SNAKES AND LADDERS GAME: AN EFFORT TO BOOST STUDENTS' LEARNING OUTCOMES

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Abstract

This study aims to evaluate student learning outcomes through the use of the Snakes and Ladders game. This research is a Classroom Action Research (CAR) conducted in cycles, including the stages of planning, action, observation, and reflection. The study was carried out in the 5th-grade class at MIN 15 Aceh Barat during the first semester of the 2022/2023 academic year. The sample comprised 22 students. Data collection techniques included observation, testing, and documentation, with data analyzed descriptively and qualitatively. The results indicate that: (1) The classical student learning outcomes in the pre-cycle were 0%, increased to 31.82% in Cycle I, and further improved to 86.36% in Cycle II, reaching a good category. (2) The teacher's ability to use the Snakes and Ladders game was rated as fairly good in Cycle I at 2.9 and improved to 3.5 in Cycle II, categorized as good. (3) Student responses to learning with the Snakes and Ladders game were positive, with an average percentage of agreement and strong agreement at 96.4%. It can be concluded that student learning outcomes can be enhanced through the use of the Snakes and Ladders game in teaching spatial shapes at MIN 15 Aceh Barat.

Keywords: *Snakes and Ladders Game; Learning Outcomes; Spatial Shapes*

INTRODUCTION

Improving student learning outcomes is one of the main focuses in the field of education, particularly at the elementary school level. Learning outcomes not only serve as an indicator of students' success in understanding the material but also reflect the effectiveness of the teaching strategies applied by the teacher (Aulia & Syahid, 2023; Darmayoga & Suparya, 2021; Fauhah & Rosy, 2021). However, in reality, many students face difficulties in achieving optimal learning outcomes, especially in subjects that require the understanding of abstract concepts, such as geometry. Improving student learning outcomes is one of the main goals of education, especially in the face of increasingly complex globalization challenges that demand mastery of 21st-century competencies. Learning outcomes reflect the extent to which students can achieve the learning objectives that have been set, in terms of cognitive, affective, and psychomotor aspects. However, various studies show that student learning outcomes often do not meet expectations, particularly in subjects that require understanding of abstract concepts, such as mathematics (Apriyanto & Herlina, 2020; Awaludin dkk., 2021; Hafinda, 2022). This issue is not only caused by the level of difficulty of the material but also by teaching methods that are not varied, lack active student involvement in the learning process, and fail to create an enjoyable learning atmosphere.

In thematic learning, educators are required to innovate in their teaching, not only focusing on printed textbooks and images as learning media. This makes students less motivated to learn, leading to a decline in learning outcomes, so the use of games in learning is highly recommended. Moreover, the use of games must be tailored to the students' thinking patterns or understanding of the material, where students are still transitioning from simple to more complex thinking, or from concrete to abstract (Amris & Desyandri, 2021; Perdana & Suswandari, 2021). At the elementary school age, students prefer learning that involves play or concrete activities, as Piaget suggested, dividing student development into four stages: sensorimotor, preoperational, concrete operational, and formal operational. The use of learning media in the teaching and learning process can stimulate new desires and motivations, arousing interest and enthusiasm, so that students are more engaged in studying a subject. A teacher is expected to use media that helps convey the material. Media serve as a bridge between the teacher and students, making it easier for students to receive and understand the material (Darmayoga & Suparya, 2021; Hamka & Effendi, 2019). One such medium is the Snakes and Ladders game. This game, developed from a traditional game, is adapted to suit the characteristics of the students with the goal of achieving learning objectives as an information gateway for students. The advantages of the Snakes and Ladders learning medium include students learning while playing, students learning in groups rather than individually, the assistance provided by the pictures in the game, and the fact that it does not require expensive resources to create the game. Additionally, the Snakes and Ladders game can also improve student learning outcomes.

