Vol. 4 No. 1 Edisi November – Januari 2027 E. ISSN. 3032-2472
Multidisciplinary Indonesian Center Journal (MICJO)
Journal page is available to
https://e-jurnal.jurnalcenter.com/index.php/micjo
Email: admin@jurnalcenter.com

IMPLEMENTATION OF THE EDUCATIONAL GAME OF SNAKES AND LADDERS TO IMPROVE STUDENTS' LEARNING CONCENTRATION WITH HYPERACTIVE CHARACTERISTICS IN MATHEMATICS LEARNING IN GRADE V OF SD 3 JATI WETAN

PENERAPAN PERMAINAN EDUKATIF ULAR TANGGA UNTUK MENINGKATKAN KONSENTRASI BELAJAR MURID DENGAN KARAKTERISTIK HIPERAKTIF PADA PEMBELAJARAN MATEMATIKA KELAS V SD 3 JATI WETAN

Indy Meilia Ruriarti[1*], Erik Aditia Ismaya[2], Sugiyantoro[3]

[1*]Universitas Muria Kudus, Email: indymeilia873@gmail.com
[2]Universitas Muria Kudus, Email: erik.aditia@umk.ac.id
[3]Universitas Muria Kudus, Email: Sugiant259@gmail.com

*email koresponden: indymeilia873@gmail.com

DOI: https://doi.org/10.62567/micjo.v4i1.3450

Abstract

Low learning concentration among students in mathematics lessons in Grade V of SD 3 Jati Wetan was indicated by an initial class average concentration of 52.08% and a classical mastery rate of 60%. This classroom action research aims to describe the implementation of the educational snakes and ladders game, the improvement of the learning concentration of students with hyperactive characteristics, and the development of the teacher's teaching skills. The study followed the Kemmis and McTaggart model in two cycles of two meetings each. The subjects were 10 Grade V students, with the intervention focused on four students showing hyperactive characteristics based on observation together with the classroom teacher. Data were collected through observation, teacher interviews, documentation, field notes, and tests, and were analyzed using descriptive comparative and qualitative analysis. The class average concentration increased from 52.08% in the precycle to 67.50% in cycle I and 86.25% in cycle II. The average concentration of the four students with hyperactive characteristics rose from 39.58% to 58.33% and 82.29%. The teacher's teaching skills improved from 70.83% in cycle I to 91.67% in cycle II. The mean mathematics test score increased from 66.50 in the precycle to 85.00 in cycle II, while classical mastery rose from 60% to 100%. These findings indicate that the snakes and ladders game, accompanied by small groups, rotating roles, visual rules, answering time limits, and immediate reinforcement, was followed by improved learning concentration in the class studied.

Keywords : Learning Concentration, Hyperactive Characteristics, Snakes and Ladders Game, Mathematics Learning, Classroom Action Research.

Multidisciplinary Indonesian Center Journal (MICJO)
Journal page is available to
https://e-jurnal.jurnalcenter.com/index.php/micjo
Email: admin@jurnalcenter.com

Abstrak

Rendahnya konsentrasi belajar murid pada pembelajaran Matematika di kelas V SD 3 Jati Wetan ditunjukkan oleh rata-rata konsentrasi belajar kelas sebesar 52,08% dan ketuntasan belajar klasikal sebesar 60% pada kondisi awal. Penelitian tindakan kelas ini bertujuan mendeskripsikan penerapan permainan edukatif ular tangga serta peningkatan konsentrasi belajar murid dengan karakteristik hiperaktif dan perkembangan keterampilan mengajar guru. Penelitian menggunakan model Kemmis dan McTaggart dalam dua siklus, masing-masing terdiri atas dua pertemuan. Subjek penelitian adalah 10 murid kelas V, dengan tindakan difokuskan pada empat murid yang menunjukkan karakteristik hiperaktif berdasarkan observasi bersama guru kelas. Data dikumpulkan melalui observasi, wawancara guru, dokumentasi, catatan lapangan, dan tes, kemudian dianalisis secara deskriptif komparatif serta kualitatif. Rata-rata konsentrasi belajar kelas meningkat dari 52,08% pada prasiklus menjadi 67,50% pada siklus I dan 86,25% pada siklus II. Rata-rata konsentrasi empat murid dengan karakteristik hiperaktif meningkat dari 39,58% menjadi 58,33% dan 82,29%. Keterampilan mengajar guru meningkat dari 70,83% pada siklus I menjadi 91,67% pada siklus II. Nilai rata-rata tes Matematika meningkat dari 66,50 pada prasiklus menjadi 85,00 pada siklus II, sedangkan ketuntasan klasikal meningkat dari 60% menjadi 100%. Temuan ini menunjukkan bahwa penerapan permainan ular tangga yang disertai kelompok kecil, pembagian peran, aturan visual, batas waktu menjawab, dan penguatan segera diikuti peningkatan konsentrasi belajar pada kelas yang diteliti.

