Prima: Jurnal Pendidikan Matematika
Vol. 10, No. 1, January 2026, pp. 34 - 53
P-ISSN: 2579-9827, E-ISSN: 2580-2216
Web: http://jurnal.umt.ac.id/index.php/prima

DEVELOPMENT OF SNAKES AND LADDERS EDUCATIONAL GAME AND STUDENTS' LEARNING OUTCOMES ON THE PROBABILITY MATERIAL IN GRADE VIII OF SMP

Windi Veber Yanti Sembiring[1], Fibri Rakhmawati[2]
Pendidikan Matematika, Fakultas Ilmu Tarbiyah dan Keguruan, Universitas Islam Negeri Sumatera Utara
Jl. Williem Iskandar Psr V Medan Estate
e-mail: [1]windi0305213133@uinsu.ac.id ; [2]fibrirakhmawati@uinsu.ac.id

Abstract

This study aims to develop and test the feasibility of the snakes and ladders educational game media on probability material for grade VIII junior high school. The background of this study departs from the results of interviews with teachers who showed that students still have difficulty understanding the concept of probability because learning tends to be conventional and less interactive. This study uses a 4D development model (Define, Design, Develop, and Disseminate). Data collection techniques include interviews, expert validation questionnaires, teacher and student response questionnaires, and learning outcome tests (pretest and posttest). The results showed that the snakes and ladders educational game media is valid for use in learning, with validation scores from media experts of 87.5% and material experts of 95.83%, both of which are in the very valid category. From the practical aspect, the media is considered very practical, with an average student response of 87% and a teacher response of 93.37%. The effectiveness of the media is shown through an increase in student learning outcomes with an average N-Gain score of 76.52% in the high category. Thus, the snakes and ladders educational game has proven valid, practical, and effective in enhancing understanding of the concept of probability and creating a fun, interactive, and meaningful learning environment. This medium is suitable for use as an innovative alternative in mathematics learning at the junior high school level.

Keywords: game media; snakes and ladders; learning; mathematics

.**Abstrak**

Penelitian ini bertujuan untuk mengembangkan dan menguji kelayakan media game edukasi ular tangga pada materi peluang kelas VIII SMP. Latar belakang penelitian ini berangkat dari hasil wawancara dengan guru yang menunjukkan bahwa siswa masih mengalami kesulitan memahami konsep peluang karena pembelajaran cenderung bersifat konvensional dan kurang interaktif. Penelitian ini menggunakan model pengembangan 4D (Define, Design, Develop, dan Disseminate). Teknik pengumpulan data meliputi wawancara, angket validasi ahli, angket respon guru dan siswa, serta tes hasil belajar (pretest dan posttest). Hasil penelitian menunjukkan bahwa media game edukasi ular tangga valid digunakan dalam pembelajaran, dengan skor validasi dari ahli media sebesar 87,5% dan ahli materi sebesar 95,83%, keduanya termasuk kategori sangat valid. Dari aspek kepraktisan, media dinilai sangat praktis, dengan rata-rata respon siswa 87% dan respon guru 93,37%. Keefektifan media ditunjukkan melalui peningkatan hasil belajar siswa dengan skor N-Gain rata-rata 76,52% dalam kategori tinggi. Dengan demikian, media game edukasi ular tangga terbukti valid, praktis, dan efektif dalam meningkatkan pemahaman konsep peluang serta mampu menciptakan suasana belajar yang menyenangkan, interaktif, dan bermakna. Media ini layak digunakan sebagai alternatif inovatif dalam pembelajaran matematika di tingkat SMP.

Kata Kunci: media game; ular tangga; pembelajaran; matematika

INTRODUCTION

Education is a conscious and planned effort to create a learning atmosphere and learning process that enable students to actively develop their potential, including

Received: November 5, 2025; Revised: December 6, 2025; Accepted: December 10, 2025

intellectual, emotional, social, and spiritual aspects (Umatin, 2021). According to Law No. 20 of 2003 concerning the National Education System, education aims not only to transfer knowledge but also to foster students' spiritual strength, self-control, intelligence, noble character, and essential skills needed to participate effectively in society. This indicates that meaningful learning experiences must be provided to support the holistic development of learners.

