1. The teacher was pleased with the very active class, which made the class feel alive.
2. Number Transformer learning media is very easy to use from used goods so teachers do not spend too much money.
3. Number Transformer learning media can represent the mindsets of students who are still on the play world stage.
4. Number transformer learning media can attract students to learn mathematics.

According to interviews with teachers in the classroom, Transformer learning media is effortless and cheap, and it can reflect children's learning patterns based on the quality and requirements of students in learning.



Figure. 12. Receiving Teacher's Instruction in the Use of Number Transformer Media to Learners

An interview was also conducted with the principal of SD Negeri 11 Rantau Selatan. The results of the interview stated that as the principal, he is very happy with the updates in learning that are carried out, where learning can make students feel safe and comfortable and learning becomes interesting. Especially if the teacher makes the slightest changes as the principal really appreciates it, breakthroughs can be new things that can be shared with other teachers so that other teachers are also motivated to make changes and improvements to learning according to the needs of students in the classroom.

From the results of interviews conducted with the principal, he stated that he was very happy and appreciated teachers who wanted to do something new to improve learning changes towards a better direction by the characteristics and needs of students, where learning is meaningful for students. Likewise, the questionnaire results were given to students to see the practicality of learning media by looking at their learning satisfaction before and after using the media.

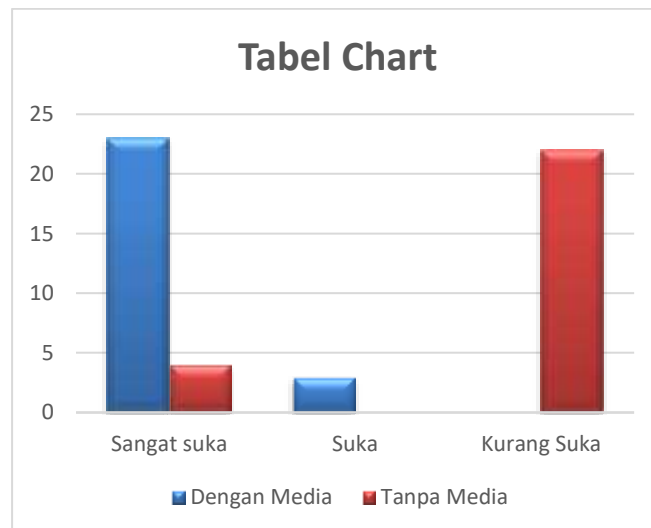


Figure. 13. Results of students' response to learning

From the chart, it can be seen from the questionnaire conducted on the practicality of the media before and after using the media. Before using the media, the level of satisfaction in learning consisted of only four students who stated that they really liked it, 0 liked it, and 22 disliked it. After using the Number Transformer learning media, 23 students stated that they really liked it, 3 liked it, and 0 disliked it.

5. Conclusion

This study describes the use of *Number Transformer* Learning Media in learning mathematics in the lower grades of elementary school. Researchers found something interesting about this *Number Transformer* learning media because this media is a media that is very close to toys at the age of students. So that makes this *Number Transformer* learning media very well received and happy by students. Learning media is made so that the materials used are easy to obtain and easy to make so that teachers do not spend too much or bother reproducing this transformer learning media because it is made from used goods, namely used invitation paper.

Learning in low grades, for example, in grade 1, which is the period of students in the transition from PAUD to SD, is learning for students more identical to playing. With this learning medium, the world of children's play is realized by learning while playing so that learning is more active and meaningful and can increase students' interest in learning comfortably. Teachers also feel it when teaching, and researchers see this from the results of observations made. It can be seen from the results of interviews and student responses that show positive results on the learning carried out.

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