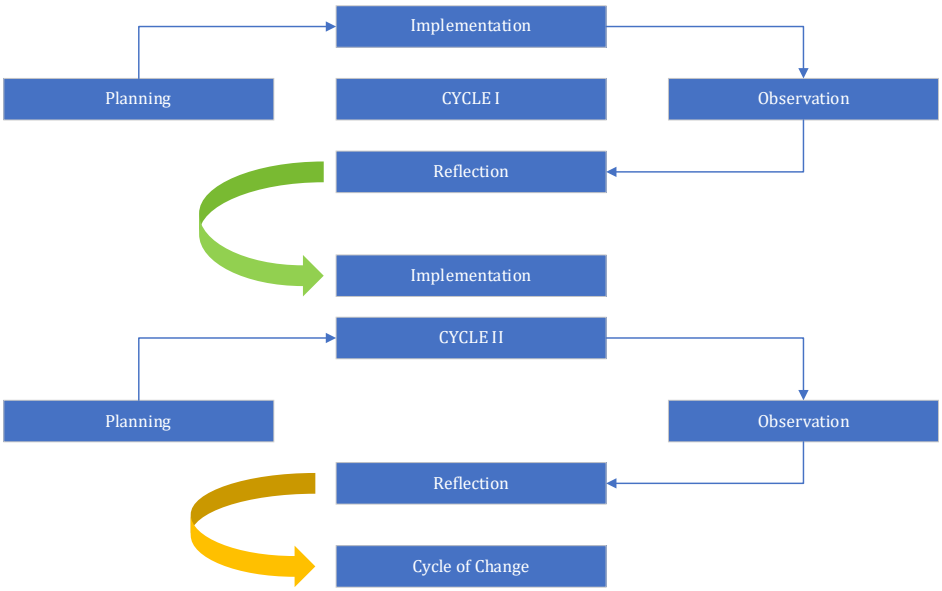
A document study on student learning outcomes in geometry materials showed that 8 students completed their learning, while the remaining 14 students did not complete it, out of a total of 22 students in class VB. This was caused by a lack of student interest in learning, leading to outcomes that did not meet the average Minimum Completeness Criteria (KKM) of 75. Based on interviews with the mathematics teacher in class VB of MIN 15 Aceh Barat, it was found that the current teaching process still uses lecture, discussion, and question-and-answer methods. The learning media used by the teacher is only the textbook provided by the school. This is due to the lack of facilities and infrastructure that could support students in exploring knowledge, which contributes to the decline in learning outcomes. An initial observation by the researcher in class VB on geometry materials in mathematics showed that during the teaching process, the mathematics textbook was used and students were only given many notes. Conventional methods, such as lectures, discussions, and question-and-answer, were used with media in the form of textbooks provided by the school. This made the learning process passive, monotonous, and boring, causing students to talk amongst themselves, leave the classroom during lessons, or even ignore the material being taught. MIN 15 Aceh Barat, located in a coastal village, lacks sufficient school facilities, resulting in mathematics learning outcomes that have not met the Minimum Completeness Criteria (KKM). Based on the explanation above, the researcher is interested in conducting a study on the use of the Snakes and Ladders game to improve learning outcomes in geometry at MIN 15 Aceh Barat. Furthermore, the researcher is interested in this study because it is expected to contribute to the teaching process and improve student learning outcomes.

Student learning outcomes are influenced by various factors, including motivation, interest, involvement, and the learning environment. When students are not motivated or interested in the material presented, the learning process becomes less meaningful, making it difficult for learning outcomes to improve. In this context, it is important for teachers to create engaging, interactive, and relevant learning experiences for students (Anggri & Wathon, 2022; Khomsin & Rahimmatussalisa, 2021). One approach that can be used is the utilization of game-based learning media, such as the Snakes and Ladders game. The Snakes and Ladders game is a learning medium that can help overcome student boredom in learning (Grady, Karnadi, & Yulianto, 2014). This game not only offers a fun learning environment but also allows students to learn collaboratively and actively. Through this game, students can understand learning concepts through activities involving competition, strategy, and experiential learning. Previous research has shown that game-based learning media can improve motivation, active participation, and learning outcomes.

Improving learning outcomes through innovative learning media such as the Snakes and Ladders game also supports the 21st-century learning paradigm, where students are not only required to understand the material cognitively but also to engage with affective and psychomotor aspects (Rahman, 2022). Additionally, using this game provides an opportunity for teachers to develop their pedagogical skills in designing more creative and effective teaching strategies. Based on the issues and potentials described above, this study aims to evaluate the effectiveness of the Snakes and Ladders game in improving student learning outcomes in geometry. Using the Classroom Action Research (CAR) approach, this study focuses not only on improving student learning outcomes but also on enhancing the overall learning process. The findings of this study are expected to serve as a reference for teachers and educational practitioners in optimizing learning media to achieve better learning outcomes.