In formal education, mathematics holds a strategic position as a discipline that trains logical, analytical, and problem-solving abilities. Mathematics learning is expected to help students understand concepts in a structured and systematic manner so that they can apply these concepts in real-life situations. However, several mathematical topics remain challenging for students to master. One such topic is probability, which requires abstract reasoning, conceptual thinking, and the ability to interpret uncertain events.

Probability is introduced at the junior high school level as an essential component of mathematics that investigates randomness, sample spaces, and events. Despite its importance, students often struggle to understand fundamental probability concepts. Many students perceive probability as difficult because the concepts are abstract and not directly visible. Without the support of concrete representations or engaging activities, students tend to memorize formulas rather than understand the underlying meanings (Liana et al., 2015).

Moreover, probability requires students to analyze real-life contexts, determine sample spaces, and calculate the likelihood of events. This cognitive demand requires active engagement, but learning in practice is often dominated by teacher-centered methods. Consequently, students experience difficulty connecting probability concepts to everyday events, leading to misconceptions and low academic achievement.

Preliminary observations and interviews conducted at SMP 17 Agustus Tiga Juhar revealed several issues: a) Students experienced difficulty understanding sample spaces, events, and event probabilities. b) Learning remained dominated by conventional methods such as lectures, worksheets, and textbook explanations, creating a monotonous classroom atmosphere. c) Students tended to be passive, less confident in asking questions, and lacked motivation to engage in learning activities. d) Teachers rarely used interactive media or

technology-based instructional tools to support learning. e) Students reported feeling bored and struggling to maintain focus during probability lessons.

These findings indicate that the learning process did not provide sufficient opportunities for students to interact meaningfully with the material. This is consistent with Mulia et al. (2022), who argued that limited use of interactive media contributes to students' difficulty in mastering abstract mathematical concepts. Hamalik in Isran & Rohani (2018) further emphasized that instructional media can increase motivation, interest, and learning activity. Thus, the absence of varied learning media plays a significant role in students' low understanding

To address the identified challenges, innovative, interactive, and student-centered learning media are required. Game-based learning media have been widely recognized as effective in improving student engagement and conceptual comprehension. Games create enjoyable learning environments, reduce anxiety toward mathematics, and offer students direct experiences through active participation.

Several previous studies support the effectiveness of game-based learning: 1) Liana et al. (2015) developed comic-based media for probability learning and reported increased student engagement and understanding. 2) Setiani et al. (2022) found that the snakes and ladders game can function as an effective learning tool that stimulates collaboration, motivation, and active participation. 3) Rizki (2023) demonstrated that a snakes and ladders educational game significantly improved students' mathematical understanding, with an effectiveness level exceeding 80%. These findings highlight that games not only make the learning process more enjoyable but also support students' cognitive, affective, and psychomotor development.

Although some researchers have developed probability learning media—such as Canva-assisted media (Fauzia, 2024) and comic-based media (Liana, 2015)—very few studies have focused specifically on developing a Snakes and Ladders educational game tailored to the eighth-grade probability curriculum. Most existing educational game studies address general mathematics topics or focus on elementary school learning.

This research offers novelty because the developed snakes and ladders game: 1. Is manually designed and visually tailored to the probability content, 2. Includes question cards aligned with the eighth-grade mathematics curriculum, 3. Integrates probability

concepts directly into gameplay, 4. Provides concrete representations of abstract probability ideas, 5. Enhances collaboration, competition, and student engagement through group-based play. Thus, this study fills the research gap by offering a contextual and practical solution to probability learning difficulties at the junior high school level.

The snakes and ladders game was selected because it Is familiar to students and requires minimal explanation, Is easy to modify according to instructional objectives, Promotes active, collaborative learning, Allows the incorporation of probability questions based on the square reached, Helps students visualize outcomes, events, and possibilities through structured gameplay. Learning through play also aligns with constructivist learning theory, which emphasizes that knowledge is built through direct experiences and student involvement.

Based on the pre-research findings and the need for innovative learning media, this study aims to Develop a Snakes and Ladders Educational Game as a learning medium for the eighth-grade probability material, Assess the validity of the developed media based on expert evaluations, Determine the practicality of the media based on teacher and student responses, Evaluate the effectiveness of the media in improving students' learning outcomes, Provide teachers with an engaging and effective alternative learning tool aligned with junior high school learners' characteristics. Therefore, the development of this learning medium is expected to help students understand probability concepts in a more meaningful, interactive, and enjoyable manner while supporting teachers in implementing innovative mathematics learning strategies.

