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Development of Interactive Edugame Learning Media Based on Snakes & Ladders to Improve *IPAS* Learning Outcomes

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Abstract: The use of learning media, such as games, has never been developed by teachers, resulting in low learning outcomes from using *IPAS* light and sound material. This study aimed to create the test feasibility and effectiveness of snakes & ladders-based interactive edu-game learning media to improve the cognitive learning outcomes of *IPAS* fifth-grade students of SD Negeri Candi 01 Semarang City. The type of research used is Research and Development (R&D) research with the Borg and Gall development model. The subjects of this study were 24 fifth-grade students of SD Negeri Candi 01 Semarang City. Data collection techniques used non-test techniques (observation, interviews, questionnaires, data, and documentation) and test techniques (pretest and post-test). The data analysis technique begins with the normality test, followed by the T and N-Gain tests, to show the final results. The results of this study are as follows Snakes & ladders-based interactive edugame learning media was developed using Canva and Genially applications in the form of flipbooks with components, namely cover, preface, table of contents, character introduction, concept map, learning outcomes, learning objectives, materials, games, worksheet, images, animations, experimental videos, and HOTS questions. The feasibility test results from media and material experts obtained a very feasible category. The effectiveness of snakes & ladders-based interactive edugame learning media comes from the pretest and post-test results, based on the cognitive learning outcomes of students showing an increase in change, namely the normality test analysis shows that the data is usually distributed. The T-test results obtained Sig. (2-tailed) 0.001 <0.05. The N-Gain test results were 0.84 with high criteria. The conclusion of developing interactive edugame media based on Snakes & ladders was successfully developed with very feasible and effective to improve the cognitive learning outcomes of *IPAS* fifth-grade students of SD Negeri Candi 01 Semarang City.

Keywords: Interactive Edugame; IPAS; Learning Media; Snakes & Ladders.

Introduction

Education is a fundamental right that everyone should have. Through education, a person is expected to develop into an individual with intelligence, skills, and a noble personality. National education based on the Sisdiknas Bill 2023 is an essential and planned effort to create a learning atmosphere and learning process so that students actively develop their potential to have spiritual strength, religion, self-control, personality, intelligence, noble character, and skills needed for themselves, society, nation, and state [1]. National education aims to develop the potential of students to become human beings who are faithful and devoted to God Almighty, have noble character, are healthy, knowledgeable, capable, creative, independent, and become democratic and responsible citizens. The achievement of the success of national education is determined by the implementation of learning experienced by students. Based on Permendikbud No. 53 of 2023 concerning National Education Standards, which reads that the implementation of learning in educational units is carried out interactively, inspiring, fun, challenging, motivating students to participate actively, and providing sufficient space for initiative, creativity, and independence by the talents, interests, and physical and psychological development of students [2]. Implementing learning can stimulate students' interest in learning, increase knowledge by providing direct experience to students, and improve student learning outcomes. Teachers, as leaders in the implementation of learning, are expected to be able to design learning well and effectively so that students acquire various abilities, skills, and attitudes [3]. The implementation of learning that is interactive, fun, and motivates students is realised in one of the *IPAS* lesson contents.

IPAS is a family of sciences with unique characteristics that study factual natural phenomena in the form of reality or events and cause-and-effect relationships [4]. The subject matter of *IPAS* in SD/MI should emphasise direct learning experiences through the use and development of process skills and scientific attitudes. *IPAS* has several main elements: attitude, process, product, and application [5]. To achieve the learning objectives of *IPAS*, the teacher must help students learn innovatively, using engaging media and various learning resources. The learning objectives of *IPAS* also pay attention to the characteristics of children aged 6-12 years, namely, they like to play, have high curiosity, and form peer groups [6]. Learning implementation must be planned effectively and efficiently. Interactive and varied learning can be realised. However, in Indonesia, the field of science is not optimal.