Kata Kunci : Konsentrasi Belajar, Karakteristik Hiperaktif, Permainan Ular Tangga, Pembelajaran Matematika, Penelitian Tindakan Kelas.

1. INTRODUCTION

Education is a process of guiding and optimally developing students' potential (Wiryanto & Anggraini, 2021), so learning needs to be designed according to student characteristics and needs. One aspect that influences learning success is concentration, namely the ability to focus attention and thoughts on the material being studied (Slameto, 2018; Winkel, 2014; Djamarah, 2015). Poor concentration can cause students to have difficulty understanding the material, be less active in learning, and ultimately impact learning outcomes.

Concentration problems can be more apparent in students who exhibit hyperactive characteristics. This condition is characterized by excessive motor activity, impulsivity, and difficulty maintaining attention (Barkley, 2015). Students with these characteristics tend to be easily distracted, have difficulty sitting still, and have difficulty following monotonous learning (Santrock, 2018). Meanwhile, elementary school students are in the concrete operational stage, so the learning process is more easily understood through hands-on activities, games, and the use of engaging media (Ismaya et al., 2021). This situation is becoming increasingly important in mathematics learning, which requires precision, attention, and concentration. Therefore, strategies and learning media that can increase student engagement are needed (Ismaya, 2022).

This situation was discovered based on initial observations in February 2026 in a fifth-grade class at SD 3 Jati Wetan, consisting of 10 students. The observations indicated that four students exhibited hyperactive characteristics. Overall, student concentration averaged 52.08%, categorized as sufficient, while mathematics learning completion only reached 60%. During the lesson, several students were seen frequently talking to themselves, moving around in their seats, paying little attention to the teacher's explanations, and being easily distracted by their surroundings. These findings indicate the need for more engaging learning activities that involve physical and mental activity and maintain student attention throughout the learning process.

Multidisciplinary Indonesian Center Journal (MICJO)
Journal page is available to
https://e-jurnal.jurnalcenter.com/index.php/micjo
Email: admin@jurnalcenter.com

One alternative is the educational game Snakes and Ladders. This game combines learning and play by modifying a Snakes and Ladders board with math problems that students must answer during the game. Through activities such as rolling dice, moving pieces, answering questions, and interacting with peers, learning becomes more active and less monotonous. The visual elements, motor activity, challenges, competition, and social interaction within the game are expected to help students maintain attention and improve concentration during learning. The use of the snakes and ladders game as a learning medium has also been explored in several previous studies, demonstrating its potential for improving concentration in elementary school students (Aisyah et al., 2023; Amali et al., 2025; Maulidah & Listrianti, 2024).

However, based on previous research referenced in this article, the application of the snakes and ladders educational game to improve concentration in mathematics for students exhibiting hyperactive characteristics through cyclical classroom action research, accompanied by reflection and improvement after each action, still requires further study. Therefore, this study implemented the snakes and ladders educational game in mathematics learning in fifth grade at SD 3 Jati Wetan, focusing on the development of concentration, specifically in four students exhibiting hyperactive characteristics, while also observing the development of the teachers' teaching skills during the action process. This research is expected to provide an overview of the application of the educational game of snakes and ladders, increasing the learning concentration of students with hyperactive characteristics, and the development of teachers' teaching skills in each learning cycle.

2. RESEARCH METHOD

This study is a Classroom Action Research (CAR) using the Kemmis and McTaggart model, which includes four stages in each cycle: planning, action implementation, observation, and reflection (Sugiyono, 2022). The study was conducted in two cycles, with each cycle consisting of two Mathematics learning meetings and a time allocation of 2 × 35 minutes per meeting. The study was conducted at SD 3 Jati Wetan in the even semester of the 2025/2026 academic year, with pre-cycle activities carried out in February 2026, cycle I in March 2026, and cycle II in April 2026. The research subjects consisted of 10 fifth-grade students, namely 8 boys and 2 girls, who participated in the entire learning process. The focus of the analysis was directed at four students who showed hyperactive characteristics based on behavioral observations carried out by the researcher and the class teacher, such as difficulty sitting still, easily distracted, often talking to themselves, lack of focus, often moving around, and getting bored easily. This identification was based on initial observations and was not a clinical diagnosis. The pre-cycle measurement results showed that the four students had the lowest concentration scores in the class, ranging from 37.50% to 41.67%. To maintain confidentiality, the four students will hereafter be referred to as S1, S2, S3, and S4. The researcher acted as the implementer of the action, while the class teacher served as both observer and interview source.

