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MONOPOLY GAME MEDIA AS AN EFFORT TO IMPROVE CALCULATION PROBLEM SOLVING ABILITY IN ELEMENTARY SCHOOL STUDENTS

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Abstract

This development research was motivated by the information that the student's average score on the material for solving calculation problems, was still below the Minimum Passing Criteria (70). One of the reasons is that the teacher does not use the media to teach the material. To overcome this problem, it is necessary to develop media in accordance with the material. The data collection instrument in this study is a checklist sheet with observation and test techniques. The data analysis technique used is quantitative and descriptive qualitative data analysis. The development model refers to a development model with the ADDIE approach which includes 5 stages, namely analysis, design, development, implementation, and evaluation. The conclusion of the results of this study is that the monopoly game media is declared valid after being revised by material experts and media experts with a score of 75% which belongs to the B criteria with the Good category. The effectiveness of this media is good in increasing the ability to solve calculation problems, by using the development of monopoly games for grade III students of SDN 4 Cakranegara, Mataram. Thus it can be concluded that the monopoly media learning media can improve students' abilities in solving arithmetic problems.

Keywords: Learning Media, Monopoly, Calculating Problem Solving

Abstrak

Penelitian pengembangan ini dilatarbelakangi oleh informasi bahwa nilai rata-rata siswa pada materi memecahkan masalah perhitungan termasuk yang berkaitan dengan uang masih di bawah Kriteria Kelulusan Minimun (70). Salah satu penyebabnya adalah guru tidak menggunakan media untuk mengajarkan materi tersebut. Untuk mengatasi permasalahan tersebut, maka perlu adanya media yang dikembangkan sesuai dengan materi.Instrumen pengumpulan data pada penelitian ini adalah lembar ceklist dengan teknik observasi dan tes. Teknik analisis data yang digunakan adalah analisis data kuantitatif dan deskriptif kualitatif. Model pengembangan untuk mengembangkan media monopoli mengacu pada model pengembangan dengan pendekatan ADDIE yang mencakup 5 tahap yaitu analysis (analisis), desain (desain), development (pengembangan), implementation (implementasi), dan evaluation (evaluasi). Kesimpulan hasil penelitian ini yaitu media pemainan monopoli dinyatakan valid setelah direvisi oleh ahli materi dan ahli media dengan skor perolehan 75% yang tergolong dalam kriteria B dengan kategori Baik. Keefektifan media dalam meningkatkan kmampuan memecahkan masalah perhitungan termasuk yang berkaitan dengan uang dengan menggunakan pengembangan permainan monopoli pada siswa kelas III SDN 4 Cakranegara, Mataram. Dengan demikian dapat disimpulkan bahwa media pembelajaran media monopoli dapat meningkatkan kemampuan siswa dalam menyelesaikan soal berhitung.

Kata Kunci: Media Pembelajaran, Monopoli, Pemecahan Masalah Hitung

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INTRODUCTION

According to Government Regulation Number 19 of 2005 concerning National Education Standards, one of the objectives of learning mathematics in elementary schools is that students have the ability to solve problems. To achieve this goal, basic competencies are needed. One of the basic competences of mathematics in class III elementary schools is "Solving calculation problems including those related to money" which is developed into indicators (Tyaningsih et al., 2020); (1) calculating the value of a group of rupiah currency in the form of math problems; (2) solve problems involving rupiah currency in everyday life; (3) displaying an honest attitude in playing monopoly games.

Grade III elementary school students are at a concrete operational development level where children will better understand the concept when observing or doing something as their own experience (Q. E. Dewi et al., 2019). By using this media, students will not feel that they are learning. Students will feel like they are playing and interacting with their friends. So that later students will learn without pressure and feel that learning is fun (Afifah, 2018). Through this media, learning that is carried out indirectly will activate students and develop students' thinking levels. This learning media is intended for grade III students. Fardani et al. (2018) creates learning media about rights and obligations in the form of monopoly games. According to Herdani et al. (2018) this monopoly media was made to make it easier for students to understand material about obligations and rights as well as to develop students' thinking levels. This is because the game of monopoly is a game that is familiar to children so that children already understand the rules and procedures for the game (Sari & Gunawan, 2018). In addition, the use of this media will make the process of teaching and learning activities more attractive to students so that it can foster student motivation to learn about obligations and rights.