METHOD RESEARCH

The type of research used in this study is Classroom Action Research (CAR), with the population being all students of MIN 15 Aceh Barat and the sample consisting of class VB with 22 students, using purposive sampling technique. The data collection techniques in this study are tests and documentation. The research procedure involves cyclical activities, and the cycle will stop if the learning reaches the success indicators that have been determined. This study consists of 2 cycles, with each cycle consisting of several stages: planning, implementation, observation, and reflection. For more clarity, the design of the classroom action research can be seen in the following figure below:



Next, the data on the use of the Snakes and Ladders game will be analyzed descriptively using the average score.

Average Score	Description
$1{,}00 \leq \boldsymbol{PB} < \mathbf{1,50}$	Poor
$1{,}50 \leq \boldsymbol{PB} < \mathbf{2,50}$	Fairly Poor
$2{,}50 \leq \boldsymbol{PB} < \mathbf{3,50}$	Adequate
$3{,}50 \leq \boldsymbol{PB} < \mathbf{4,50}$	Good
$4{,}50 \leq \boldsymbol{PB} < \mathbf{5,00}$	Excellent

Figure of Descriptive Analyze

The data on learning outcomes and student responses will be analyzed using the percentage formula:

$$P = \frac{Amount\ obtained}{Total\ amount} \times 100\%$$

Student learning completeness refers to the Minimum Completeness Criteria (KKM) score applied by the school, which is KKM ≥ 75 from the total test score, while for classical learning completeness, ≥ 85% of the students in the class must have achieved the learning objectives. The following criteria will be used:

Percentage	Description
$0\% \leq \boldsymbol{PB} \leq \mathbf{25}\%$	Poor
$25\% \leq \boldsymbol{PB} \leq \mathbf{50}\%$	Fairly Poor
$50\% \leq \boldsymbol{PB} \leq \mathbf{75}\%$	Good
$75\% \leq \boldsymbol{PB} \leq \mathbf{100}\%$	Excellent

Figure of Criteria Student Learning Objective

FINDING AND DISCUSSION

The implementation of the Snakes and Ladders game on spatial shapes material in class VB MIN 15 Aceh Barat was carried out in two cycles. Each cycle

follows the approach of Kemmis and McTaggart, which includes planning, action, observation, and reflection. For further clarity, the following explanation is provided:

a. Planning

In the planning stage, the researcher needs to prepare everything related to the learning process, which includes: the teacher preparing the Lesson Plan (RPP), preparing Snakes and Ladders game images, creating instruments, preparing teacher and student observation sheets, and making test questions.

b. Implementation

Preliminary Activities

- The teacher greets the students, and the students respond.
- The teacher asks the students to lead the prayer before starting.
- The teacher checks the students' attendance by calling out their names according to the class list.
- Before starting the lesson, the teacher motivates the students to stay enthusiastic about the upcoming lesson and relate it to the previous lesson.
- The teacher opens the lesson and introduces the lesson material.

Core Activities

- The teacher explains the material on spatial shapes and discusses the elements of spatial shapes.
- Students listen to and take notes on the teacher's explanation.
- The teacher divides the students into several groups and assigns numbers to each group.
- Students work on the worksheets given by the teacher in groups, discussing together.
- Students play the Snakes and Ladders game in groups and fill out questions about the spatial shapes material, which includes cube, rectangular prism, and combined cube-rectangular prism.
- Students complete the test questions provided by the teacher.

Closing Activities

- The teacher conducts a reflection on the learning outcomes.
- The teacher and students together summarize the results of the lesson.
- The teacher briefly explains the material to be taught in the next meeting.
- The teacher motivates the students.
- The teacher ends the lesson with a greeting.

