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THE EFFECTIVENESS OF TRADITIONAL CONGKLAK GAME MEDIA IN NUMERACY LEARNING FOR GRADE 1 ELEMENTARY SCHOOL STUDENTS

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Abstract

This study aimed to determine the effectiveness of traditional congklak game learning media to improve the numeracy skills of elementary school students. In this study, researchers used a descriptive qualitative approach with a Realistic Mathematic Education (RME) learning model, which was carried out using field observation techniques and interviews with a research sample of 10 students. Data analysis using data reduction, data display, and conclusion of this analysis aims to show that there is a difference in the average numeracy ability of elementary school students before and after being given learning media in the form of traditional congklak games by selecting several students who have the same ability as a sample. The results of the research obtained showed there were differences in the numeracy ability of grade 1 elementary school students after and after being given the traditional game of congklak. This shows that traditional congklak learning media is effective for improving the numeracy skills of elementary school students.

Keywords: Realistic Mathematics, Numeracy Learning, Early Childhood and Elementary Education, Congklak Game

KEEFEKTIFAN MEDIA PERMAINAN TRADISIONAL CONGKLAK DALAM PEMBELAJARAN BERHITUNG SISWA KELAS 1 SEKOLAH DASAR

Abstrak

Tujuan dari penelitian ini adalah untuk mengetahui efektivitas media pembelajaran permainan tradisional congklak untuk meningkatkan kemampuan berhitung siswa SD. Pada penelitian ini, peneliti menggunakan pendekatan kualitatif deskriptif dengan model pembelajaran *Realistic Mathematic Education* (RME) yang dilakukan dengan menggunakan teknik observasi lapangan dan wawancara dengan sample penelitian sebanyak 10 siswa. Analisis data menggunakan reduksi data, display data, dan kesimpulan analisis ini bertujuan untuk menunjukkan ada perbedaan rata-rata kemampuan berhitung siswa SD sebelum dan setelah diberikan media pembelajaran berupa permainan tradisional congklak dengan memilih beberapa siswa yang memiliki kemampuan yang sama sebagai sampel. Hasil penelitian yang diperoleh terdapat perbedaan kemampuan berhitung siswa SD kelas 1 setelah dan sesudah diberikan permainan tradisional congklak. Hal ini menunjukkan bahwa media pembelajaran tradisional congklak efektif untuk meningkatkan kemampuan berhitung siswa SD.

Kata kunci: Matematika Realistik, Pembelajaran Berhitung, Pendidikan Anak Usia Dini dan Sekolah Dasar, Permainan Congklak

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INTRODUCTION

With the introduction of various educational programs from elementary to advanced levels, the concept of education is rapidly evolving. It makes sense that education is evolving and expanding (Rukmini, 2022). Currently, there are several hot topics in education besides the curriculum, one of which is the quality of education that can be seen and begins with learning and the learning process because there are important components in the learning process. These components play a crucial role in the learning process. They impact how well learning is conducted and help produce high-quality education that is also effective, efficient, creative, and innovative (Pajriati et al., 2023).

Learning is a process that transforms human personality, and this change is manifested as an increase in the quantity and quality of behavior, such as increased knowledge, skills, attitudes, habits, and other talents (Ekayani, 2021). Besides being done formally, such as in the classroom or at school, learning can also be done informally through experiences, activities, and habits we acquire outside the classroom. There is another terminology besides learning, which is teaching, which is a combination of two activities, learning and teaching. The term "learning" is a combination of the words "learn" and "teach," with the methodological learning process typically dominated by students while teachers deliver instructional teaching (Setiawan, 2017).

We often hear that teaching mathematics to children can be daunting. Even when they hear the term arithmetic, children do not like to study it because it conjures up images of something strange and frightening in their imagination. Moreover, most people only know mathematics as a subject driven by formulas, abstract, theoretical, and monotonous (Nurdiana & Widodo, 2019). Students' perception of uninteresting mathematics lessons causes them to pay less attention to what the teacher is presenting, making it harder for them to understand the lessons. In reality, there are interesting aspects of mathematics that have yet to be explored, and unfortunately, they are rarely introduced in the classroom, for example, through everyday games in (Lapele, 2022).