Deviana & Prihatnani (2018) said, how to play monopoly is like an ordinary game. Students roll the dice and run the pawns. "If students get cards that contain material, students must deliver the material in front of the class" said Putri. "If the cards contain questions, students must discuss with the group the answers and present them in front of the class". If students are able to answer the questions, then they will get one star that is attached to the group star board that has been provided. According to him, this learning media is useful as a creative and fun learning medium, increases student enthusiasm in learning, facilitates the learning process so that students are able to understand their obligations and rights well, and can improve learning outcomes in students (Vingki et al., 2016).

Based on the results of interviews with class III teachers, the average score of students on the ability to solve calculation problems including those related to money in class III students of SDN 4 Cakranegara is still below the value Minimum Passing Criteria (70).While the results of field observations show the teacher does not use the media to teach the material. that, even though the media is an intermediary between teachers and students which is important in delivering learning material. Figure 1 are the results of a preliminary study which are displayed in graphic form.

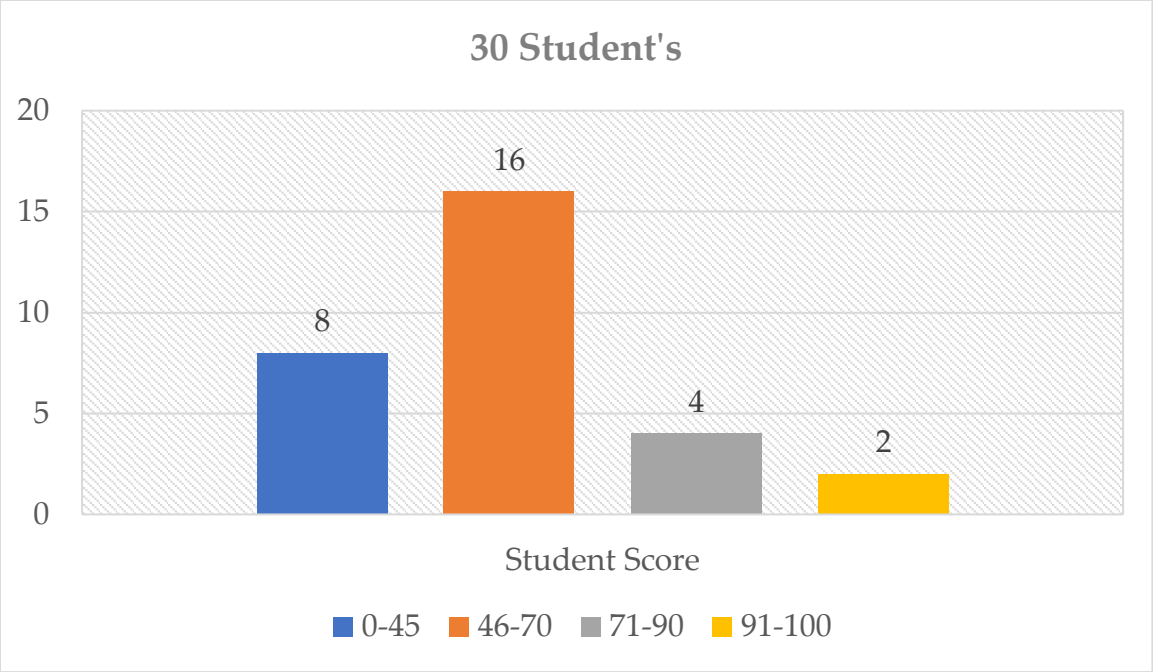

Figure 1. Preliminary Study Results

To solve this problem, it is necessary to have media that is in accordance with the material and characteristics of students, such as kinesthetic media in the form of monopoly games (Fitriyawany, 2013). Based on the above background, the problem can be formulated, namely how to develop monopoly game media for learning to solve calculation problems including those related to money in class III SDN 4 Cakranegara students, and how monopoly game media development products are based on validity, practicality and effectiveness in learning to solve calculation problems. including those related to money in grade III SDN 4 Cakranegara.