After conducting the lesson using the Snakes and Ladders game on spatial shapes in class VB, the learning outcomes obtained are as shown in the table below:

Table of Student Learning Outcomes

No	Student Name	Initial Score	Cycle 1	Cycle 2
1	Student 1	30	50	80
2	Student 2	40	80	90
3	Student 3	50	50	80
4	Student 4	20	80	80
5	Student 5	0	50	90

No	Student Name	Initial Score	Cycle 1	Cycle 2
6	Student 6	40	60	80
7	Student 7	50	20	20
8	Student 8	30	60	80
9	Student 9	30	70	80
10	Student 10	20	50	80
11	Student 11	50	40	80
12	Student 12	60	70	90
13	Student 13	50	80	80
14	Student 14	40	60	80
15	Student 15	30	20	40
16	Student 16	40	60	60
17	Student 17	30	40	90
18	Student 18	50	100	100
19	Student 19	40	80	80
20	Student 20	40	80	80
21	Student 21	20	50	80
22	Student 22	70	100	100
Average Class Scores		37.73	61.36	78.18
Completion Levels		0%	31.82%	86.36%
Incompletion Levels		100%	68.18%	13.64%

c. Observation

The teacher observation activities were conducted by the observer, who is the teacher of class VB at MIN 15 Aceh Barat, during the teaching of the 3D shapes material using the Snake and Ladder game. The observation was carried out over two meetings within one cycle.

Table of Teacher Observation Results Using the Snake and Ladder Game

No	Aspect	Average	
		Cycle 1	Cycle 2
1	Introduction		
	a. Ability to start class (greeting, attendance and praying)	4	4
	b. The teacher's ability in apperception makes connections related to learning materials.	3	3.5
	c. Teachers' ability to invite students to start learning with ice breaking	2.5	4
	d. Teachers' ability to inform learning steps	2.5	4
2	Core activities		
	a. Teacher's ability to deliver the material being taught	3	3.5
	b. Teachers' ability to manage the class well	2	3
	c. Teachers' ability to ask questions and answers to students	3	3.5
	d. Teachers' ability to direct students to find answers	2	3.5
	e. Teachers' ability to form groups	3	2.5
	f. Teacher's ability to explain instructions for the snakes and ladders game	2	3

	g. The teacher's ability to encourage students to ask questions, express opinions or answer questions	2.5	4
	h. Teacher's ability to guide playing snakes and ladders	2.5	3
	i. The teacher's ability to appreciate various student opinions and give appreciation for student learning outcomes as learning motivation.	3	4
	j. Ability to evaluate student learning outcomes	4	4
3	Closing		
	a. The teacher provides reinforcement regarding the material that has been studied.	4	4
	b. Teachers' ability to direct students to draw conclusions from learning outcomes	3	4
	c. Time management skills	3	3
	Average	**2.9**	**3.58**

d. Reflection

The student learning outcomes in Cycle 1 did not reach the classical completion target of 85%. In Cycle 1, the learning outcomes were still poor, with only 31.82% achieving the target, indicating the need to review the material and related questions on the topic of solid shapes in Cycle 2. The use of the Snake and Ladder game by the teacher was not yet proficient, both in terms of the steps involved and the teaching process. The average teaching ability of the teacher on the topic of solid shapes in Class VB was 2.9, which falls into the "adequate" category according to the teacher's competence indicators, thus requiring a review in Cycle 2.

Student learning outcomes in Cycle 2 improved and were considered successful, achieving classical completeness with a percentage of 86.36%, which meets the classical completeness target of 85%. Therefore, no review is needed for Cycle 3. The teacher's mastery of the Snake and Ladder game was classified as good, as the score fell between 3.50 and 4.50, and no further review of the solid shapes material is necessary in Cycle 3.

e. Student Responses

The student responses in Cycle 2 were conducted in the second meeting after the teacher gave the test to the students. Based on the learning activities, the responses from the students in Class VB were as follows:

Table of Student Responses

No	Statement	Percentage			
		Strongly agree	Agree	Don't agree	Strongly Disagree
1	The snakes and ladders game are very useful for spatial geometry material.	59.09	36.36	4.55	0
2	Learning to build space using the snakes and ladders game is more exciting	63.64	36.36	0	0

