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APPLICATION OF MONOPOLY GAME MEDIA IN LEARNING MATHEMATICAL COUNTING OPERATIONS GRADE 3 MIM TALANG

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ABSTRACT
This study aims to describe how the application of monopoly game media in mathematical arithmetic operations learning in class III MIM Talang. This type of research is descriptive qualitative research. The research subjects were III grade students. Data collection techniques using interviews, observation, and documentation. The validity of the data using the method triangulation technique. After the collected data were analyzed using Miles and Huberman interactive analysis techniques. The results showed that planning mathematics learning by applying monopoly game media was carried out by preparing a lesson plan, monopoly game materials, and designing a series of monopoly game activities. The application of this monopoly game media received a positive response from students. Supporting factors for the application of monopoly game media to mathematical arithmetic operations include: the basic materials for making monopoly are easy to obtain and inexpensive, students actively participate, there is support from the school, and students feel like they are playing while learning. While the inhibiting factors include: class conditions that are not conducive because there are some students who are busy alone, students have difficulty answering the questions on the monopoly card, and time constraints. Solutions to overcoming these obstacles include: the teacher needs to recognize student characteristics, the teacher does ice breaking, students ask the teacher about difficulties answering questions, choose questions that are more focused and relevant to fit the existing time limit, and the teacher holds class sessions to help students who need understanding of the material.
Keywords: Game Media, Monopoly, Mathematics Learning, Count Operation

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PRELIMINARY

Mathematics learning is very necessary because it is related to the ability to fully understand mathematical concepts. Mathematics learning is the process of providing learning experience and knowledge to participants with a series of predetermined activities so that participants gain competence related to the mathematics material they have studied (Sahriani, 2022). Apart from that, by studying mathematics students can think in a structured, scientific way, using logic, critically, and can foster creativity (Marni & Pasaribu, 2021).

Mathematics is one of several subjects that some students find difficult. This assumption results in reducing the desire and motivation to learn in students in studying and digesting mathematical methods. In the learning process in class, mathematics is rumored to be complicated and gives a bad impression to some students, which is an obstacle for students in solving their difficulties related to mathematics (Salim, 2020).

If you pay close attention and scrutiny in the field, especially towards class III students at MIM Talang, based on the results of the researcher's observations when observing the learning process in class III, it was found that students had little interest in studying mathematics because they had difficulty processing multiplication and division. In the process of delivering material, children are not supported enough to develop their abilities. Most students are directed to understand mathematics by using formulas and are rarely taught to analyze the use of mathematics in their daily activities. Thus, when students are given questions that are different from the example questions, they will experience difficulties and be confused about how to solve them.

Students only think mathematics lessons are difficult, boring and confusing. Therefore, interesting learning media is needed for students, so that learning becomes fun so that mathematics lessons which are usually confusing and boring turn into an enjoyable situation. According to Arsyad (Oktaviani & Rahmayanti, 2021) media is referred to as an intermediary that functions as a very good regulator of relationships between students and learning content, media as forms of interaction means that can be manipulated, seen, heard or read.

One of the learning media that can be used in learning mathematical calculation operations is monopoly media. Monopoly media has a very important role in learning mathematical calculation operations for class III students at MIM Talang. Monopoly media is suitable for use in mathematics learning (Chanifah, et al., 2019), improve mathematics learning outcomes (Surur, 2021), and can improve students' ability to solve calculation problems (Maulyda, et al., 2020). Monopoly media can bring a practical dimension to learning. Through this game, students can develop a deeper understanding of mathematical concepts and overcome difficulties in understanding abstract material (Ulfa & Rozalina, 2019). Apart from that, monopoly media also stimulates active student involvement, promotes social interaction, and fosters skills in collaboration and communication (Sihotang, 2022).

Several previous studies that tested the effectiveness of monopoly game media in learning mathematics, one of which is research from Soegeng & Dewi, (2013) which

shows students' interest in learning games using monopoly-assisted media which has an effect on learning outcomes by 61.2%. It can be interpreted that the media-assisted monopoly game method is effective on the interest and learning outcomes of class 1 arithmetic operations material at Kedungsuren Kendal State Elementary School. Research from Sibuea & Handayani (2019) proves that the learning outcomes and learning interests of experimental class students (mathematics monopoly/Monotika) are different from the learning outcomes and learning interests of control class students. Likewise with research from Prayogo, et al (2019) concluded that the development of monopoly game media in mathematics learning, the material on addition and subtraction of numbers 1 to 500 has an influence on class II learning. Meanwhile research from Fajriah & Putra (2022) concluded that the game media MUTA (Monopoly Snakes and Ladders) is very valid to be applied as a Mathematics learning media in elementary schools on the material of integer counting operations.

The explanation above shows that several studies have been carried out on the application of monopoly game media in mathematics learning. The three studies above are quite relevant to prove that the application of monopoly game media in learning mathematical arithmetic operations can be used as a basis for further research. However, some of the previous research above used experimental and R&D research. This shows that research still needs to be followed up on the application of monopoly game media in mathematics learning using descriptive qualitative research.

Based on the explanation above, researchers are interested in analyzing the application of the monopoly game media in mathematics learning in class 3 MIM Talang arithmetic operations material. This research aims to describe the planning and application of monopoly game media in learning mathematical arithmetic operations, supporting and inhibiting factors, as well as solutions to obstacles to implementing monopoly game media in learning mathematical arithmetic operations.

METHODS

This type of research is descriptive qualitative research with a grounded theory design, namely a qualitative research method that uses a systematic set of procedures to develop a theory inductively about a phenomenon (Fathoni, 2023). This research was carried out at MIM Talang, Bayat District, Klaten Regency. The research time was approximately one month to observe students' learning process activities during three meetings.

The primary data source in this research is every word and action of the teacher and two class III students in implementing mathematics learning and is supported by information from the school principal. The school principal chosen as the research informant is expected to be able to provide views on the reasons for choosing monopoly game media, its possible impact on student learning and motivation, as well as perspectives on how the integration of the media fits into the curriculum and learning plans.