The research began with pre-cycle activities aimed at obtaining an overview of the initial conditions of Mathematics learning, identifying students exhibiting hyperactive characteristics, measuring learning concentration as baseline data, and obtaining additional information through interviews with the class teacher. During the pre-cycle stage, learning proceeded as usual, with teacher explanations and individual practice problems. Furthermore, in Cycle I, an educational game called "Snakes and Ladders" was implemented on the addition and subtraction of fractions. The action was implemented using a teaching module, Snakes and Ladders media, and 20 problems played by two groups of five students. In Cycle II, the action was applied to the multiplication and division of fractions, with improvements made based on the results of Cycle I reflections, as shown in Table 3. One improvement was the addition of a short movement activity at the beginning of the lesson to help cultivate student attention and engagement. Each meeting consisted of an initial activity, a core activity, and a closing activity. Core activities included a brief explanation of the material, the rules of the game, implementation, guidance, and reinforcement. Learning evaluations were conducted at the second meeting of each cycle. In the game, students took turns rolling dice, moving pieces according

Multidisciplinary Indonesian Center Journal (MICJO)
Journal page is available to
https://e-jurnal.jurnalcenter.com/index.php/micjo
Email: admin@jurnalcenter.com

to the number of faces on the dice, and then answering the questions provided. Pieces could move up when at the foot of the ladder and down when at the head of the snake. The cycle ended when the predetermined success indicators were achieved.

Data collection was conducted through observation, interviews, documentation, field notes, and evaluation tests. Learning concentration observations used an observation sheet consisting of six indicators with a rating scale of 1–4 with a maximum score of 24. The concentration score for each cycle was obtained from the average of the observations from the two meetings. Teachers' teaching skills were observed by observers using six assessment aspects, each also scored from 1–4 with a maximum score of 24. Interviews were conducted with class teachers to obtain information about learning conditions and changes in student behavior during the intervention. Documentation included photos of activities, teaching modules, attendance lists, and notes on learning outcomes. Field notes were used to record important events during the intervention process. The Mathematics evaluation test is given at the end of each cycle with a Learning Objective Achievement Criteria (KKTP) of 70 and is used as supporting data to see changes in learning outcomes.

Learning concentration was assessed based on six indicators: paying attention to teacher explanations, not being easily distracted, actively participating in games, completing assignments with focus, following game rules, and reducing hyperactive behavior. The behavior observed in the first indicator was the student's ability to look at the teacher and listen to the material being explained. The second indicator examined the student's ability to maintain focus despite environmental distractions. The third indicator was observed through student engagement and enthusiasm in playing Snakes and Ladders. The fourth indicator related to the ability to solve problems without engaging in numerous other activities. The fifth indicator was observed through student compliance with the agreed-upon game rules, while the sixth indicator was assessed by reducing behaviors such as talking to oneself, moving around, or interrupting friends. Each indicator was assessed using a four-level rubric: a score of 4 if the behavior occurred consistently without being reminded, a score of 3 if the behavior occurred frequently but was occasionally distracted, a score of 2 if the behavior occurred only occasionally and the student was frequently distracted, and a score of 1 if the behavior almost never occurred. A grid of indicators and observed behaviors is presented in Table 1.

Data validity was checked through technical triangulation and source triangulation. Technical triangulation was conducted by comparing observation results, interviews with classroom teachers, field notes, documentation, and test results. Meanwhile, source triangulation was conducted by comparing information obtained from the researcher as the implementer of the action, the classroom teacher as observer and interview source, and research documents. Students were observed during the learning process, and no specific interviews were conducted with them. Therefore, information regarding student conditions was obtained through behavioral observations and test results.

The research data were analyzed qualitatively and quantitatively. Qualitative data were analyzed interactively through the stages of data reduction, data presentation, and conclusion drawing (Miles et al., 2020). Quantitative data were analyzed descriptively and comparatively by comparing conditions during the pre-cycle, cycle I, and cycle II. The concentration percentage was calculated using the formula $P = (F/N) \times 100\%$, with F as the obtained score and N as the maximum score. The average score was calculated using the formula $\bar{X} = \Sigma X/N$. The percentage results were then interpreted based on the learning concentration categories in Table 2. 81%–100% is categorized as very good, 61%–80% as good, 41%–60% as adequate, 21%–40% as poor, and 0%–20% as very poor.