METHODS

This research is a research and development (R&D) study aimed at developing and testing the feasibility of the Snakes and Ladders educational game as a learning medium for probability in eighth-grade junior high school (Sugiyono, 2021). The model used in this study is the 4D development model developed by Thiagarajan, Semmel, and Semmel (1974). The 4D model consists of four main stages: 1. Define, 2. Design, 3. Develop, and 4. Disseminate.

The stages in the 4D development model used in this study are explained as follows:

a. Define

This stage aims to determine and define learning needs. Activities include:

1) Analysis of student and teacher needs through interviews.
2) Curriculum analysis, namely analyzing core competencies and indicators in the opportunity material.
3) Analysis of student characteristics to determine student readiness and learning styles.
4) Concept analysis, namely identifying relevant topics and subtopics.

b. Design

At this stage, the initial design of learning media products is carried out. Activities carried out include:

1) Determine the game design (snakes and ladders board, pieces, question cards, dice).
2) Design probability question content according to learning indicators.
3) Develop user instructions and game rules.
4) Develop assessment instruments for expert validation and pilot testing (questionnaires and evaluation sheets for student learning outcomes).

c. Develop

This stage aims to produce a real product and conduct feasibility tests. Activities include:

1) Initial production of the Snakes and Ladders educational game media based on the design results.
2) Validation by material experts and media experts to assess the appropriateness of the content and presentation.
3) Product revision based on expert suggestions.
4) Limited trial with eighth-grade students in the form of group games.
5) Evaluation of learning outcomes using pretests and posttests to assess student learning outcomes.

During the trial, students were instructed to play the educational game Snakes and Ladders according to the provided instructions. The game was played in groups (2-3 students per group), with steps such as rolling dice, moving pawns, answering probability questions on cards when stopping in certain squares, and following the

rules when stopping at the snake's head or under the ladder. The teacher acted as both facilitator and observer throughout the game. This trial aimed to assess the extent to which the media could enhance students' understanding of probability and to evaluate the media's appeal and effectiveness within the classroom learning context.

d. Disseminate (Penyebaran)

The dissemination stage is the final stage in the 4D development model (Define, Design, Develop, and Disseminate), which aims to disseminate and test the feasibility of the developed learning media in other school environments. At this stage, activities focus on reviewing the level of practicality and effectiveness of the media when used by teachers and students different from the initial trial location. Thus, the dissemination stage is carried out to ensure that the Snakes and Ladders Educational Game media can be applied more widely, not just limited to the school where the initial development was carried out.

This research was conducted at SMP 17 Agustus Tiga Juhar and Pesantren Tahfiz Al-Habibi, with the subjects being eighth-grade students in the 2024/2025 academic year. The instrument used for this evaluation was a Likert scale, which is generally used for quantitative analysis purposes and assigns a value to each response.

Table 1. Likert Scale

Criteria	Scoring
Ecellent	4
Good	3
Fair	2
Poor	1

Data collection was carried out through four techniques, namely interviews to identify the needs of teachers and students, expert validation questionnaires to assess the validity of the media by material and media experts, student and teacher response questionnaires to determine the practicality of the media through user responses, and learning outcome tests in the form of pretests and posttests to measure the effectiveness of the media in improving students' understanding of the material on opportunities.

RESULTS AND DISCUSSION

In this study, a learning product was developed in the form of a Snakes and Ladders Educational Game on the subject of probability by referring to the 4-D development model (Define, Design, Develop, and Disseminate).

Results

a. Define

The definition phase is the stage of determining the criteria for the media to be developed according to the students' needs. This phase includes:

Based on interviews with teachers, it was discovered that eighth-grade students still experience difficulty understanding the concept of probability because learning is still teacher-centered, using lecture methods, worksheets, and textbooks. This tends to make students passive and easily bored. Therefore, learning media that are engaging, interactive, and appropriate to the students' characteristics are needed. Eighth-grade junior high school students are in the adolescent development stage, active, cooperative, and enjoy game-based learning activities.

They also find it easier to understand abstract material when presented visually and interactively. The material selected for this media development is probability, with subtopics on sample space, events, the probability of an event, relative frequency, and the application of the concept of probability in everyday life, which aligns with the basic competencies of the eighth-grade junior high school mathematics curriculum.