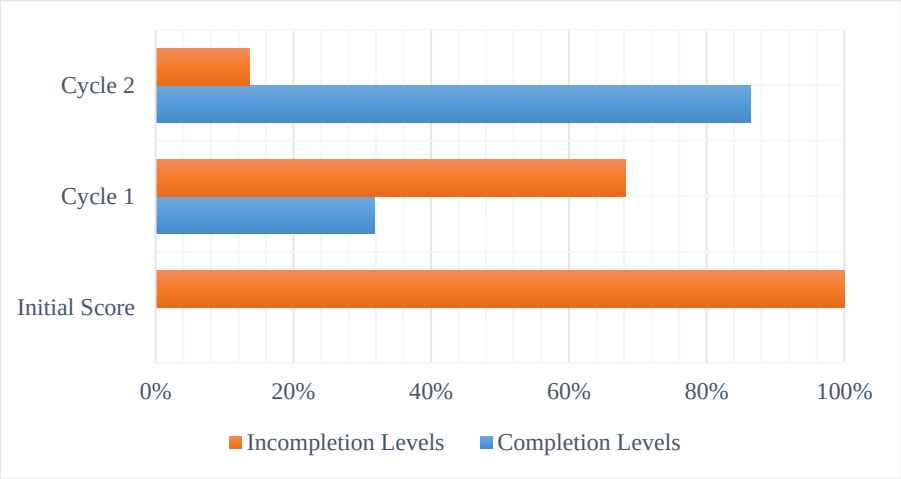
3	game makes I am confused inunderstand the material of spatial structures	9.09	4.55	9.09	77.27
4	Learning to build space using snake game stairs are just a waste time for me	0	4.55	22.72	72.23
5	Use of the snakes and ladders game make me understand more regarding the material of spatial structures	72.23	22.72	4.55	0
6	Snakes and ladders game makes I found more enthusiasm Study	68.18	31.82	0	0
7	Learning to build space using snake game stairs make me more motivated	95.45	4.55	0	0
8	Learn to use snakes and ladders create a classroom atmosphere noisy	0	4.55	9.09	86.36
9	I feel like I'm at a loss learning the material build space using snakes and ladders game	0	0	27.27	72.73
10	In my opinion, learning building materials space using snake game stairs make me sleepy	4.55	0	18.18	77.27

DISCUSSION

The results of this study show that the snake and ladder game is an effective learning media to improve students' learning outcomes on the topic of spatial geometry. The improvement from the pre-cycle to the second cycle reflects that game-based learning can overcome student boredom, create a more interactive learning environment, and increase their motivation to learn. This is in line with Piaget's learning theory, which states that at the concrete operational stage, students better understand concepts through direct experience and visual media (Lestari, 2021; Lumbantobing, Silvester, & Dimmera, 2022). By using games as a learning medium, students not only learn through direct instruction but also through the play experience, which involves cognitive, affective, and social aspects. Furthermore, the application of the snake and ladder game creates a more dynamic classroom environment and actively engages students in the learning process. This medium allows students to collaborate in small groups, solve problems, and learn from their peers. These activities not only enhance concept understanding but also develop students' social skills. In the context of mathematics learning, where students often feel bored or intimidated by what they consider difficult material, game-based approaches like this provide a more relaxed atmosphere and support (Puspita dkk., 2022; Yanti, Affandi, & Rosyidah, 2021).

The students' learning outcomes at MIN 15 Aceh Barat, after the implementation of the snake and ladder game in the teaching and learning process, showed improvement. The learning outcomes after the snake and ladder game was applied to the topic of spatial geometry are as follows:

Figure of Learning Outcome Improvement



Based on the graph above, it is evident that there has been an improvement in learning outcomes in the spatial geometry topic for fifth-grade students at MIN 15 Aceh Barat, who have reached the Minimum Completion Criteria (KKM). Before the implementation of the snake and ladder game on the spatial geometry topic, students' learning outcomes were still low, as evidenced by initial data showing that out of 22 students, none achieved the completion criteria. After the snake and ladder game was implemented in Cycle I, there was an improvement, with 7 students (31.82%) achieving the completion criteria, while 15 students (68.18%) did not. In Cycle II, with 22 students, 19 students (86.36%) achieved the completion criteria, and 3 students (13.64%) did not. From this data, it can be concluded that the application of the snake and ladder game in the spatial geometry topic for fifth-grade students at MIN 15 Aceh Barat has successfully improved students' learning outcomes.

Based on the presented graph, interpretation and analysis can be made regarding the progression of the completion and non-completion levels at three different evaluation stages: Initial Score, Cycle 1, and Cycle 2. The graph compares the Completion Rate (in blue) and Non-Completion Rate (in orange) at each evaluation stage. In the Initial Score, the Completion Rate was 0%, while the Non-Completion Rate was 100%, indicating that no participants met the completion criteria in this stage. This suggests that participants did not fully understand the material, or there were other factors preventing them from achieving the completion criteria at the beginning of the learning process.