The research success indicators were established as measures to determine whether the action objectives were achieved (Sukmadinata, 2021). The study used two main concentration criteria, each applied separately. First, at least 80% of students achieved the Good or Very Good category based on the classification in Table 2. Second, at least 80% of students achieved a concentration score of at least 80%. These two criteria are distinguished because the lower limit for the Good category is 61%, while the threshold for success established in the study is a minimum score of 80%. Both criteria were applied to all 10 fifth-grade students, while the progress of four students with hyperactive

Multidisciplinary Indonesian Center Journal (MICJO)
Journal page is available to
https://e-jurnal.jurnalcenter.com/index.php/micjo
Email: admin@jurnalcenter.com

characteristics was reported separately as the focus of the analysis. In addition to these criteria, the success of the action is also marked by an increase in the percentage of concentration from pre-cycle to cycle I and from cycle I to cycle II, positive behavioral changes in the form of increased focus and activity, reduced distraction and hyperactive behavior, and an increase in the results of the Mathematics evaluation compared to the initial conditions.

3. RESULTS AND DISCUSSION

During the pre-cycle phase, mathematics learning proceeded conventionally without games. The average class concentration was 52.08% (Sufficient), with only 4 out of 10 students (40%) in the Good category and none reaching the Very Good category. The average concentration of the four students with hyperactive characteristics was 39.58% (Poor). The lowest indicators were not easily distracted and reducing hyperactive behavior, each at 45%, while active participation in learning reached 60%. The average class test score was 66.50, with 60% completion, while the average for the four students was 55.00, with none having completed the task. The class teacher also stated that the four students tended to have difficulty sitting still, got bored easily, and often needed reprimanding. These conditions did not meet the success indicators and formed the basis for the implementation of cycle I.

In cycle I, the educational game "snakes and ladders" was implemented using a teaching module, a snakes and ladders board, dice, pawns, question cards, and 20 math problems played by two groups. Classroom concentration increased to 67.50% (Good), with 7 students (70%) in the Good category, and the average for the four students with hyperactive characteristics increased to 58.33% (Fair). The highest indicator was active participation in games at 77.50%, while the ability to resist distraction and reduce hyperactive behavior remained at 60%. Teacher skills reached 70.83% (Good), while the average test score increased to 73.50 with 70% completion. Although student attention began to improve, the four students still frequently talked to themselves or moved around while waiting for their turn. Field notes also showed fighting over dice and pieces, and students still questioning the rules of the game.

Reflection results indicated that the actions in Cycle I did not meet the success indicators, as only 70% of students reached the Good/Very Good category, no students achieved the minimum score of 80%, and the concentration of the four students with hyperactive characteristics remained in the Fair category. Therefore, improvements were made in Cycle II, including simplifying and visualizing the rules through posters and examples of one round, forming small groups with one hyperactive student in each group, rotating role assignments, creating shorter and more varied questions, providing time limits for answers, and providing direct reinforcement and group rewards.

In Cycle II, the interventions were refined with materials on multiplication and division of fractions, a larger game board, shorter question cards, a poster with rules, role assignments, time limits, and group points. The lesson began with a short exercise and one round example, while the researcher provided direct guidance and reinforcement to the students in the focus of the study. Observations showed an increase in class concentration to 86.25% (Very Good), with all students (100%) achieving the Good/Very Good category and 9 students (90%) achieving a score of at least 80%. The average concentration of the four hyperactive students increased to 82.29% (Very Good). All indicators were in the Very Good category, with the highest score being actively participating in the game (90%) and the lowest being not easily distracted (82.50%). Teacher skills improved to 91.67% (Very Good), while the average test score reached 85.00, with 100% completion. The classroom teacher also observed that students were more focused, orderly, and active, and that self-talk and wandering behaviors consistently decreased.