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Based on the Program for International Student Assessment (PISA) results in 2015, 540,000 in 70 countries obtained data that Indonesian students for science ranked the lowest, namely in 62 countries evaluated. In addition, in a survey conducted by PISA in 2018 involving 80 countries, Indonesia's science ability scored 396, ranked 71st. When compared to other countries, Indonesia's future competitiveness is very low. Singapore, Vietnam, and Thailand are ranked ahead of Indonesia. When compared to other countries, Indonesia's future competitiveness is very low. Singapore, Vietnam, and Thailand are ranked ahead of Indonesia.

Data on the level of enjoyment of learning science in various countries with low achievement has a high ranking of enjoyment of learning science. However, Indonesia has a low ranking, while the pleasure of learning science is high. However, it can be logically concluded that students' abilities are higher if students are more happy to learn science. The above statement shows that the content of *IPAS* lessons is less than optimal.

Based on pre-research data through observations, interviews, questionnaires, data, and documentation conducted by researchers in class V of SD Negeri Candi 01 Semarang City, where the school uses the Merdeka Curriculum, problems were found in class V as follows: The problem that researchers found in class V of SD Negeri Candi 01, namely the use of learning media that is a game has not been developed by the teacher. Teachers in the learning process often use media such as PPT, books, etc. So that students are bored with learning. So that students get bored with learning, the learning process uses conventional methods such as lectures, discussions, questions, and answers, and teachers have never used educational game props. This causes learning to be less varied, and students are not focused and prefer to play in learning.

The results of the percentage of completeness show that the learning outcomes of *IPAS* Midterm Assessment 1 of grade V students of SD Negeri Candi 01 are low. Learning outcome data shows that the PTS scores in the IPAS subject of grade V students of SD Negeri Candi 01, as many as 24 students, the remaining 22 students 92% with an average of 62 get scores below KKTP which is 75. This is supported by the results of the diagnostic assessment of light and sound material for SD Negeri Candi 01 grade V students, with an average of 59 as many as 24 students who did not complete 19 with a percentage of 79.8% below KKTP.

Learners experience misconception problems in light and sound material. Students have difficulty understanding the differences in the properties of light and sound in the surrounding environment, such as light being reflected, propagating straight, and refracted, and sound properties, such as sound being reflected in all directions. This is due to students' difficulty understanding the concepts of light and sound, making it difficult for educators to convey material and involve students less in learning [7]. To solve the above problems, researchers will design interactive edugame learning media for *IPAS* lesson content in the form of Snakes & Ladders educational teaching aids that focus on light and sound material for class V SD Negeri Candi 01.

Media is defined by the National Education Association (NEA) as objects that can be seen, heard, imitated, read, and talked about with instruments used in learning activities [8]. Educators are not only required to be able to use available tools but also to learn to make learning media that can be used [9]. Learning media is an educational tool that serves as an intermediary to convey information effectively and efficiently and encourage learners to be directly involved [10]. The above statement is related to the learning theory of constructivism, which is very important in implementing learning; the emphasis must be given to students, not teachers [11].

The benefits of using learning media in learning include: 1. can clarify the presentation of messages and information so that it can facilitate and improve the learning process and results; 2. increase and direct the attention of children so that it can cause learning motivation, more direct interaction between students and the environment, and students can learn individually according to their wishes and interests; 3. overcome limitations, senses of space, and time; 4. provide experience to students about an event in their environment [12].

One of the interactive edugame learning media that can be developed is Snakes & ladders. Snakes & ladders is a game with dice to determine how many steps to take and pawns for markers to play. In snakes & ladders, players must pay attention to each step to complete the challenge quickly. Interactive edugame learning media based on Snakes & ladders is suitable for use in IPAS subject content because it keeps students active. The purpose of Snakes & ladders is 1) to teach children to cooperate in groups and answer questions and 2) to increase children's physical and psychological strength [13].