The learning objectives to be achieved through the use of this media are for students to be able to determine the sample space of a simple experiment, identify simple events as part of the sample space, calculate the probability of a simple event, determine the relative frequency of an event, and apply the concept of probability in everyday life contexts.

b. Desain

At this stage, the initial design of the media to be developed is carried out. The activities carried out include:

1) Selection of media form

The media chosen was the snakes and ladders board game because it is easy to play, familiar to students, and can be modified into a means of learning mathematics.

2) Game board design

The game board is rectangular with 25 squares numbered 1 through 25. The first square is marked "START" and the last square "FINISH." Some squares feature images of ladders and snakes to represent the game's rules. The board is large enough to accommodate group play on the classroom floor.

Figure 1. Tools for Making Game Boards

Figure 2. Game Board Making Process

Figure 3. Game Board

Figure 3 shows the finished Snakes and Ladders game board. The board design is neat, with clearer snakes and ladders paths and a golden border for an attractive appearance. The board is ready to be used in the probability learning process.

3) Making pawns and dice

Pawns are used to mark player positions, while cube-shaped dice are used to determine moves. The dice are made from readily available cardboard. The following image shows the design of the dice used in the game of Snakes and Ladders. The dice are made from cardboard in a cube shape, large enough for students to use. Each side is decorated with colorful dots representing the numbers 1 through 6. This colorful design is intended to add interest and prevent students from getting bored while playing.

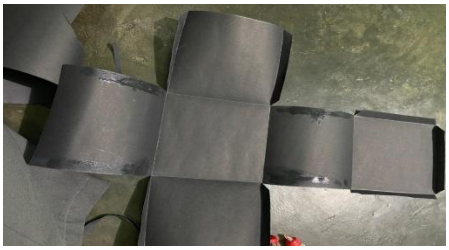

Figure 4. Dice Making Process

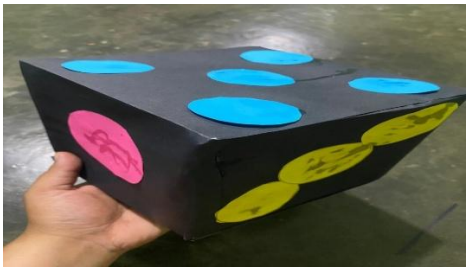

Figure 5. Dice

Figure 5 shows dice initially made from black cardboard without any numbered dots attached. After this process is complete, colored dots are attached to complete the sides of the dice. This manual manufacturing process demonstrates that dice can be made from simple and affordable materials.

4) Designing question cards

Question cards are a crucial component of this snakes and ladders game. They are designed in different colors to enhance visual appeal and differentiate the difficulty levels. Each card contains a question related to probability, ranging from determining sample spaces, simple events, the probability of an event, to its application in everyday life. The use of varied colors not only creates a fun atmosphere but also helps students become more enthusiastic about answering the questions. Furthermore, the cards are designed to be small in size for practical use and easy distribution during the game.

Figure 6. Question Card Design

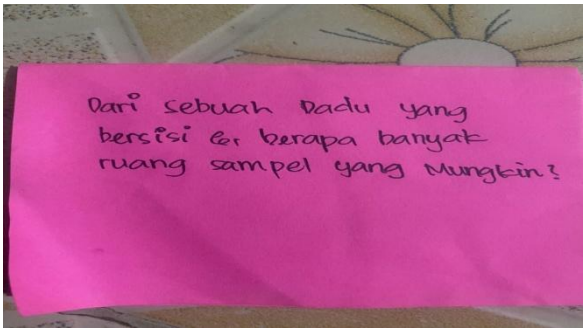

Figure 7. Question Card

c. Develop

This stage aims to produce learning media and conduct feasibility tests. The activities carried out are:

1) Media production

The game board, consisting of snakes and ladders, pawns, dice, and question cards, was successfully created. The game board was designed in color to attract students' attention.