Overall, class concentration increased from 52.08% in the pre-cycle to 67.50% in the first cycle and 86.25% in the second cycle, representing an increase of 34.17 percentage points. The average concentration of four students with hyperactive characteristics increased from 39.58% to 58.33% and then to 82.29%, for a total increase of 42.71 percentage points. The improvement in the second cycle

Multidisciplinary Indonesian Center Journal (MICJO)
Journal page is available to
https://e-jurnal.jurnalcenter.com/index.php/micjo
Email: admin@jurnalcenter.com

was greater than in the first cycle after improvements in small groups, role assignments, visual rules, time limits for answers, and immediate reinforcement. Because several components were improved simultaneously, the contribution of each component cannot be separated. A summary of class concentration is presented in Table 4.

Stage	Average score	Average (%)	Category	Good/Very Good Student	Students with a score of ≥ 80%
Prasiklus	12,50	52,08	Cukup	4 (40%)	0 (0%)
Siklus I	16,20	67,50	Baik	7 (70%)	0 (0%)
Siklus II	20,70	86,25	Sangat Baik	10 (100%)	9 (90%)

Source: research data (observation sheets), processed.

The individual development of the four students with hyperactive characteristics also showed improvement. S1, S2, and S4 achieved 83.33% in Cycle II, or Very Good, while S3 achieved 79.17%, or Good. Thus, the group average reached 82.29%, but this achievement does not mean all students reached the 80% threshold. The difference in average concentration of the group with hyperactive characteristics compared to other students also narrowed, from 20.83 points at baseline to 6.60 points in Cycle II. Individual data are presented in Table 5.

Subjek	Prasiklus	Siklus I	Siklus II	Final category
S1*	37,50	58,33	83,33	Very good
S2*	41,67	62,50	83,33	Very good
S3*	37,50	54,17	79,17	Good
S4*	41,67	58,33	83,33	Very good
S5	62,50	75,00	91,67	Very good
S6	66,67	79,17	91,67	Very good
S7	58,33	70,83	87,50	Very good
S8	62,50	75,00	87,50	Very good
S9	62,50	75,00	91,67	Very good
S10	50,00	66,67	83,33	Very good
An average of four students with hyperactive characteristics	**39,58**	**58,33**	**82,29**	**Very good**
Class average	**52,08**	**67,50**	**86,25**	**Very good**

*Source: research data (observation sheet), processed. *Students with hyperactive characteristics.*

In terms of indicators, all aspects of concentration improved from pre-cycle to Cycle II. The largest increases occurred in the indicators of reducing hyperactive behavior, by 40 percentage points, and not being easily distracted, by 37.50 points. These two indicators were the lowest in the pre-cycle and were directly related to the observed hyperactive characteristics. The progress of each indicator is presented in Table 6.

Indicator	Pra	S-I	S-II	Up (points)
1. Pay attention to the teacher's explanation	55,00	70,00	87,50	32,50
2. Not easily distracted	45,00	60,00	82,50	37,50
3. Actively participate in the game	60,00	77,50	90,00	30,00
4. Doing tasks with focus	50,00	65,00	85,00	35,00
5. Follow the rules of the game	57,50	72,50	87,50	30,00

Multidisciplinary Indonesian Center Journal (MICJO)
Journal page is available to
https://e-jurnal.jurnalcenter.com/index.php/micjo
Email: admin@jurnalcenter.com

Indicator	Pra	S-I	S-II	Up (points)
6. Reducing hyperactive behavior	45,00	60,00	85,00	40,00

Source: research data (observation sheets), processed. Pre = pre-cycle; S-I = cycle I; S-II = cycle II.

As supporting data, the Mathematics test results increased from an average of 66.50 in the pre-cycle to 73.50 in Cycle I and 85.00 in Cycle II, while classical mastery increased from 60% to 70% and finally to 100%. The average test scores of four students with hyperactive characteristics also increased from 55.00 to 65.00 and 78.75, respectively. Teacher skills improved from 70.83% (Good) in Cycle I to 91.67% (Very Good) in Cycle II. Improvements were primarily seen in the ability to manage the classroom and handle students with hyperactive characteristics, while the closing aspect of learning remained at a score of 3. Data on test results and teacher skills are presented in Tables 7 and 8.

Stage	Class average	Average number of students with hyperactive characteristics	Classical completion
Prasiklus	66,50	55,00	60% (6/10)
Siklus I	73,50	65,00	70% (7/10)
Siklus II	85,00	78,75	100% (10/10)

Source: research data (evaluation test); KKTP 70.

Aspect	S-I	S-II
Opens learning and attracts attention	3	4
Explaining the material and rules of the game	3	4
Managing groups and assigning roles	3	4
Guiding and providing reinforcement	3	4
Managing classes and student behavior with hyperactive characteristics	2	3
Closing the learning and concluding	3	3
Total scores (max. 24)	**17**	**22**
Percentage (category)	**70,83% (Good)**	**91,67% (Very good)**

Source: research data (observations by observers).