This research data was collected through interview techniques, observation and documentation. The researcher acts as a key instrument, namely the researcher as a data collector through observation, interviews and documentation, from these data the researcher then reduces or summarizes, selects the important things, after that they are displayed, namely presented in the form of descriptions, charts and graphs; The final step is data verification and drawing conclusions, while other instruments serve as support.

The validity of the collected data collection tools was tested using source triangulation and technique triangulation. The source triangulation technique was carried out by comparing the results of interviews obtained from teachers, class III students and school principals as a comparison to check the veracity of the information obtained. Technical triangulation is carried out by checking data through interviews, observation, documentation. This research chose interview, observation and documentation methods because the combination of these three methods provides an in-depth understanding of the application of monopoly game media in class III mathematics learning. Interviews allow for direct exploration of the views and experiences of teachers, students and school principals. Observation provides a visual understanding of interactions in learning. Documentation such as lesson plans complement the data collected. The researcher did not use a questionnaire because class III students may have limitations in filling out the questionnaire correctly and in detail. The chosen method better adapts to the student's level of cognitive development and ensures more accurate and in-depth data.

After the data is collected the data is analyzed using interactive analysis techniques Miles & Huberman (Miles, et al., 2020) which consists of three activity flows that occur simultaneously, namely: data reduction, data presentation, drawing conclusions/verification. Data reduction is carried out after collecting data through interviews, observation and documentation. This involves the process of sorting, grouping and selecting the most relevant and significant information related to the application of monopoly game media in learning mathematical calculation operations. The data that has been compiled will be organized and presented in a systematic way, using graphs, tables,

quotes from interviews, and observation notes. Good presentation helps readers understand findings visually and narratively, connecting data to research questions. After the data is presented, the final step is drawing conclusions or verification. In this stage, the researcher analyzes the data thoroughly, relates the findings to the research objectives, and formulates conclusions that support or describe the situation of applying monopoly game media in class III mathematics learning.

RESULT AND DISCUSSION

Research result

Media Planning for the Monopoly Game in Learning Mathematics for Counting Operations

Planning mathematics learning by applying monopoly game media is the same as other learning in general, namely by preparing a learning implementation plan (RPP) for the 2013 curriculum. This was conveyed by the class III teacher:

> "Yes, I have planned to use the Monopoly game by preparing a lesson plan. In planning monopoly game media, we need to pay attention to the criteria and considerations in choosing learning media. The criteria include objectives, student circumstances, availability, technical quality and cost. The considerations are considerations of production, students, content and teachers. I first identify the learning goals I want to achieve through this game. For example, if we are studying the arithmetic operation of multiplication, then my goal is for students to be able to calculate the results of multiplication quickly and accurately."

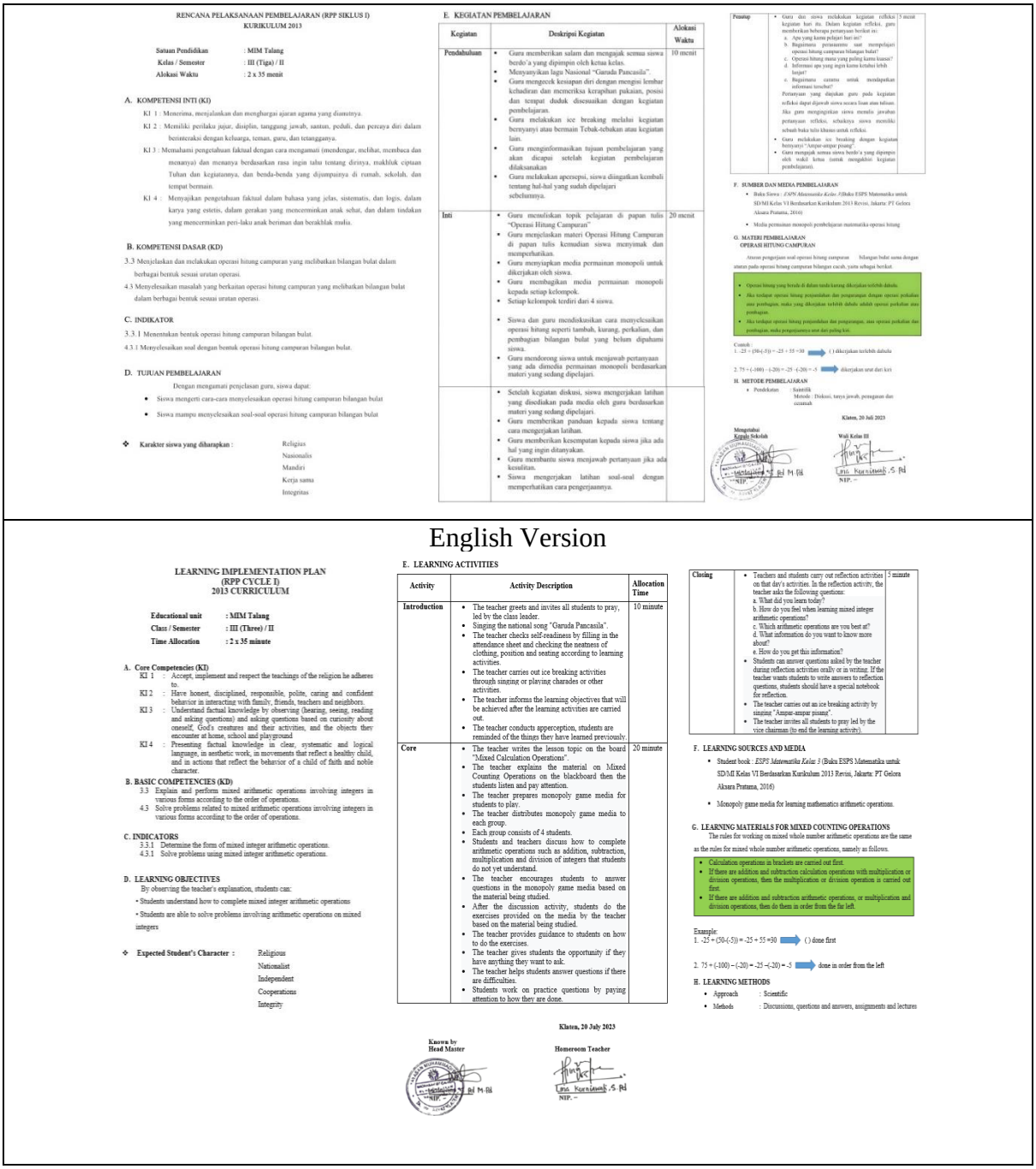
The class III teacher added that he ensured that the Monopoly game prepared was appropriate to the level of understanding of class III students. He conveyed this in the following interview.