Therefore, to ensure that the intended learning goals are achieved when teaching mathematics, teachers must choose various approaches, tactics, models, and methodologies appropriate to the context and engage students more actively. When learning occurs, students need to be equipped with concrete and real learning to understand and memorize formulas. This will also help students remember the lessons taught because they learn real lessons they can relate to and find in their daily lives (Kamid, Syaiful, et al., 2021).

Education at other levels differs greatly from elementary education, especially in how learning is conducted. The developmental needs of elementary school students must be considered when teaching in this environment (Yantoro et al., 2021). Teachers in elementary schools must be able to plan and implement learning that considers their students' development. This is done to avoid disruptions in students' cognitive development that seem to be fundamental; failure to implement a learning process that is in line with students' development will result in the low achievement of learning goals (Zulvira et al., 2021). Some components help in learning, such as teaching materials and learning media (Ahmad and Mustika, 2019).

(Melaningsih et al., 2023) Elementary school children are usually between the ages of 7 and 11. According to Piaget, "Elementary school students are at the concrete operational stage (ages 7-11)," at this stage, students begin to understand the cumulative aspects of material, can combine groups of objects at various levels, and can think systematically about concrete objects and real events (Haryanti, 2017).

The solution to this problem is to make learning more active and enjoyable, one of which is by using traditional teaching media. Innovation in learning can be achieved by updating and improving the learning process. Anything that can communicate ideas and evoke emotions and motivation in students qualifies as learning media (Ekayani, 2021).

Traditional games are one of the most effective teaching tools for enhancing students' cognitive abilities during the teaching and learning process at the elementary school level. (Kamid, Sofnidar, et al., 2021) The term "traditional game" is derived from the words "game" and "traditional," where "game" refers to toys or other items used in games, and "traditional" indicates a way of acting, thinking, or behaving that is always governed by norms and traditions that have been passed down through generations. Traditional games have significant importance to ensure that the nation's future leaders become inventive, creative, and adept at practicing social life (Ulya, 2017).

(Mukhtadibillah et al., 2020) Researchers need to make innovative and enjoyable learning media efforts that vary, not boring, through traditional congklak games to make students happy and motivated. After conducting observations, the authors found problems in the learning process. Notably, constraints are faced, including the limited availability of educational games that cause children to be less developed in discovering and expressing themselves (Wulansari & Dwiyantri, 2021).

Congklak was used by ancient Javanese society to determine planting and harvesting seasons (Lacksana, 2017). The way to play congklak is almost the same in various regions; it involves 2 players and uses a congklak board and 98 seeds/shells. Games like Congklak can be used as a teaching tool. The congklak game media is attractive to students because it is presented as a game rather than a regular medium that can only be seen and heard. Counting numbers teach mathematics in this game media (Nurhayati et al., 2016).

The research problem statement is "How much interest do elementary school students have in the congklak game media for counting?" This research aims to describe how elementary school students learn to count using the congklak game media and develop teaching materials for counting numbers by teachers.

METHODS

The research method used in this study is qualitative research (Rabiah, 2018). Qualitative research aims to understand human or social phenomena by creating a comprehensive and complex picture that can be presented in words and reporting a detailed view. Qualitative research has various approaches, allowing researchers to choose from them to suit the object of their study by Yusanto, 2019, as cited in Fadli, 2021. Furthermore, in qualitative research, data analysis must be conducted carefully to ensure that the obtained data can be narrated well, resulting in worthwhile research findings (Yulianty & Jufri, 2020, as cited in Fadli, 2021).

This research was conducted at SDIT IQRA Dalung Serang. The study describes various facts and relationships between teachers and students during the learning process that were found during the research accurately, systematically, and meticulously. This research focuses on arithmetic learning in grade 1 of elementary school. It also discusses the issues teachers face in explaining mathematics lessons.