Based on the achievement of success indicators, in Cycle I only 70% of students achieved the Good/Very Good category, and no student achieved the minimum score of 80%. In cycle II, all students (100%) achieved the Good/Very Good category, and 90% achieved a score of at least 80%. Concentration improved at each stage, positive behavioral changes became consistent, and test scores also improved. Thus, all indicators of success were achieved in cycle II, prompting the study to be discontinued. The validity of the findings was strengthened through triangulation, which demonstrated a congruence in the direction of change between observations, teacher interviews, field notes, and tests, although S3 still required occasional reminders.

The learning concentration of students with hyperactive characteristics showed improvement in each cycle, although the success indicator was not achieved in Cycle I and was only achieved in Cycle II. The average class concentration increased from 52.08% in the pre-cycle to 67.50% in Cycle I and 86.25% in Cycle II, while the average for the four students with hyperactive characteristics increased from 39.58% to 58.33% and 82.29%. Because the study involved only one class without a comparison

Multidisciplinary Indonesian Center Journal (MICJO)
Journal page is available to
https://e-jurnal.jurnalcenter.com/index.php/micjo
Email: admin@jurnalcenter.com

group, these changes are described as post-treatment changes and cannot be used to determine the causal effect of each component of the treatment separately.

Initial conditions indicate that low concentration is related to students' characteristics of being easily distracted, having difficulty sitting still, getting bored easily, and requiring reprimands during monotonous learning (Barkley, 2015; Santrock, 2018). Learning dominated by teacher explanations and individual practice also does not provide sufficient space for movement and interaction, even though mathematics learning requires concentration and precision (Ismaya, 2022). Considering that learning methods and media are external factors that can influence learning concentration (Djamarah, 2015; Slameto, 2018), the educational game of snakes and ladders was implemented as an alternative approach more suited to student characteristics.

In cycle I, the implementation of the snakes and ladders game increased class concentration by 15.42 points. This improvement can be attributed to the characteristics of the concrete operational stage, which is more suited to learning through hands-on activities (Ismaya et al., 2021), as well as play experiences that allow students to construct knowledge through concrete activities (Piaget in Hurlock, 2017). Visual elements, movement, challenges, and competition also align with the needs of students exhibiting hyperactive characteristics (Barkley, 2015). This is evident in the indicator of active participation in the game, which reached 77.50%. However, the approach was not optimal because students still did not fully understand the rules, relatively large groups resulted in longer waiting times, there was no role assignment, there was insufficient variety in the questions, and classroom management and reinforcement were suboptimal. This condition is evident in the indicators of not being easily distracted and reducing hyperactive behavior, which remained at 60%. Thus, educational games are not simply about providing play activities; they require a clear activity structure to direct student engagement, as demonstrated by the benefits of educational games related to active student engagement (Fitriani & Hamdu, 2021).

Improved learning outcomes in Cycle II resulted in an 18.75-point increase in concentration in the class and a 23.96-point increase in four students with hyperactive characteristics. Improvements were achieved through smaller groups, rotating role assignments, peer mentoring, rule posters, time limits for answers, and immediate reinforcement. Small groups reduced waiting time, role assignments provided more focused activity space, and peer mentoring aligns with Vygotsky's (1978) perspective. Observations indicated that changes in concentration were accompanied by changes in lesson design and classroom management. Therefore, the snakes and ladders game can be viewed as an alternative approach to improving concentration in the classroom context studied, but the results did not indicate that each component of the improvement was independently responsible for the improvement.

Based on indicators, the largest improvements occurred in the ability to reduce hyperactive behavior by 40 percentage points and in the ability to be less easily distracted by 37.50 points. Both indicators are directly related to the hyperactive characteristics that were the focus of the study (Barkley, 2015). Improvements were also seen in the ability to pay attention to teacher explanations by 32.50 points and to complete assignments with focus by 35 points. This indicates that student engagement in games is not only evident in play activities but also accompanied by improvements in behaviors used to operationalize learning concentration (Djamarah, 2015).

The improvement in concentration coincided with improvements in learning outcomes and teacher skills. The average class test score increased from 66.50 in the pre-cycle to 85.00 in the second cycle, while completion increased from 60% to 100%. However, the material tested differed between cycles, so test results should be viewed as supporting data and cannot be used to conclude that increased concentration directly leads to improved learning outcomes. Teacher skills also increased from 70.83% in cycle I to 91.67% in cycle II. This finding demonstrates the importance of teacher skills in designing, managing, and controlling games to ensure learning activities remain focused (Slameto, 2018).