In Cycle 1, there was a significant improvement. The Completion Rate increased to about 40%, while the Non-Completion Rate decreased to around 60%. The 40% increase in Completion Rate indicates a positive impact from the learning or intervention applied during the first cycle. Although 60% of participants still did not reach completion, the decrease in the Non-Completion Rate shows that the efforts to enhance understanding are starting to yield tangible results. This first cycle may still need some adjustments in teaching methods or strategies to more effectively reach completion. However, the most notable result is in Cycle 2. At this stage, there was a dramatic change, with the Completion Rate rising sharply to about 90%, and the Non-Completion Rate falling to just 10%. This result shows that the

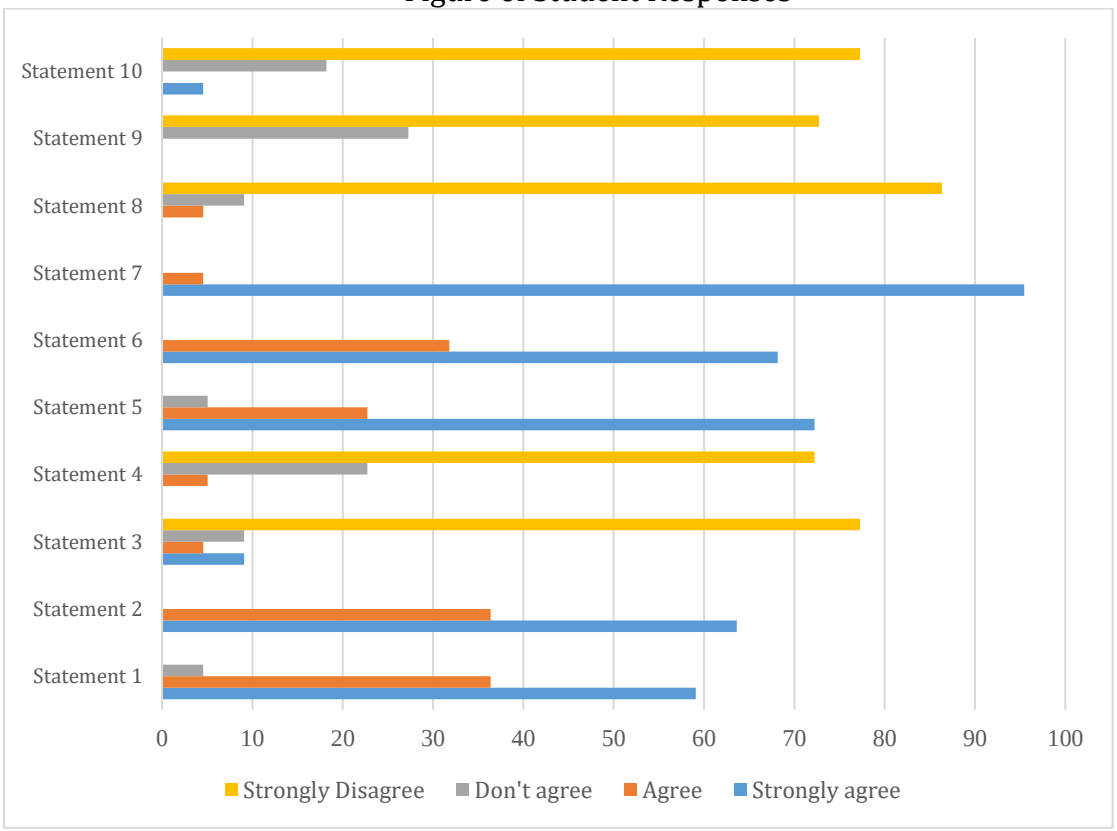
learning or intervention applied in Cycle 2 was highly effective. The sharp decrease in the Non-Completion Rate and the significant increase in the Completion Rate indicate that participants better understood the material, and the majority achieved completion in the evaluation. This also shows that the second cycle successfully overcame many obstacles from the previous cycle, whether in teaching strategies, content delivery, or evaluation methods.