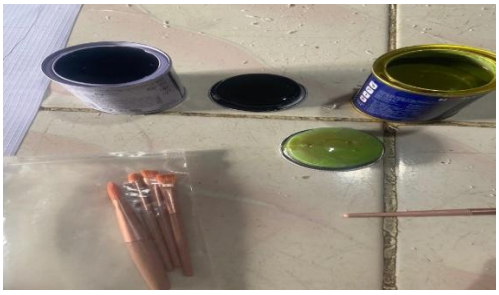

Figure 8. Tools for Making Game Boards

Figure 9. Game Board Making Process

Figure 10. Game Board

Figure 11. Dice Making Process

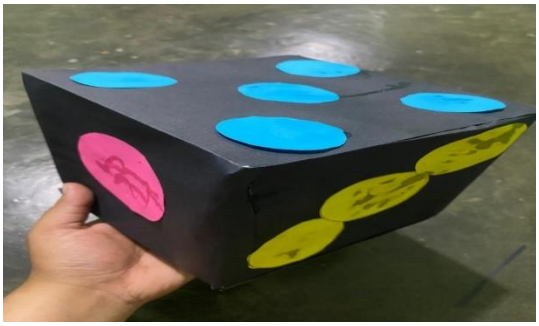

Figure 12. Dice

Figure 13. Question Card Design

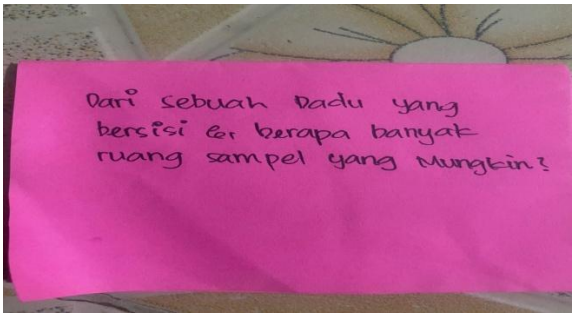

Figure 14. Question Card

The validity analysis of educational game learning media is carried out by processing validation data, including assessments from media experts and validation of materials by material experts, as explained below:

a) Media validity analysis

The media validation results were provided by Mrs. Suci Dahlya Narpila, M.Pd. Below is a table of media expert validation scores.

Table 2. Media Validation Results

No.	Assessment Aspects	Alternative Options			
		4	3	2	1
1.	The media has an attractive and student-friendly design.	√			
2.	The layout is neat and uncluttered.	√			

3.	The media facilitates student active participation in playing while learning.		√
4.	Game instructions are easy for students to understand.	√	
5.	Game components (board, dice, question cards, and pieces) mutually support learning objectives.		√
6.	The media can be used practically in classroom learning.		√
	Totally	87,5%	

Validity percentage (%) = $\frac{observed\ scores}{expected\ score}$ × 100%

Validity percentage (%) = $\frac{21}{24}$ × 100% = 87,5%

b) Media Validity Analysis by Material Experts

The material validation process was carried out by Ms. Indiyani Br Sembiring, S.Pd Gr as the validator. Below is a table of validation scores from material experts.

Table 3. Material Validation Results

No.	Assessment Aspects	Alternative Options			
		4	3	2	1
1.	The material presented is aligned with the Basic Competencies of the SMP curriculum.	√			
2.	The learning indicators are consistent with the objectives of mathematics instruction.	√			
3.	The questions used cover various levels of students' cognitive abilities.	√			
4.	The media presents probability concepts gradually and systematically.	√			
5.	The mathematical concepts in the content or questions are appropriate and relevant to the media.	√			
6.	The writing and mathematical symbols are consistent with correct mathematical conventions.		√		
	Totally	95,83%			

Validity percentage (%) = $\frac{observed\ scores}{expected\ score}$ × 100%

Validity percentage (%) = $\frac{23}{24}$ × 100% = 95,83%

2) Media Effectiveness Results

After all validations have been carried out with appropriate results, the snakes and ladders educational game media can be tested on students. Before the snakes and ladders educational game is given to students, the activity carried out is a pre-test to measure students' knowledge of the material of probability. After the pre-test activity, a discussion of questions is carried out to deepen students' knowledge and an explanation and game of the snakes and ladders educational game is carried out. After that, the snakes and ladders educational game is carried out with a duration of approximately 30 minutes. After the material delivery activity, a post-test is given as a learning evaluation. After the post-test is completed, an effectiveness test is carried out. The effectiveness test is carried out to determine whether the snakes and ladders educational game media that has been developed is able to improve student learning outcomes. Effectiveness is tested by comparing students' pre-test and post-test scores before and after using the media. Data analysis is carried out using the N-Gain test through the help of SPSS software, namely:

Table 4. N-Gain Test Results

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
NGain_Score	30	,25	,96	,7652	,17080
NGain_Persen	30	25,00	96,49	76,5238	17,07964
Valid N (listwise)	30				

Based on the results of data analysis using the N-Gain test, information was obtained regarding the improvement in student learning outcomes after learning using the snakes and ladders media. The number of subjects analyzed was 30 students. The calculation results showed that the minimum N-Gain value was 25, while the maximum value reached 96. The average student N-Gain score was 76.52 with a standard deviation of 11.08. If converted into percentage form, the average

increase in student learning outcomes was 76.52% which is included in the high category. Thus, it can be concluded that the snakes and ladders learning media developed is effective in improving student learning outcomes on the material of probability.

d. Disseminate

The dissemination stage is the final stage of the 4D development model (Define, Design, Develop, and Disseminate). It aims to disseminate the developed learning media to determine its practicality and effectiveness in other schools. Dissemination was conducted on a limited basis at the Thafiz Al-Habibi Islamic Boarding School, involving 23 eighth-grade students and one mathematics teacher. This stage was carried out after the media was declared valid and feasible based on expert testing and a trial at the first school, SMP 17 Agustus Tiga Juhar.

In this stage, learning activities were carried out using the Snakes and Ladders educational game on probability. Prior to the lesson, the researcher explained to the teacher and students how to play, the rules, and the purpose of using the media. The learning process was conducted in groups of 3–4 students. Students took turns rolling the dice, moving their pawns on the game board, and answering questions on the game cards according to the numbers they received. The teacher acted as a facilitator throughout the learning process. The average percentage of responses from all media trials was 86.25%, categorized as very practical.

After the learning process was completed, researchers distributed practicality questionnaires to teachers and students. Based on the data recapitulation, students responded to the media at an average of 86.25%, categorized as very practical, while teachers responded at 87.5%, categorized as very practical. These results indicate that the Snakes and Ladders Educational Game learning media is easy to use, engaging, and able to increase student active participation in learning activities.

Students responded positively to the media because the Snakes and Ladders game made the learning environment more enjoyable and less monotonous. They felt challenged by answering the probability questions on the game cards and

found it easier to understand the concepts of sample spaces and events because they were directly practiced through the game. Teachers also positively commented that the media was easy to use in the classroom, time-efficient, and able to foster positive interactions among students. These results reinforce the results of the previous practicality test at the first school, which indicated a "very practical" category. Therefore, this media is considered suitable for widespread use in other schools without requiring significant adjustments.

An effectiveness test was conducted to determine whether the developed snakes and ladders educational game media could improve student learning outcomes. Effectiveness was assessed by comparing students' pre-test and post-test scores before and after using the media. Data analysis was performed using the N-Gain test using SPSS software, as follows:

Table 5. N – Gain Test Results

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
NGain_Score	23	,22	,89	,6542	,15060
NGain_Persen	23	22,00	89,41	65,4238	15,06964
Valid N (listwise)	23				

Based on the results of data analysis using the N-Gain test, information was obtained regarding the improvement in student learning outcomes after learning using the snakes and ladders media. The number of subjects analyzed was 23 students. The calculation results showed that the minimum N-Gain value was 22, while the maximum value reached 89. The average student N-Gain score was 65.42 with a standard deviation of 15.06. If converted into percentage form, the average increase in student learning outcomes was 65.42% which is included in the moderate category. Thus, it can be concluded that the snakes and ladders learning media developed is effective in improving student learning outcomes in the material of probability.

Discussion

he results of this study demonstrate that the Snakes and Ladders Educational Game developed for eighth-grade probability learning is valid, practical, and effective. These

findings reinforce the importance of integrating interactive and game-based media into mathematics learning, particularly when dealing with abstract topics such as probability. The discussion elaborates on how the results align with and differ from previous studies, the theoretical underpinnings that support the effectiveness of game-based learning, and a critical analysis of the effectiveness outcomes obtained.

First, the high validation scores from media and material experts indicate that the developed game meets pedagogical and visual standards necessary for instructional media. This aligns with Liana (2015), who found that media with strong visual and narrative elements—such as comic-based media—effectively improved students' understanding of probability by presenting concepts in structured and contextualized formats. In the present study, although the media used is game-based rather than story-based, the visual design and structured question cards appear to serve a similar function in clarifying probability concepts.