Based on the basis of the description above, the purpose of this study is to develop instructional media in increasing students' numeracy problem solving abilities. Researchers hope that the resulting media results can be taken into consideration by teachers in learning mathematics in schools.

METHOD

Dovelopment Model

The development model in this study is the ADDIE research and development (R&D) method proposed by Robert Maribe Branch in (Peranti et al., 2019). (Analysis) At the initial stage of this research begins by analyzing the conditions and situation of the research environment through observation and interviews with class III teachers of SDN 4 Cakranegara about learning. (Design) At this stage, the development of monopoly media is designed to be as attractive as possible by using tools, materials and supporting facilities in the form of printers, computers, banners, thick cardboard, white buffalo paper, colored buffalo paper, scissors. (Development) Media is made in accordance with a previously prepared design. The product design is then tested based on the opinions of experts and practitioners. Then it is used to revise the design (See Figure 2).

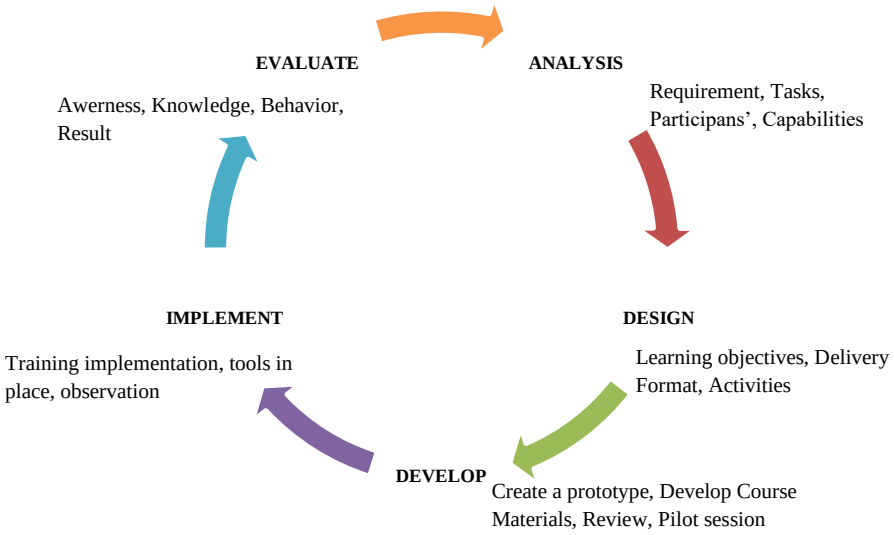

Figure 2. Develop Model Design (ADDIE)

After the design is revised, then the design is made into an initial product that is ready to be tested in the field. (Implementation) At this stage product trials will be carried out using 5 to 8 students and field trials with 30 students of SDN 4 Cakranegara, Mataram, which will be divided into groups with 5 to 8 members. (Evaluation) At the evaluation stage, data collection is carried out regarding whether or not the products that have been made with certain specifications are carried out through the monopoly game media validation sheet, the material validation sheet for solving problems involving money, and the comparison of students' pretest and posttest results.

Product Validation

The product being developed, namely the monopoly game, needs to be validated before being tested. The validators for developing this product are as follows.

1. Material experts provide advice based on the material contained in the monopoly game learning media with material experts.
2. Media experts provide advice on monopoly game media.

Pruduct Trials

In a limited trial conducted on 6 students who were randomly selected. Students will play monopoly game media with the teacher, the teacher acts as a bangkir (Ulfaeni, 2018). Whereas in the expansion trial the product trial was carried out on all third grade students of SDN 4 Cakranegara. Students are formed into groups, each group consisting of 6-8 students. Students take turns playing the monopoly game in turns for each group.

Data Collection Instruments

Data collection tools in research can be in the form of tests, questionnaires, interview guides, documentation, and checklist sheets (Dewi, 2019).

1. Instruments in the form of a checklist sheet are used to validate monopoly playing media, manuals on the use of monopoly game media, and material on monopoly games. This is done by a team of experts,
2. An instrument in the form of a test is used to measure the effectiveness of the monopoly game media in increasing the ability to solve problems, including those related to money.