Overall, this graph reflects a positive trend of improvement over time. The gradual increase in completion from 0% in the Initial Score to 90% in Cycle 2 shows that the learning process has significantly progressed and delivered satisfactory results. The learning, which began with a high non-completion rate at the start, gradually improved through evaluation and adjustments in Cycle 1, ultimately leading participants to optimal results in Cycle 2. However, about 10% of participants still did not reach completion in Cycle 2. This suggests that while the majority of participants have understood the material well, there are still certain factors that need to be addressed further to achieve perfect completion. Therefore, a deeper evaluation of the participants who did not complete should be conducted, both in terms of teaching and the approach used. The results from Cycle 2 can be used as a basis for improving any shortcomings and maintaining the elements that were successful in increasing participants' completion rates in the future.

The teacher's ability after the implementation of the snake and ladder game showed improvement in Cycle II. Based on the results, in Cycle I (meetings 1 and 2), the average score was 2.9, which was categorized as "good enough" for teacher ability standards. In Cycle II, meetings 1 and 2 showed an improvement to 3.58, categorized as "good." A teacher's ability is considered successful if it is in the "good" or "very good" category. In the teaching and learning process, a teacher's ability is crucial. The better the teacher's ability, the better the students' understanding of the material. The standard for teacher competence is to be a good and professional teacher, with the competence to fulfill the functions and objectives of the school in particular, and educational goals in general. Based on the data above, we can see that the teacher's ability in Cycle I had an average score of 2.9, while in Cycle II, it was 3.58, showing an increase of 0.6, which falls into the "good" category, according to teacher ability standards.

Student responses were used to answer questions regarding their satisfaction with the teaching process. In this study, the researcher used the snake and ladder game as a learning medium, and the student responses can be seen as follows:

Figure of Student Responses



Based on the graph above, it shows that, first, statement 7 has the highest level of agreement, with the majority of respondents selecting "Strongly Agree" (blue), reaching nearly 90%. This indicates that the topic addressed in statement 7 received strong consensus from most respondents, reflecting significant agreement or support. In contrast, this statement received very few answers from the "Agree" or "Disagree" categories, allowing us to conclude that perceptions of statement 7 have a high level of clarity and certainty among the respondents. Second, statements 6 and 2 are also interesting to examine. Statement 6 received a dominant response in the "Agree" (orange) category, while "Strongly Agree" also occupied a significant position, though not dominating as in statement 7. This shows that most respondents tend to agree with this statement but still exhibit variation in their level of agreement. On the other hand, statement 2 received fairly balanced responses between "Strongly Agree" and "Agree," with the "Strongly Disagree" category being quite low, indicating that only a few respondents had strong opposition to the statement. Third, statements 9 and 8 show a dominance of responses in the "Strongly Disagree" (yellow) category, which is a significant highlight. These statements clearly generate a divergence of perceptions, with many respondents providing negative responses. This phenomenon needs further analysis because the dominance of the "Strongly Disagree" category signals strong dissatisfaction or rejection of the issue or opinion presented in these two statements. In other words, there might be underlying problems or differences in expectations among the respondents that need further exploration. Fourth, some other statements, such as statements 1, 3, and 4, show more varied distribution across all categories. Statement 1, for example, has a balance between "Agree" and "Strongly Agree"

answers, with some respondents selecting "Disagree" and "Strongly Disagree." This variation indicates that respondents' perceptions of the topic in statement 1 are not entirely homogeneous, but rather reflect diverse viewpoints. Similarly, statement 4 is notable because it has significant responses in both "Strongly Disagree" and "Strongly Agree" categories, showing a sharp polarization of opinions.

Overall, this graph illustrates the complexity of the diverse opinions among respondents on the ten statements presented. Some statements, like statement 7, show strong consensus, while statements 8 and 9 reflect massive rejection. Meanwhile, statements with more evenly distributed responses highlight the diversity of perspectives that should be considered in a deeper analysis. From this, it can be concluded that the themes or issues addressed in these statements reflect the complex social reality, where respondents' perceptions are greatly influenced by individual experiences, values, and backgrounds.