> "That was an important step in planning this game. Previously, I conducted a formative assessment to understand the level of students' understanding of arithmetic operations. That way, I can set the game's difficulty level and adjust it to suit their needs and abilities."

Almost the same statement was also conveyed by the school principal in the interview excerpt below.

> "After setting learning objectives, the teacher designs a series of activities in the game that support the achievement of these objectives. "Apart from that, in the lesson plan, the teacher also prepares questions or reflections that will lead students to understand the underlying mathematical concepts of each step in the game."

The results of the interview above are proven by the RPP documentation as presented in the image below.



RENCANA PELAKSANAAN PEMBELAJARAN (RPP SIKLUS I)
KURIKULUM 2013

Satuan Pendidikan : MIM Talang
Kelas / Semester : III (Tiga) / II
Alokasi Waktu : 2 x 35 menit

A. KOMPETENSI INTI (KI)
KI 1 : Menerima, menjalankan dan menghargai ajaran agama yang dianutnya.
KI 2 : Memiliki perilaku jujur, disiplin, tanggung jawab, santun, peduli, dan percaya diri dalam berinteraksi dengan keluarga, teman, guru, dan tetangganya.
KI 3 : Memahami pengetahuan faktual dengan cara mengamati (mendengar, melihat, membaca dan menanya) dan menanya berdasarkan rasa ingin tahu tentang dirinya, makhluk ciptaan Tuhan dan kegiatannya, dan benda-benda yang dijumpainya di rumah, sekolah, dan tempat bermain.
KI 4 : Menyajikan pengetahuan faktual dalam bahasa yang jelas, sistematis, dan logis, dalam karya yang estetis, dalam gerakan yang mencerminkan anak sehat, dan dalam tindakan yang mencerminkan peri-laku anak beriman dan berakhlak mulia.

B. KOMPETENSI DASAR (KD)
3.3 Menjelaskan dan melakukan operasi hitung campuran yang melibatkan bilangan bulat dalam berbagai bentuk sesuai urutan operasi.
4.3 Menyelesaikan masalah yang berkaitan operasi hitung campuran yang melibatkan bilangan bulat dalam berbagai bentuk sesuai urutan operasi.

C. INDIKATOR
3.3.1 Menentukan bentuk operasi hitung campuran bilangan bulat.
4.3.1 Menyelesaikan soal dengan bentuk operasi hitung campuran bilangan bulat.

D. TUJUAN PEMBELAJARAN
Dengan mengamati penjelasan guru, siswa dapat:
- Siswa mengerti cara-cara menyelesaikan operasi hitung campuran bilangan bulat
- Siswa mampu menyelesaikan soal-soal operasi hitung campuran bilangan bulat

❖ Karakter siswa yang diharapkan : Religius, Nasionalis, Mandiri, Kerja sama, Integritas

E. KEGIATAN PEMBELAJARAN

Kegiatan	Deskripsi Kegiatan	Alokasi Waktu
Pendahuluan	• Guru memberikan salam dan mengajak semua siswa berdo'a yang dipimpin oleh ketua kelas. • Menyanyikan lagu Nasional "Garuda Pancasila". • Guru mengecek kesiapan diri dengan mengisi lembar kehadiran dan memeriksa kerapihan pakaian, posisi dan tempat duduk disesuaikan dengan kegiatan pembelajaran. • Guru melakukan ice breaking melalui kegiatan bernyanyi atau bermain Tebak-tebakan atau kegiatan lain. • Guru menginformasikan tujuan pembelajaran yang akan dicapai setelah kegiatan pembelajaran dilaksanakan • Guru melakukan apersepsi, siswa diingatkan kembali tentang hal-hal yang sudah dipelajari sebelumnya.	10 menit
Inti	• Guru menuliskan topik pelajaran di papan tulis "Operasi Hitung Campuran" • Guru menjelaskan materi Operasi Hitung Campuran di papan tulis kemudian siswa menyimak dan memperhatikan. • Guru menyiapkan media permainan monopoli untuk dikerjakan oleh siswa. • Guru membagikan media permainan monopoli kepada setiap kelompok. • Setiap kelompok terdiri dari 4 siswa. • Siswa dan guru mendiskusikan cara menyelesaikan operasi hitung seperti tambah, kurang, perkalian, dan pembagian bilangan bulat yang belum dipahami siswa. • Guru mendorong siswa untuk menjawab pertanyaan yang ada dimedia permainan monopoli berdasarkan materi yang sedang dipelajari.	20 menit
	• Setelah kegiatan diskusi, siswa mengerjakan latihan yang disediakan pada media oleh guru berdasarkan materi yang sedang dipelajari. • Guru memberikan panduan kepada siswa tentang cara mengerjakan latihan. • Guru memberikan kesempatan kepada siswa jika ada hal yang ingin ditanyakan. • Guru membantu siswa menjawab pertanyaan jika ada kesulitan. • Siswa mengerjakan latihan soal-soal dengan memperhatikan cara pengerjaannya.	