Educational teaching aids (APE) are specially designed teaching aids that are games to help and facilitate the learning process. Educational Aids (APE) in the 21st century collaborates with technology. One of the APEs utilising technology in games is an education game (Edugame). Edugame is designed for education to support the implementation of teaching and learning activities using interactive multimedia technology to achieve learning objectives. Games are entertainment media that relieve boredom, improve brain development, and increase concentration [14]. Snakes & ladders serve to educate and make learning fun [15].

Interactive edugame learning media based on Snakes & ladders *IPAS* lesson content is designed to meet the needs of teachers, students, and media selection criteria and material to be studied. Interactive edugame learning media based on Snakes & ladders serves as a learning medium to make the learning process active and fun because students are interested in implementing learning and want to continue playing [16]. The learning media was developed to attract attention and increase students' enthusiasm for learning, improve students' activeness while learning, and repeat the material that has been discovered. Therefore, using snakes & ladders-based interactive edugame learning media can make students more interested in *IPAS* subject content, which has been considered a subject content that students understand less; this problem can be solved by creating innovative learning media development.

The results of previous research can help researchers research the development of Snakes & ladders-based

interactive edugame learning media is research conducted by (Imam Abdillah and Dadang Sudrajat, 2014) stated that students highly favour multimedia Snakes and Ladders games because they are easy to play and can increase students' enthusiasm for learning [16]. Supported research (Rifki Afandi, 2015) explained that the Snakes and Ladders game learning media can improve students' motivation and learning outcomes [17]. Other researchers (Anjelina Wati, 2021) demonstrated that snakes and ladders learning media has increased and that using learning media can make it easier for students to gain understanding and motivate them to learn [18].

Based on previous research, the difference in this study lies in the learning media made in the form of flipbooks with the help of a Canva application. In addition, the learning material used by researchers is contained in the content of class V *IPAS* lessons, namely light and sound. This research provides novelty by presenting interactive edugame learning media with materials, LKPD, experimental videos, and games. In addition, it stimulates students with comics to make it easier for them to remember the material.

The development of snakes & ladders-based interactive edugame learning media developed by researchers aims to provide innovative updates related to interactive edugame learning media based on snakes & ladders *IPAS* lesson content of light and sound material, which can later assist teachers in implementing learning. This study aimed to test the snakes & ladders-based interactive edugame learning media's feasibility and effectiveness in improving the cognitive learning outcomes of *IPAS* class V students of SD Negeri Candi 01 Semarang City.

Research Methods

Type of Research

This research is a type of Research and Development (R&D) research that aims to develop a product that is tested for feasibility and effectiveness. This research model refers to the Borg and Gall model.

Research Procedure

This research model consists of 10 stages: potential and problems, data collection, product design, product validation, design revision, product trial, product revision, usage trial, product revision, and mass product [19].

This research is limited to only eight stages of development through 1) analysis of potential and problems, researchers determine the research location and examine the potential and problems in the school; 2) data collection, researchers collect data through teachers and students by observation, interviews, data, and documentation (non-test techniques) and pretests and post-tests (test techniques); 3) product design, researchers compile interactive edugame learning media based on snakes & ladders designed for students with class V *IPAS* subject matter light and sound so that students easily understand the material and learn more exciting and interactive. At this stage, researchers prepare materials, grids, questions, and experimental videos; 4) product validation, researchers conduct product validation in the form of media and material validation to expert validators to determine product feasibility; 5) product revision from expert validators to improve product development design; 6) product trials. Product trials were conducted on small group students. During the small group trial, researchers distributed teacher and learner response questionnaires to carry out the revision stage; 7) product revision, researchers found out the weaknesses and shortcomings of the product through the analysis of teacher and learner response questionnaires, which became the reference for researchers in improving the product; 8) trial use, the revised product was then tested on large groups of students to determine the effectiveness of product use using learning outcomes data (pretest and post-test).

Research Subject

The subjects of this research were students of class V C SD Negeri Candi 01 Semarang City, as many as 24 students.