3. Student response questionnaires are used to determine student responses to the practicality of monopoly game media used in mathematics learning. Meanwhile, the teacher response questionnaire was used to determine the teacher's response to the practicality of the monopoly game media used in mathematics learning.

In this study, the instruments were validated by testing the validity of the items in the instrument, then constructing them with material experts and media experts.

RESULTS AND DISCUSSION

Results

Monopoly learning media is one of the most famous board games in the world (Deviana & Prihatnani, 2018). The objective of the game is to take control of all the plots on the board through buying, renting and exchanging property in a simplified economic system. Each player rolls the dice in turn to move the pieces, and if he lands on a tile that is not already owned by another player, he can buy that tile at the price stated. If the plot has been purchased by another player, he or she must pay that player a fixed amount of rent. To play Monopoly, you need these equipment (Fitriyawany, 2013):

1) Pawns to represent players. In the Monopoly box there are ten pieces, namely hats, irons, dogs, warships, cars, carts, glasses, cannons, horses and shoes.
2) Two six sided dice.
3) Free title card for each property. This card is given to the player who buys the property. On the card is the property price, rental price, mortgage price, house and hotel prices.
4) Game board with tiles:
    a. 22 places, divided into 8 colored groups with two or three spots each. A player must master a color group before he can buy a house or hotel.
    b. 4 train stations. The player gets a higher rent if he owns more than one station. But no houses or hotels should be built above the station.
    c. 2 companies, namely the electricity company and the water company. The player gets a higher rent if he owns both. Homes and hotels may not be built on companies.
    d. General and Opportunity Fund Plots. The player who lands on this plot must take a card and execute the order on it.

Monopoly learning media is declared valid after going through a validation test by material experts and media experts. From the results of the material validation test, a total score of 75% was obtained with the "Good" category and criterion B, while the results of the media validation test obtained a total score of 75% with the "Good" category and criteria B.

All learning media are validated by the validator, namely the media development center. The validator also provides suggestions and comments on the learning media that has been made, namely to add sound effects to the video, and to the worksheets to explain more about the parts of the cut image so that students can draw more correctly, and the results of the validator can be seen in the table 1.

Table 1. The results of the assessment score of monopoly learning media

Validator	Question to-														Total Score
Center	1	2	3	4	5	6	7	8	9	10	11	12	13	14	
Development	9	12	8	13	8	12	9	11	8	13	11	12	11	10	147
Media	Average Score														4,21

Figure 2 shows that the evaluation of the validators related to the monopoly media developed has an average score of 4.2. So that the media can be said to be very valid for teachers to use in class.