Penutup	• Guru dan siswa melakukan kegiatan refleksi kegiatan hari itu. Dalam kegiatan refleksi, guru memberikan beberapa pertanyaan berikut ini: a. Apa yang kamu pelajari hari ini? b. Bagaimana pemasannnu saat mempelajari operasi hitung campuran bilangan bulat? c. Operasi hitung mana yang paling kamu kuasai? d. Informasi apa yang ingin kamu ketahui lebih lanjut? e. Bagaimana caramu untuk mendapatkan informasi tersebut? Pertanyaan yang diajukan guru pada kegiatan refleksi dapat dijawab siswa secara lisan atau tulisan. Jika guru mengungkitkan siswa memiliki jawaban pertanyaan refleksi, sebaiknya siswa memiliki sebuah buku telis khusus untuk refleksi. • Guru melakukan ice breaking dengan kegiatan bernyanyi "Ampar-ampar pisang" • Guru mengajak semua siswa berdo'a yang dipimpin oleh wakil ketua (untuk mengakhiri kegiatan pembelajaran.	5 menit

F. SUMBER DAN MEDIA PEMBELAJARAN
- Buku Siswa : *ESPS Matematika Kelas 3*(Buku ESPS Matematika untuk SD/MI Kelas VI Berdasarkan Kurikulum 2013 Revisi, Jakarta: PT Gelora Aksara Pratama, 2016)
- Media permainan monopoli pembelajaran matematika operasi hitung

G. MATERI PEMBELAJARAN
OPERASI HITUNG CAMPURAN

Ataupun pengerjaan soal operasi hitung campuran bilangan bulat sama dengan aturan pada operasi hitung campuran bilangan cacah, yaitu sebagai berikut.

- Operasi hitung yang berada di dalam tanda kurung dikerjakan terlebih dahulu.
- Jika terdapat operasi hitung penjumlahan dan pengurangan dengan operasi perkalian atau pembagian, maka yang dikerjakan terlebih dahulu adalah operasi perkalian atau pembagian.
- Jika terdapat operasi hitung penjumlahan dan pengurangan, atau operasi perkalian dan pembagian, maka pengerjaannya dari paling kiri.

Contoh :
1. -25 + (50-(-5)) = -25 + 55 =30 ⇒ ( ) dikerjakan terlebih dahulu
2. 75 + (-100) – (-20) = -25 –(-20) = -5 ⇒ dikerjakan urut dari kiri

H. METODE PEMBELAJARAN
- Pendekatan : Saintifik
  Metode : Diskusi, tanya jawab, penugasan dan ceramah

Klaten, 20 Juli 2023
Mengetahui
Kepala Sekolah
NIP. –
Wali Kelas III
NIP. –

English Version

LEARNING IMPLEMENTATION PLAN
(RPP CYCLE I)
2013 CURRICULUM

Educational unit : MIM Talang
Class / Semester : III (Three) / II
Time Allocation : 2 x 35 minute

A. Core Competencies (KI)
KI 1 : Accept, implement and respect the teachings of the religion he adheres to.
KI 2 : Have honest, disciplined, responsible, polite, caring and confident behavior in interacting with family, friends, teachers and neighbors.
KI 3 : Understand factual knowledge by observing (hearing, seeing, reading and asking questions) and asking questions based on curiosity about oneself, God's creatures and their activities, and the objects they encounter at home, school and playground
KI 4 : Presenting factual knowledge in clear, systematic and logical language, in aesthetic work, in movements that reflect a healthy child, and in actions that reflect the behavior of a child of faith and noble character.

B. BASIC COMPETENCIES (KD)
3.3 Explain and perform mixed arithmetic operations involving integers in various forms according to the order of operations.
4.3 Solve problems related to mixed arithmetic operations involving integers in various forms according to the order of operations.

C. INDICATORS
3.3.1 Determine the form of mixed integer arithmetic operations.
4.3.1 Solve problems using mixed integer arithmetic operations.

D. LEARNING OBJECTIVES
By observing the teacher's explanation, students can:
- Students understand how to complete mixed integer arithmetic operations
- Students are able to solve problems involving arithmetic operations on mixed integers

❖ Expected Student's Character : Religious, Nationalist, Independent, Cooperations, Integrity

E. LEARNING ACTIVITIES

Activity	Activity Description	Allocation Time
Introduction	• The teacher greets and invites all students to pray, led by the class leader. • Singing the national song "Garuda Pancasila". • The teacher checks self-readiness by filling in the attendance sheet and checking the neatness of clothing, position and seating according to learning activities. • The teacher carries out ice breaking activities through singing or playing charades or other activities. • The teacher informs the learning objectives that will be achieved after the learning activities are carried out. • The teacher conducts apperception, students are reminded of the things they have learned previously.	10 minute
Core	• The teacher writes the lesson topic on the board "Mixed Calculation Operations". • The teacher explains the material on Mixed Counting Operations on the blackboard then the students listen and pay attention. • The teacher prepares monopoly game media for students to play. • The teacher distributes monopoly game media to each group. • Each group consists of 4 students. • Students and teachers discuss how to complete arithmetic operations such as addition, subtraction, multiplication and division of integers that students do not yet understand. • The teacher encourages students to answer questions in the monopoly game media based on the material being studied. • After the discussion activity, students do the exercises provided on the media by the teacher based on the material being studied. • The teacher provides guidance to students on how to do the exercises. • The teacher gives students the opportunity if they have anything they want to ask. • The teacher helps students answer questions if there are difficulties. • Students work on practice questions by paying attention to how they are done.	20 minute

Closing	• Teachers and students carry out reflection activities on that day's activities. In the reflection activity, the teacher asks the following questions: a. What did you learn today? b. How do you feel when learning mixed integer arithmetic operations? c. Which arithmetic operations are you best at? d. What information do you want to know more about? e. How do you get this information? • Students can answer questions asked by the teacher during reflection activities orally or in writing. If the teacher wants students to write answers to reflection questions, students should have a special notebook for reflection. • The teacher carries out an ice breaking activity by singing "Ampar-ampar pisang". • The teacher invites all students to pray led by the vice chairman (to end the learning activity).	5 minute

F. LEARNING SOURCES AND MEDIA
- Student book : *ESPS Matematika Kelas 3* (Buku ESPS Matematika untuk SD/MI Kelas VI Berdasarkan Kurikulum 2013 Revisi, Jakarta: PT Gelora Aksara Pratama, 2016)
- Monopoly game media for learning mathematics arithmetic operations.