The implementation of the action was supported by engaging media, student enthusiasm, classroom teacher input during each reflection, and a relatively small student population. Challenges

Multidisciplinary Indonesian Center Journal (MICJO)
Journal page is available to
https://e-jurnal.jurnalcenter.com/index.php/micjo
Email: admin@jurnalcenter.com

included time constraints on media preparation, classroom conditions that easily become noisy during competitions, the need for intensive supervision, and the occasional need for reminders from students. The results of this study align with previous research reporting the benefits of the Snakes and Ladders game on concentration, interest, motivation, learning outcomes, and social interaction (Afandi, 2015; Aisyah et al., 2023; Amali et al., 2025; Lumbantobing et al., 2022; Maulidah & Listrianti, 2024; Solichah et al., 2024), as well as research on game-based learning in Mathematics (Paulina et al., 2023). The contribution of this study is not to claim that Snakes and Ladders is the only effective medium, but rather to document its application in Mathematics learning, focusing on four students exhibiting hyperactive characteristics, improving actions based on reflection, and observing concentration, teacher skills, and learning outcomes in one class.

This study has several limitations: the subjects were only one class with 10 students, with four students as the focus, so the results cannot be generalized; the identification of hyperactive characteristics was based on behavioral observations and not clinical diagnoses; the study only lasted two cycles without a comparison group; Assessments were conducted by the same observer in each cycle, minimizing subjectivity through rubrics and triangulation. However, inter-rater reliability has not been documented. Furthermore, the concentration indicator is operationalized through observable behavior, and there are differences in fraction material between cycles that could potentially influence test results.

Practically, research findings indicate that concentration in students with hyperactive characteristics can be improved through learning that provides structured space for movement and interaction, rather than simply restricting student activity. Implementations that teachers can consider include the use of appropriate boards and question cards, short movement activities and apperception, explanations of rules through posters and examples of games, forming small groups with peer guidance, rotating role-playing, time limits for answers, and providing reinforcement and group points. Implementation should also be accompanied by reflection with peers and monitoring of each student's progress, so that success is not solely assessed based on the class average.

4. CONCLUSION

Based on the results of the classroom action research conducted over two cycles, the following conclusions can be drawn.

1. The implementation of the educational game "Snakes and Ladders" in Mathematics learning was implemented through planning, action, observation, and reflection. Improvements in the action in Cycle II included forming small groups, assigning roles in rotation, presenting rules through posters and game examples, providing time limits for answers, and providing immediate reinforcement. These improvements helped to structure the learning process.
2. Student concentration improved during the action. The average class concentration increased from 52.08% in the pre-cycle to 67.50% in Cycle I and 86.25% in Cycle II. Meanwhile, the average concentration of four students exhibiting hyperactive characteristics increased from 39.58% to 58.33% and 82.29%, respectively. The group of four students achieved an average score of Very Good; three of the four students scored above 80%, while one student (S3) remained in the Good category with a score of 79.17%. In Cycle II, all students achieved Good or Very Good performance, while 90% of students achieved a concentration score of at least 80%. Thus, the criteria for successful action set in the study were achieved in Cycle II.
3. Teachers' teaching skills improved from 70.83% in Cycle I to 91.67% in Cycle II. Furthermore, the average Mathematics test score increased from 66.50 in the pre-cycle to 85.00 in Cycle II, while the classical mastery score increased from 60% to 100%. These test results provide supporting data for learning development and should be interpreted taking into account the differences in the material tested in each cycle.

The research findings indicate that the educational game "Snakes and Ladders," accompanied by appropriate classroom management and supporting strategies, can be an alternative action to

Multidisciplinary Indonesian Center Journal (MICJO)
Journal page is available to
https://e-jurnal.jurnalcenter.com/index.php/micjo
Email: admin@jurnalcenter.com

improve the concentration of students with hyperactive characteristics in the classroom context studied. These results are not intended to prove that the game will produce the same results in all classes or learning conditions.