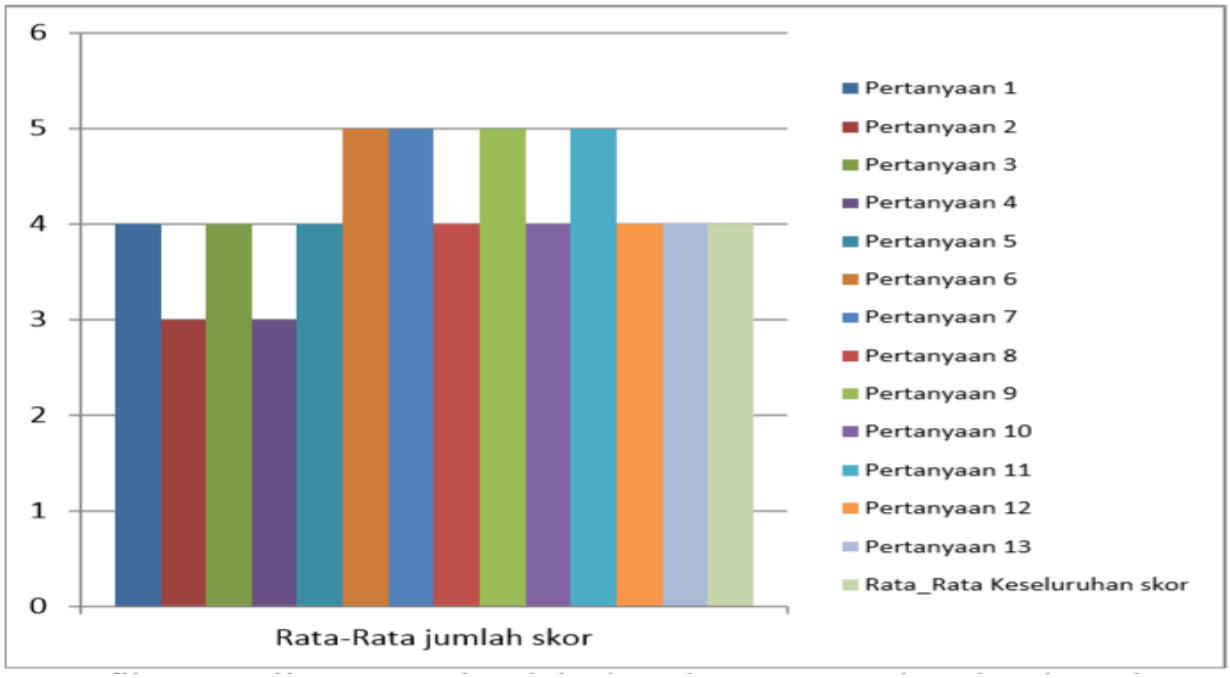

Figure 2. Product Validation Score Results

Discussion

The development of monopoly game media was declared effective in increasing the ability to solve calculation problems, including those related to money. This is from the students' pretest and posttest scores. The increase in the number of students who score above 75 (Minimum Passing Criteria) shows that monopoly media is successful. Based on the statistical analysis carried out, in this discussion the researcher will be the results of the data analysis that has been carried out. The results of data analysis showed that the test data used for the initial score in this study for the experimental class and control class came from the pretest scores. The initial value is subjected to a requirement test, namely a normality test and a two-averaged similarity test to determine whether the value is normally distributed and has the same initial ability or initial average. After doing these requirements, it turns out that the initial values of the experimental class and control class are normally distributed and have the same initial ability so that the initial values have met the requirements so that they can be continued to be treated. The learning outcomes obtained by students after the treatment (posttest) showed that the experimental class had an average of 75.81 with 12 of 16 students completing, while the control class had an average of 62.38 with 8 out of 16 students. In the

calculation of the learning outcomes of the experimental class students after being treated using the monopoly media assisted game method, the average score was 75.81 and the untreated control class only learned using the lecture method got an average score of 62.38.

The practicality of developing monopoly game media is considered very good, this is evidenced by the results of the acquisition of a score or final score of 84% in the "very good" category on a limited test. Meanwhile, in the expansion test, the final score is 77% in the "very good" category. The teacher response questionnaire data got a score or value of 90% with the category of media practicality "very good". Learning by using the game method through monopoly media can help students understand the concept of learning material well, students will be able to solve problems by thinking individually (Utami et al., 2019). In addition, students can also work well with their groups so that they can solve problems together from solving the problems they have solved. Learning using the game method assisted by monopoly media where students not only go to school to just sit listening to the teacher explaining the material but students must be actively involved in learning to be able to solve the problems given by the teacher (Rahadi et al., 2016). Learning using the game method assisted by monopoly media can make students accustomed to solving a problem both individually and in groups so that it can improve their cognitive abilities and can obtain maximum learning outcomes (Maulyda, 2018). So it can be concluded that learning using the monopoly media assisted game method is better than learning using only the lecture method and the monopoly media assisted game method is also able to increase student interest in learning so that students become more motivated in participating in the learning process and will have an impact on learning outcomes. good and satisfying (Rosyidah et al., 2020).

CONCLUSION

Based on the research results, it can be concluded that: (1) Monopoly game learning media can improve children's calculation problem solving skill's at SDN 4 Cakranegara; (2) Children at the primary school level are more interested in operational and active learning (Kinesthetic); (3) Children's numeracy skills can be seen from the improved results of the students' pretest and posttest.

The researcher also gave several suggestions, namely: (1) Teachers at the primary school education level should actively innovate in the use of more operational learning media for students; (2) Parents can also start training children to do simple numeracy activities as an implementation of learning activities at school; (3) further research may be devoted to a deeper descriptive analysis of the effect of operational learning media on changes in children's numeracy skills..

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