G. LEARNING MATERIALS FOR MIXED COUNTING OPERATIONS
The rules for working on mixed whole number arithmetic operations are the same as the rules for mixed whole number arithmetic operations, namely as follows.
- Calculation operations in brackets are carried out first.
- If there are addition and subtraction calculation operations with multiplication or division operations, then the multiplication or division operation is carried out first.
- If there are addition and subtraction arithmetic operations, or multiplication and division operations, then do them in order from the far left.

Example:
1. -25 + (50-(-5)) = -25 + 55 =30 ⇒ ( ) done first
2. 75 + (-100) – (-20) = -25 –(-20) = -5 ⇒ done in order from the left

H. LEARNING METHODS
- Approach : Scientific
- Methods : Discussions, questions and answers, assignments and lectures

Klaten, 20 July 2023
Known by
Head Master
NIP. –
Homeroom Teacher
NIP. –

Figure 1. Learning Implementation Plan (RPP)

Based on the picture above, mathematics learning is planned by preparing lesson plans that have been prepared in accordance with the learning objectives. The indicators set in the arithmetic operations material are Determining the form of arithmetic operations on mixed integers and Solving problems using the form of arithmetic operations on mixed integers with the help of the monopoly game media. This RPP is prepared by the class III teacher and signed by the school principal.

The researcher's main role in qualitative research is to observe, analyze, and explore understanding of the phenomenon being studied. Researchers focus on data

collection, observation, interviews and analysis of findings, as well as exploring perspectives and understanding from various related parties. RPPs are prepared by teachers who have expertise in designing learning that suits class and curriculum needs.

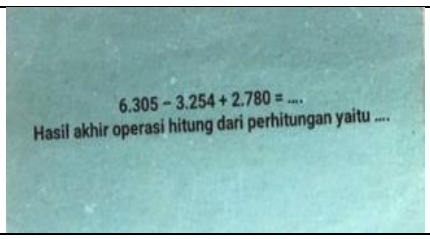
After the RPP was prepared, the class III teacher prepared a monopoly game as a medium for learning mathematics using arithmetic operations. This was conveyed by the class III teacher and school principal in the following interview.

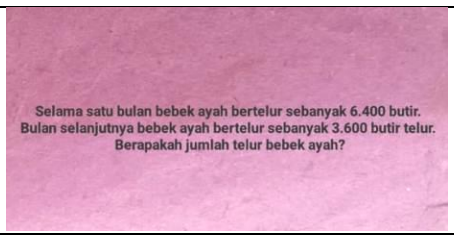
> "Yes, I have planned to use the Monopoly tool in my Learning Implementation Plan (RPP). First, I identify the learning goals I want to achieve through this game, such as understanding the operations of adding and subtracting." (class III teacher)
> "After setting learning objectives, the Class Teacher designs a series of activities that include an introduction to the Monopoly game, explanation of the rules, and application of arithmetic operations using the Monopoly tool. In the lesson plan, the Class Teacher also notes the steps of the game and how to relate them to the appropriate mathematical concepts."

The results of the interview above are supported by evidence of observations made by the researcher in the following picture.

English Version

Figure 2. Preparation of Media Tools for the Monopoly Game





English Version	English Version
6,305-3,254+2,780=… the final result of the calculation operation from the calculation, namely=…	During one month the father's duck lays 6,400 eggs. The following month the father's duck laid 3,600 eggs. How many duck eggs do you have?

Figure 3. Cards in the Monopoly Game

Based on figure 2 above, the monopoly game media has a monopoly form like games in general and is equipped with cards and dice. However, this media is adapted to arithmetic operations material so that it can be used by students as a learning medium. The media presented are how to carry out arithmetic operations and monopoly pictures containing mathematical problems. This is as seen in Figure 3 above, monopoly is equipped with cards containing arithmetic operation questions, the green cards contain short mathematical arithmetic operation questions, while the red cards contain story questions about mathematical arithmetic operations.

In accordance with the results of the interview and documentary evidence above, the teacher has prepared four monopoly media which will be distributed to students who are divided into four groups. Each group consisting of four students divided into front desk and back desk groups will receive one monopoly media to use in learning activities. The teacher has also designed clear guidelines and game rules for each group. This guide includes instructions on how to use monopoly media, property transaction rules, money calculations, and general game steps. With this guide, teachers ensure that students understand how to play and apply the concept of mathematical calculation operations correctly. Additionally, by distributing monopoly media in small groups, teachers can provide more individual attention to each student, facilitate productive group discussions, and identify areas where students may need additional help. Thus, this approach supports collaborative learning in order to achieve a deeper understanding of mathematical calculation operations in class III.

Application of Monopoly Game Media in Mathematical Material for Calculation Operations

In the mathematics learning process, the application of monopoly game media can help the teaching and learning process of arithmetic operations material. Based on the results of observations in class III MIM Talang, after the teacher delivered material on arithmetic operations, the teacher asked students to play monopoly which had been provided by the teacher. The role of researchers in the learning process is to collect data, analyze it, and provide recommendations to improve the quality of learning. The data collected helps identify the strengths and weaknesses of learning methods and understand student learning outcomes. In doing so, researchers contribute to the development of better learning practices.

Figure 4. Implementation of Mathematics Learning Using Monopoly Game Media

Based on the picture above, the application of monopoly game media in mathematics learning is by dividing students into groups consisting of 4 groups. This was also conveyed by the class III teacher in the following interview.

> “I implemented it by distributing one media monopoly to each group. I first explain the steps or rules of the game. One of the students throws the dice then the number on the dice is adjusted according to the step of the dice number obtained by the student then the student stops at that number. The student must answer the question behind the media monopoly column. If the student stops at Opportunity or General Fund, the student takes the card that has been provided in "This is a monopoly medium to work on and if students stop at the free column or just pass through, students don't get arithmetic operation questions."

The statement made by the class III teacher above is in line with the answer of one of the class III students in the interview excerpt below.