In this study, the research findings are presented qualitatively descriptively. The data used in this research were obtained from interviews, observations, and documentation. The subjects in this study were 10 grade 1 teachers and students. Data collection techniques used were direct observation, interviews, and documentation. Data validity checking was done through triangulation. Subsequently, data analysis techniques included data selection, data interpretation, and concluding.

FINDINGS AND DISCUSSION

This research was conducted at SDIT IQRA Dalung in November 2022. To provide a detailed overview of the conditions at SDIT IQRA, the researcher presents the following real conditions:

SDIT IQRA is located in Dalung, Cipocok Jaya, Serang City, Banten 42128, Indonesia.

Currently, the school's status is private under the auspices of the Darul Iqra Foundation in Serang City.

Using the traditional game of congklak in mathematics education as one of the media in the teaching and learning process for arithmetic is highly beneficial for students, including:

1. Facilitating the development of children's thinking (counting and reading), including understanding basic concepts like big and small, long, short, and more.
2. Training concentration. Educational games are designed to tap into a child's abilities, including their ability to focus. When playing congklak, children are required to focus on the seeds placed in each hole.
3. Playing congklak can certainly train children to interact socially and boost their self-confidence without losing the joy of playing.

The traditional congklak game media can be purchased in toy stores or online shops. The tools used include a congklak board and 98 seeds/shells. The rules and how to play congklak are as follows:

In the first part: Place 7 seeds in each small hole, leaving both players' "houses" empty (the large holes on the left and right sides of the board). Then, two players face each other and do a draw, with the winner choosing one hole and taking all the seeds from that hole (the side of their part). Players move clockwise around the congklak board and place one seed in each hole. When the last seed falls into:

- A hole with seeds: collect all the seeds and continue placing one seed in each hole (clockwise).
- An empty hole: the player "dies" (stops playing), and it's their opponent's turn to play.
- Their "house" (large hole): the player gets another turn and can choose any hole on their side to continue playing (just like at the beginning of the game).
- One of the holes in their own row: all the seeds in the opposite row (opponent's row) become the player's and go into their "house." The game ends when all the small holes are empty, and the winner is the player with the most seeds.



Figure 1. Congklak Board

RESULTS OF STUDENT TESTING

Based on observations and interviews with 10 students in grade 1 at SDIT IQRA during the implementation, the researcher observed that the children were enthusiastic when playing congklak and found it easier to understand mathematics lessons. Without realizing it, they were introduced to whole numbers and learned arithmetic while playing. During the interviews, they expressed happiness and comfort in learning. As a result, when the teacher explained the lessons, they could understand well and quickly.

RESULTS OF TEACHER TESTING

Based on interviews and comments from grade 1 teachers at SDIT IQRA regarding the traditional congklak game, it was found that this traditional game contains many values that can help nurture the characteristics of the nation's children, foster social skills, empathy, honesty, sportsmanship, and respect for others. Moreover, nowadays, children tend to prefer playing with gadgets over traditional games, which leads to limited face-to-face social interaction with their peers. In addition to its benefits for character and social development, children also quickly grasp mathematical concepts related to whole numbers and arithmetic through playing congklak. This means that not only the children enjoy playing congklak, but the teachers also find it enjoyable because the knowledge they impart is easily and effectively understood by the students.

CONCLUSION

Based on the results and discussions presented in the previous chapters, the following conclusions can be drawn:

1. Traditional games in mathematics, such as congklak, can be used to introduce whole numbers and enhance children's arithmetic skills.
2. The quality of the congklak game in mathematics falls into the category of being suitable for use as a learning medium.
3. The effectiveness of the congklak game in mathematics education can lead to the achievement of learning objectives.
4. The implementation of the congklak game in mathematics education can increase students' motivation to learn because it makes learning enjoyable and easy to understand.

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