The practicality results, showing strong positive responses from both teachers and students, are consistent with Setiani (2022), who reported that snakes and ladders can significantly increase students' motivation, collaboration, and classroom participation. The game environment creates an enjoyable atmosphere that encourages students to stay engaged, which reduces anxiety toward mathematics and allows them to interact more openly with peers. Although Setiani's study focused on an elementary school context, the present findings show that similar motivational benefits extend to junior high school students when the game is adapted with appropriate cognitive content.

In terms of effectiveness, the increase in students' learning outcomes—indicated by high N-Gain scores in the initial trial and moderate gains in the dissemination stage—supports the findings of Rizki (2023), who observed that snakes and ladders games integrating mathematical tasks could improve conceptual understanding with an effectiveness level above 80%. Although the present study did not reach the same level of effectiveness in the dissemination phase, the results still show meaningful improvement. The difference may be attributed to variations in instructional conditions, learner characteristics, or the extent of teacher facilitation during gameplay. This indicates that

while the game has strong potential, its effectiveness may depend on contextual implementation factors.

The effectiveness of the media can be explained theoretically through several learning theories. Constructivism suggests that students build understanding through active engagement and meaningful experiences. The game requires students to manipulate objects, answer questions, and interact with real learning situations, which supports the construction of new knowledge. Situated learning theory further explains that learning becomes more meaningful when it occurs within authentic or semi-authentic contexts. By embedding probability questions into a familiar game environment, students learn in a situation that feels natural rather than forced, allowing knowledge to be better internalized.

Flow theory offers another explanation. According to this theory, learning efficiency increases when students experience enjoyment, concentration, and intrinsic motivation. The game creates a balance between challenge and skill, keeping students in a state of flow. When students roll dice, move their pieces, and answer probability questions, they remain cognitively and emotionally engaged—conditions that promote deeper learning.

A critical analysis of the results also reveals several insights. The high effectiveness in the initial trial may reflect optimal classroom readiness, enthusiastic participation, and teacher familiarity with the media. Meanwhile, the moderate effectiveness at the dissemination stage suggests that teacher facilitation and classroom dynamics play a crucial role in mediating learning outcomes. This implies that the game alone is not sufficient; successful implementation requires teacher guidance, well-managed discussion, and adequate time allocation. Additionally, students with lower prior knowledge may require additional support when answering higher-level probability questions embedded in the game.

Overall, the findings highlight both the strengths and limitations of the developed media. While the Snakes and Ladders Educational Game proves to be a promising tool for teaching probability, its effectiveness depends on thoughtful implementation, appropriate facilitation, and alignment with student readiness. The study adds to the growing body of literature demonstrating that game-based learning can be an effective and enjoyable instructional strategy, particularly when grounded in strong pedagogical design and relevant learning theories.

CONCLUSION

The snakes and ladders educational game media on probability material has been proven valid, practical, and effective for use in learning. The validation results showed that the media obtained a score of 87.5% from media experts and 95.83% from material experts, both of which are categorized as very valid. In terms of practicality, the trial results showed a positive response with an average of 87% from students and 93.37% from teachers, which is categorized as very practical. The practicality test at the dissemination stage at the Tahfiz Al-Habibi Islamic Boarding School also strengthened these results, showing that this media is easy to understand, interesting, and able to increase student activeness in learning. In addition, this media is effective in improving student learning outcomes with an average N-Gain value of 76.52% which is categorized as high. Both at SMP 17 Agustus Tiga Juhar and at the Tahfiz Al-Habibi Islamic Boarding School, the use of this media successfully increased students' understanding of the concepts of sample space, events, and probability through interactive play-while-learning activities. Thus, the media developed meets the aspects of validity, practicality, and effectiveness, so it is worthy of being used as an alternative mathematics learning media for the probability material of class VIII SMP.

ACKNOWLEDGMENTS

- Dr. Fibri Rakhmawati, S.Si., M.Si., as the Scientific Article Supervisor who has taken the time to guide, assist, and complete the writing of this scientific article proposal until it is finished.
- To the most special, my beloved parents, father M. Ali Gurky Sembiring, mother Rita br Barus. Thank you for giving encouragement, affection, prayers, and sacrifices to complete the article report as a requirement to complete a bachelor's degree at the State Islamic University of North Sumatra Medan

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