> "Yes, the teacher was carrying out learning arithmetic operations using monopoly. But before that, the teacher asked students to be in groups of 4 people, if there were those who didn't make it, there were also groups of 3 people. After that, the teacher explains how to play, it's almost the same as monopoly in general. Only here there are mathematics lessons on arithmetic operations. So, on the game board, there are clues related to arithmetic operations, such as addition, subtraction or multiplication problems, which we have to solve when we reach certain squares.”

When the researcher asked how the teacher ensured that students were involved and active while playing the Monopoly game, he answered as follows:

> “I create a fun and competitive atmosphere during the game. The students were very enthusiastic when playing roles as players on the game board. Apart from that, I appreciate the groups who managed to answer the math questions correctly and advanced further on the game board.”

The third grade teacher also evaluated students' progress and understanding after playing the Monopoly game. This is expressed in the following interview.

> “I observe students during the game and note their skills and understanding in answering math problems. Additionally, after the game is over, I hold a reflection session in class, where students share their experiences and new knowledge they

gained while playing. This helps me see to what extent the learning objectives are being achieved."

Regarding student responses to the implementation of mathematics learning using monopoly game media, several students answered as follows:

"Yes, very happy! Monopoly makes math more fun. I learned more about how to count quickly and correctly while playing."
"I like it very much! Monopoly makes math more fun. I like role playing and counting money while playing. It feels like we are playing while learning, and I find it easier to understand math when I do it this way."

Based on the results of interviews with students above, the application of this monopoly game media received a positive response from students. They feel happy playing monopoly while learning arithmetic operations.

Supporting and Inhibiting Factors for Implementing Monopoly Game Media in Mathematics Learning, Calculation Operations Material for Students

The implementation of mathematics learning by applying the monopoly game media cannot be separated from supporting and inhibiting factors. The third grade teacher conveyed these supporting factors in the interview excerpt below.

"There are bros, one of them is monopoly game media with basic materials that are easy to obtain and the price is cheap and it is quite easy to make."
"Student involvement is the main key to successful learning. In the game of Monopoly, I create a fun and interactive atmosphere. Students actively participate as players on the game board and are involved in finding solutions to math problems."
"Support from schools is very important. The school supports us by providing resources and access to the various media needed to design a game of Monopoly. Apart from that, they provide space for us to develop creative learning methods."

Researchers also conducted interviews regarding the supporting factors of monopoly game media in mathematics learning for students. They expressed it as follows:

"I love when we have to solve math problems on the game board. It feels like playing while learning, and I feel more confident in math now."
"This game makes it easier for me to remember and apply mathematical concepts. I can see how math is used in real situations while playing the game."

Based on the results of interviews with teachers and students of class III above, it can be concluded that the supporting factors for applying the monopoly game media to mathematical arithmetic operations include: the basic materials for making monopoly are easy to obtain and cheap, students actively participate, there is support from the school, and students feel like playing while learning.

Meanwhile, the inhibiting factors in applying monopoly game media to mathematical arithmetic operations were presented by the teacher below.

> "The inhibiting factor is that there are still students who are busy with themselves and don't focus on working on the questions in the monopoly game."
> "Of course there are students who experience difficulties when answering story questions on opportunity cards and general funds."
> “One of the challenges is limited learning time. I have to make sure that the game doesn't take up too much time so that we can still discuss concepts and reflect after the game is over. Moreover, time is reduced just to remind students not to be busy alone."

This obstacle was also conveyed by students with answers that were almost the same as the class III teacher above, following the interview excerpt.

> "Earlier there were difficult and easy, sir, the difficulty was when working on the story questions on the Opportunity and General Fund cards."
> "There is a lack of focus during the learning process in class and class comfort, there are friends who are making noise in the class."

Based on the results of the interviews with teachers and students of class III above, it can be concluded that the inhibiting factors for implementing monopoly game media in mathematical arithmetic operations include: class conditions that are not conducive because there are some students who are busy alone, students have difficulty answering the questions in monopoly cards, and time constraints.

Solutions to Overcome Barriers to Implementing Monopoly Game Media in Mathematics Learning, Calculation Operations Material for Students

Based on the obstacles that have been conveyed by teachers and students above, there are several solutions presented by teachers. He conveyed it as follows:

> "First, we identify the characteristics of the students first, sir, and in every lesson we involve students in learning so that students are active in learning. We provide specialized roles that better suit the interests and strengths of quieter students. For example, they can be responsible for writing game notes or being a facilitator in a group. In addition, we hold smaller class sessions or tutoring to provide additional support to students who need it.”
> "Usually, in between lessons, I do ice breaking so that students are more enthusiastic about participating in learning and to motivate students so that students are more interested in participating in learning in class."
> “To overcome classroom conditions that are not conducive, I actively observe interactions between students and assign different roles to each student to ensure that each student is involved in the game. Additionally, it encourages students to work together in groups, support each other, and share their ideas.”
> "One of the solutions implemented due to time constraints is to divide learning into several sessions that can be played in several meetings. This way, we can ensure that we have enough time to play the game and still leave time for reflection and discussion. We also keep notes regarding play in previous sessions. When we

> resume the game at the next meeting, we start by reminding students of what they have learned and achieved in the previous session. This helps students to stay connected with the learning material and pick up where they left off. Another solution is that I need to choose more questions that are more focused and relevant to fit the existing time limit. Additionally, I give a brief explanation of the game and rules before starting."

Meanwhile, from the students' responses regarding the solution to facing these obstacles, they asked the teacher, then the teacher helped the students work on these difficult questions.

Discussion

Media Planning for the Monopoly Game in Learning Mathematics for Counting Operations

Based on research findings, the application of monopoly game media in mathematics learning arithmetic operations material is planned by preparing a lesson plan. This RPP is prepared by the class III teacher and signed by the school principal. This is the same as stated by Oktafianti, et al., (2019) in her research that in creating innovations, Learning Implementation Plans (RPP) are prepared to be used as guidelines and points in carrying out the teaching process. The RPP which has been modified and validated by the validator in this regard is that the school principal produces results in the valid category.