Significant improvement in learning outcomes can also be linked to the teacher's ability in facilitating game-based learning (Fransisca, Wulan, & Supena, 2020; Setiawati, 2021). The increase in the average teacher ability score from Cycle I to Cycle II reflects the teacher's adaptation to the new method, such as utilizing elements of competition and collaboration in the game to engage students. This supports the 21st-century learning paradigm, where teachers are expected to be creative facilitators who can utilize various learning media to optimize student learning outcomes (Bahiroh & Sari, 2023; Wati, 2021; Zuhriyah, 2020). Furthermore, the results of this study are consistent with previous findings that stated that game-based learning media can increase active student participation and understanding of the material. The snake and ladder game, with its visual and interactive elements, enables students to more easily understand spatial geometry concepts that were previously considered abstract. The playing activity also reduces boredom in the learning process, making students more focused and motivated to learn.

The effectiveness of the snake and ladder game can also be seen from how it helps connect abstract concepts to concrete experiences. For example, the topic of spatial geometry, which includes cubes, rectangular prisms, and their combinations, is often difficult for students to understand if only explained through lecture methods (Andriani & Wahyudi, 2023; Muqdamien, Umayah, Juhri, & Raraswaty, 2021; Nurussofa & Astuti, 2023; Suciati, 2021). However, with the snake and ladder game, students can visualize these concepts through visual elements in the game, such as images of spatial figures and interactive questions designed to stimulate critical thinking (Kurniadi, 2021; Putra, Sullystiawati, & Sari, 2023; Siregar & Ananda, 2023). Additionally, this research highlights the important role of the teacher in managing game-based learning. In Cycle I, the teacher's ability to facilitate the game was still in the "good enough" category, indicating that adaptation to the new method required time and learning. However, the increase in the teacher's ability score in Cycle II shows that the teacher was able to learn from experience and improve their approach in utilizing the game as a learning tool. A skilled teacher in managing the game can create a balance between entertainment and learning, ensuring that academic objectives are met without sacrificing fun elements (Anniza,

Ramadianti, & Riwayati, 2024; Halidah dkk., 2024; Haris, 2022; Nawafilah & Masruroh, 2020).

This study also emphasizes the importance of student motivation in improving learning outcomes. The snake and ladder game, with its elements of healthy competition and clear rewards, encourages students to be more enthusiastic about following the lessons (Anisa, Cahyadi, & Rahmawati, 2023; Mu'aafat & Rahmawati, 2024; Yantini, Untari, & Listyarini, 2021). This motivation is reflected in student responses, where the majority stated that they felt more motivated and found it easier to understand spatial geometry material. This increased intrinsic motivation directly contributed to the significant improvement in learning outcomes from the pre-cycle to Cycle II.

However, this study has some limitations that should be noted. First, the relatively small sample size limits the generalization of these findings to a broader population. Second, this study focused solely on the spatial geometry topic, so the effectiveness of the snake and ladder game on other topics has not been confirmed. Additionally, external factors such as the learning environment and available facilities may also influence the research outcomes. Therefore, further studies are needed involving larger samples, various learning topics, and more diverse conditions to test the consistency of these results.

This research provides significant implications for the world of education, particularly in the context of learning based on innovative media. Teachers are encouraged to continue exploring and utilizing learning media that are engaging and relevant to students' needs. The use of the snake and ladder game, for instance, not only provides an alternative learning method but also supports the development of 21st-century skills such as collaboration, communication, and problem-solving. Moreover, the results of this study indicate that training for teachers in implementing innovative learning media is crucial to ensure the effectiveness of these methods. On a larger scale, these findings are also relevant for education policymakers. Investment in the development of creative learning media and teacher training can have a significant positive impact on student learning outcomes. As educational challenges in the modern era become more complex, innovative approaches such as game-based learning can serve as an effective solution to create meaningful and enjoyable learning experiences for students.

CONCLUSION

Based on the research findings, it can be concluded that the snake and ladder game is effective in improving student learning outcomes in spatial geometry material in class VB at MIN 15 Aceh Barat. The learning mastery increased from 0% in the pre-cycle to 86.36% in Cycle II, with the average class score rising from 37.73 to 78.18. The teacher's ability to manage game-based learning also improved, from a "good enough" category in Cycle I to a "good" category in Cycle II. Student responses to learning using the snake and ladder game were very positive, with the majority of students feeling more motivated and better understanding the material. These findings reinforce that game-based learning media, such as snake and ladder, can be an effective alternative for improving student learning outcomes, especially

in material that requires understanding of abstract concepts. This research also provides practical implications for teachers to develop more creative and engaging learning strategies to create a fun and productive learning environment. However, further research with a wider scope is needed to explore the application of this game media to other learning topics.

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