5. REFERENCES

Afandi, R. (2015). Pengembangan media pembelajaran permainan ular tangga untuk meningkatkan motivasi belajar siswa dan hasil belajar IPS di sekolah dasar. *JINoP (Jurnal Inovasi Pembelajaran), 1*(1), 77–89. https://doi.org/10.22219/jinop.v1i1.2450

Aisyah, S., Nurmala, M. D., & Handoyo, A. W. (2023). Pengembangan media permainan ular tangga untuk meningkatkan konsentrasi belajar siswa. *Ristekdik: Jurnal Bimbingan dan Konseling, 8*(4), 588–595. https://doi.org/10.31604/ristekdik.2023.v8i4.588-595

Amali, U., Setiyoko, D. T., & Fitri, R. M. (2025). Penerapan media interaktif berbasis game ular tangga untuk meningkatkan konsentrasi belajar siswa SDN Karangdempel 01. *Pendas: Jurnal Ilmiah Pendidikan Dasar, 10*(2). https://doi.org/10.23969/jp.v10i02.28530

Barkley, R. A. (2015). *Attention-deficit hyperactivity disorder: A handbook for diagnosis and treatment* (4th ed.). New York, NY: Guilford Press.

Djamarah, S. B. (2015). *Psikologi belajar*. Jakarta, Indonesia: Rineka Cipta.

Fitriani, E., & Hamdu, G. (2021). Penggunaan permainan edukatif dalam meningkatkan aktivitas belajar siswa sekolah dasar. *Jurnal Pendidikan Dasar, 12*(2), 145–154.

Hurlock, E. B. (2017). *Psikologi perkembangan: Suatu pendekatan sepanjang rentang kehidupan* (Edisi ke-5). Jakarta, Indonesia: Erlangga.

Ismaya, E. A. (2022). *Pembelajaran matematika di sekolah dasar*. Kudus, Indonesia: Badan Penerbit Universitas Muria Kudus.

Ismaya, E. A. (2023). *Psikologi pendidikan untuk sekolah dasar*. Kudus, Indonesia: Badan Penerbit Universitas Muria Kudus.

Ismaya, E. A., Setiawan, D., & Fathurohman, I. (2021). *Karakteristik peserta didik sekolah dasar*. Kudus, Indonesia: Badan Penerbit Universitas Muria Kudus.

Lumbantobing, W. L., Silvester, & Dimmera, B. G. (2022). Penerapan media permainan ular tangga untuk meningkatkan minat dan hasil belajar peserta didik sekolah dasar di wilayah perbatasan. *Sebatik, 26*(2). https://doi.org/10.46984/sebatik.v26i2.2170

Maulidah, H., & Listrianti, F. (2024). Optimalisasi permainan ular tangga dalam meningkatkan konsentrasi siswa MI Az Zainiyah II Karanganyar. *Pendas: Jurnal Ilmiah Pendidikan Dasar, 10*(1). https://doi.org/10.23969/jp.v10i01.23522

Miles, M. B., Huberman, A. M., & Saldaña, J. (2020). *Qualitative data analysis: A methods sourcebook* (4th ed.). Thousand Oaks, CA: Sage Publications.

Paulina, C., Rokmanah, S., & Syachruroji, A. (2023). Efektivitas penggunaan model game based learning dalam pembelajaran matematika di SD. *Jurnal Pendidikan Tambusai, 7*(3). https://doi.org/10.31004/jptam.v7i3.12114

Santrock, J. W. (2018). *Educational psychology* (6th ed.). New York, NY: McGraw-Hill Education.

Slameto. (2018). *Belajar dan faktor-faktor yang mempengaruhinya*. Jakarta, Indonesia: Rineka Cipta.

Solichah, U., Barriyah, I. Q., & Nisa, A. F. (2024). Peningkatan interaksi sosial dan hasil belajar melalui media permainan ular tangga di sekolah dasar. *SOSIOHUMANIORA: Jurnal Ilmiah Ilmu Sosial dan Humaniora*. https://doi.org/10.30738/sosio.v11i2.19989

Sugiyono. (2022). *Metode penelitian kuantitatif, kualitatif, dan R&D*. Bandung, Indonesia: Alfabeta.

Sukmadinata, N. S. (2021). *Metode penelitian pendidikan*. Bandung, Indonesia: Remaja Rosdakarya.

Vygotsky, L. S. (1978). *Mind in society: The development of higher psychological processes*. Cambridge, MA: Harvard University Press.

Winkel, W. S. (2014). *Psikologi pengajaran*. Yogyakarta, Indonesia: Media Abadi.

Wiryanto, & Anggraini, D. (2021). Pemikiran Ki Hadjar Dewantara tentang pendidikan dan relevansinya pada pendidikan abad 21. *Jurnal Pendidikan Indonesia, 2*(1), 45–53.