In planning monopoly game media, we need to pay attention to the criteria and considerations in choosing learning media. The criteria include objectives, student circumstances, availability, technical quality and cost. This finding is in line with research conducted by Jannah & Setyawan (2022) states that planning is carried out by knowing class conditions through observation and preparing lesson plans that are appropriate to the material. Temporary Nashihah (2020) conveyed that to create student learning power, teachers focus more on arranging the components of the RPP, namely what the learning wants to achieve, teaching materials, teaching methods, teaching aids, learning resources, and providing standard learning outcomes.

Besides that, Pikri, et al., (2023) also conveyed that in this preparation section, the things that must be prepared are understanding the media, preparing lesson plans that contain media, explaining the use of media to students, and explaining how to use media in solving mathematical problems.

After preparing the lesson plan, the teacher's next step is to prepare four monopoly game tools to be distributed to four groups of students. The teacher also designed a series of activities that included an introduction to the Monopoly game, explanation of the rules,

and application of arithmetic operations using the Monopoly tool. According to Sibuea & Handayani (2019) the order for playing this mathematical monopoly game is the same as the monopoly game in other games, that is, participants can start monopoly through the star line and circle the plot to collect wealth or in the form of points and participants are required to concentrate to prepare to answer the questions that have been presented in the game, participants must also Be agile enough in processing the mathematical questions presented to gain big profits.

Application of Monopoly Game Media in Mathematical Material for Calculation Operations

The application of the Monopoly game media in learning mathematical arithmetic operations can be an interesting and effective approach for students' interest in understanding the concepts of mathematical arithmetic operations. The application of monopoly game media in mathematics learning begins by grouping participants into groups which are divided into 4 groups. Each group is given a Monopoly game board. This group division aims to encourage collaboration and interaction between students while playing the game. These steps were also presented by Gusmania & Agustyaningrum (2018) that the teacher explains the rules of playing the monopoly game and divides the groups to discuss the material.

In the context of the game Monopoly, the rich relationship with learning mathematical calculation operations can be described in more detail. Students must calculate the number of steps they will take according to the results of the dice roll. It develops calculation skills and understanding of addition concepts, as well as providing real-world experience of applying mathematical operations in concrete actions. It teaches students about recognizing numbers, calculating different dice outcomes, and provides a foundation for understanding probability. Cards in the game, such as chance and common fund cards, require an understanding of arithmetic operations such as addition or subtraction. Apart from that, students are invited to understand the concept of opportunity when facing various events caused by these cards. Overall, Monopoly creates a learning environment with aspects of mathematical calculation operations, combining theory with practice in an interactive and fun way.

In the process of implementing mathematics learning by applying the monopoly game media, the teacher ensures that students are involved and active while playing the monopoly game. The teacher creates a fun and competitive atmosphere during the game. The third grade teacher also evaluated students' progress and understanding after playing

the monopoly game. The teacher observes students during the game and notes their skills and understanding in answering math problems. The teacher held a reflection session in class, where students shared their experiences and new knowledge they gained while playing.

The implementation of mathematics learning using the monopoly game media received positive responses from students obtained from interviews and observations during the learning process. During observations, students showed enthusiastic responses and were involved in the learning process, with expressions of excitement when playing the game. They also actively interact with monopoly media, calculating moving moves, analyzing cards, and carrying out property transactions with enthusiasm. They also say that monopoly games make mathematics more fun or less boring so they can train students to calculate quickly and correctly. This is in line with what was conveyed by Desyawati, et al., (2021) that this monopoly game media has the aim of being able to solve a problem presented in the game which can increase participants' interest in learning so that participants do not experience boredom in the learning process.

Supporting and Inhibiting Factors for Implementing Monopoly Game Media in Mathematics Learning, Calculation Operations Material for Students

The application of the Monopoly game media in learning mathematics regarding arithmetic operations has supporting factors that make its implementation easier. From the teacher's perspective, using the Monopoly game media is relatively easy and can be made by the teacher himself. Teachers can design game boards, question cards and learning materials that suit the level of difficulty and needs of students. This convenience allows teachers to adapt games according to learning objectives and class characteristics, so that learning becomes more relevant and effective.

In addition, the price for purchasing Monopoly game materials is quite affordable. Some materials, such as game boards, dice, and other gaming devices, can be easily found in markets or toy stores at fairly cheap prices. This provides flexibility for teachers and schools with limited budgets to still be able to utilize monopoly game media as a mathematics learning tool. With affordable costs and ease of use, the application of the Monopoly game media can be carried out more widely and can provide positive benefits for the learning process of mathematical arithmetic operations for students.

Kurniawati & Ahmad (2018) reveals that the media used as learning media should consider elements that do not make it difficult or make it easier to find materials, but do not affect the meaning and function of the media itself. Media can be made in models,

pictures, structured charts, etc., but with elements of affordable value and not difficult to find so that it does not make it difficult for teachers to create the media in question.

Student involvement is indeed the main key to successful learning. When creating a fun and interactive atmosphere in the Monopoly game, students will feel more motivated to actively participate. As players on the game board, they will be actively involved in finding solutions to existing math problems. This not only makes learning more interesting, but also helps improve deeper understanding and application of mathematical concepts. As stated by Fitriani, et al., (2022) that monopoly media makes participants more focused during this right interaction because all participants get the same turn. Monopoly media not only provides students with learning materials, but also increases participants' desire in the learning process.

Apart from that, support from schools is also an important factor in the successful implementation of the Monopoly game media. Support from schools can take various forms in the context of implementing the Monopoly game media in learning mathematical calculation operations. First, schools can provide the necessary resources, such as game equipment and supporting materials. Second, support can come from the school principal who provides approval and conceptual support for the use of this method. Third, accompanying teachers or learning coordinators can assist in the preparation, implementation and evaluation of games. Fourth, special space and time can be allocated for these games, demonstrating the school's commitment to innovative learning approaches. All forms of support aim to ensure the successful and effective implementation of the Monopoly game media in mathematics learning. With support from the school, teachers can have more freedom and confidence in providing innovative and fun learning for students. Apart from that, support from schools also reflects the school's commitment to improving the quality of learning and critical thinking opportunities for students.

From the student side, the application of monopoly game media is felt by students as playing while learning. The Monopoly game creates a fun and interesting learning environment for students. In this relaxed and interactive atmosphere, students will have a greater sense of being active and enthusiastic in the learning process.

Apart from that, the Monopoly game also provides practical benefits for students. Mathematical concepts learned in the Monopoly game are presented in real situations, so students can easily relate these concepts to daily activities. In the game, participants are faced with mathematical problems that require the application of arithmetic operations,

such as addition, subtraction, multiplication and division. This helps students remember and understand mathematical concepts, because they can see how these concepts are applied in concrete and relevant situations.

Apart from supporting factors, the application of monopoly game media in mathematics learning also has inhibiting factors. Class conditions that are not conducive because there are several students who are busy can be an obstacle in implementing the Monopoly game media. Students who are busy on their own may feel awkward or reluctant to interact in groups, so they may feel marginalized or not participate actively in the game.

Time limitations can also be an inhibiting factor in implementing the Monopoly game media. If the available time is too short, students may not have enough time to play fully or to answer all the questions in the game. Desyawati et al. (2021) stated that the application of this media requires a longer learning time to apply monopoly media and teachers must be ready to control the group so that it remains conducive because this media is game-based.

Another inhibiting factor is students who have difficulty answering the questions on the Monopoly cards which can hinder the learning process. This can happen if the questions presented are too difficult or do not match the student's level of understanding. Students' inability to answer questions correctly can disrupt the smooth running of the game and reduce the effectiveness of learning. Therefore, it is important for teachers to see that the questions provided are correct at the right level of difficulty so that students can face challenges better and optimize learning through the Monopoly game medium.

Solutions to Overcome Barriers to Implementing Monopoly Game Media in Mathematics Learning: Calculation Operations Material for Students

Class conditions that are less conducive can be overcome by teachers needing to recognize student characteristics and creating an inclusive and supportive environment in the class and teachers can provide special roles that suit the interests and strengths of quieter students. According to Kurniasari, et al., (2016) in providing mathematics material, teachers understand that the abilities of students are not the same, and not all participants like mathematics lessons and innovation is needed regarding how to present the correct process of exchanging knowledge in the curriculum. One of these updates is to implement a relaxed and fun monopoly game media.

The teacher also did ice breaking between lessons before starting the Monopoly game. According to Algivari & Mustika (2022) ice breaking techniques can help students easily accept the teaching given by the teacher and help focus students' vision and make

learning enjoyable. Apart from that, ice breaking can also improve various aspects of the participants, including cognitive aspects, affective aspects and also students' psychomotor skills (Ren & Zhao, 2022). In this way, the application of monopoly game media in mathematics learning will be a more meaningful and effective learning experience for students.

To overcome time constraints, teachers need to plan well and manage time efficiently during learning. This is as stated by Susanto (2021) the limited schedule allocation can be taken into account by tightening the existing allocation. If you don't manage your time well then the teacher will not be able to teach the material taught completely. Teachers can also choose questions that are more focused and relevant to fit the existing time limit. Additionally, teachers can provide a brief explanation of the game and rules before starting, so students can get involved immediately and make the most of their learning time.

Students' difficulties in answering the questions on the monopoly cards can be overcome by the teacher preparing question cards that suit the students' level of difficulty and needs. In the monopoly game, there are 20 cards, namely 10 "Chance" cards and 10 "General Funds" cards which contain instructions or events related to the use of mathematical calculation operations, such as addition, subtraction, or calculating moving steps. Even though there are questions on the cards, this research can still be categorized as qualitative research because the main focus is on understanding the context, interactions, and students' responses to the use of monopoly game media in learning mathematical calculation operations. The questions must also be relevant to the mathematical arithmetic operations being studied. Apart from that, teachers need to provide additional guidance to students who have difficulty answering questions. This is supported by Hakim, et al., (2023) which states that the teacher guides students who experience difficulties and the teacher gives students time to think about answers or questions from the cards they hold.

The implication of this research is that the use of the Monopoly game media in learning mathematical calculation operations for class III students has a positive impact. The results showed that students responded positively to this approach, showing active engagement, excitement, and participation in learning. This shows that this approach can increase students' motivation and interest in learning mathematics.

CONCLUSION

Planning for mathematics learning by applying monopoly game media is carried out by preparing lesson plans. Next, the teacher prepares monopoly game materials and designs a series of monopoly game activities. By dividing students into four groups they can coordinate the monopoly game, the teacher explains the rules of the monopoly game clearly to the students, the teacher ensures that students are actively involved while playing monopoly, the teacher goes around each group so that the game can run according to procedures, the teacher evaluates students' understanding after play monopoly game. The application of this monopoly game media received positive responses from students.

Supporting factors for applying monopoly game media to mathematical arithmetic operations include: the basic materials for making monopoly are easy to obtain and cheap, students actively participate, there is support from the school, and students feel like they are playing while learning. Meanwhile, inhibiting factors include: class conditions that are not conducive because there are some students who are busy alone, students have difficulty answering the questions on the monopoly card, and time constraints.

Solutions to overcome these obstacles include: teachers need to recognize student characteristics, divide learning into several sessions to be played at the next meeting, teachers conduct ice breaking, students ask the teacher about difficulties in answering questions, teachers choose questions that are more focused and relevant so that according to the existing time limit, and the teacher holds smaller class sessions to help students who have difficulty answering questions and need to understand the material.

Based on the description above, the suggestion that can be given is to further optimize the application of the Monopoly game media in mathematics learning, teachers can pay more attention to the lesson implementation plan (RPP) more thoroughly and comprehensively. Teachers need to ensure that the RPP includes complete implementation stages, starting from preparing Monopoly game materials, designing a series of game activities, to evaluation and reflection after the game takes place. Apart from that, it is important for teachers to recognize students' characteristics, so that they can adjust the level of difficulty of questions in the Monopoly game to students' abilities and understanding in mathematics learning so that it can run more effectively and provide positive benefits for students.

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