Research Instruments

Researchers used the following instruments: Media expert validation questionnaire and material expert submitted to the expert validator. The questionnaire was used to test the feasibility of the product developed, both in terms of appearance and material; teacher and learner response questionnaires as support in testing the feasibility of the product; pretest and post-test questions were used to analyse the effectiveness of the product developed as well as to test the students' initial and final understanding of the material taught.

Data Analysis Technique

This study used data analysis techniques to answer the problem formulation. The analysis in this study is divided into development design analysis, feasibility analysis, and product trial data analysis of edugame-based learning media Snakes & ladders. Analysing the feasibility of the product was carried out by media experts and material experts to obtain validation and practicality of the product through teacher and student response questionnaires after using snakes & ladders-based interactive edugame learning media. Data analysis was conducted to determine the product's effectiveness, followed by a normality test, T-test, and N-Gain test to determine the final results.

Product feasibility analysis is carried out to fulfil the feasibility criteria in developing snakes & ladders-based interactive edugame learning media. The feasibility measurement is carried out using an expert validation questionnaire with a Likert scale with four scales, namely very feasible with a score of 4 to less possible with a score of 1. The feasibility of the product can be tested using the following formula (1) [20].

$$NP = \frac{R}{SM} x100\% \quad (1)$$

Description:
NP : The percentage figure sought or expected.

R : Raw score obtained
SM : The maximum score of the test concerned

Based on the provisions of the percentage results obtained, the data will be converted based on the criteria of very feasible, feasible, quite possible and less viable—table 1 eligibility test criteria for expert validators [20].

Table 1. Product Feasibility Criteria

Percentage	Criteria
0% - 25%	Less Feasible
26% - 50%	Quite Feasible
51% - 75%	Feasible
76% - 100%	Very Feasible

Product practicality analysis was conducted to determine the practicality of the snakes & ladders-based interactive edugame learning media that had been developed. Product practicality data is obtained from the results of teacher and student response questionnaires. The practicality test of snakes & ladders-based interactive edugame learning media is measured using a Likert scale with four scales, namely very feasible with a score of 4 to less possible with a score of 1. Calculate it using formula (1); the product criteria are in Table 2 [21].

Table 2. Product Practicality Criteria

Percentage	Criteria
0% - 20%	Not Practical
21% - 40%	Less Practical
41% - 60%	Practical Enough
61% - 85%	Practical
86% - 100%	Very Practical

Source: Adapted from Maryana (2019)

Product effectiveness data is obtained from students' pretest and post-test results. Researchers used 30 questions in the form of multiple choices. The development of snakes & ladders-based interactive edugame learning media effectively improves learning outcomes if the data is usually distributed with a significance value> 0.05. If Sig. (2-tailed) < 0.05 so that Ha is accepted, the Ha hypothesis shows a significant difference between pretest and post-test learning outcomes using snakes & ladders-based interactive edugame learning media. Data processing begins with a normality test, followed by the T-test and N-Gain test, to determine the final results with the help of SPSS version 29.

Results and Discussion

Research on developing interactive edugame-based learning media snakes & ladders on *IPAS* subject matter light and sound for grade V SD Negeri Candi 01 Semarang City. The results of the research that has been carried out can be reviewed in the results and discussion, as follows: the results of the development of snakes & ladders-based interactive edugame learning media, the feasibility of snakes & ladders-based interactive edugame learning media, the effectiveness of snakes & ladder-based interactive edugame teaching media.

Development of Interactive Edugame Learning Media based on Snakes & Ladders

The stages of research on interactive edugame learning media based on snakes & ladders in class V *IPAS* subject matter of light and sound through the Borg and Gall development model. The first stage is the potential and problems at SD Negeri Candi 01 Semarang City by observing the implementation of learning, interviews with grade V teachers, documentation, and data on the learning outcomes of class V C students at SD Negeri Candi 01 Semarang City. Based on this stage, it shows that teachers have never developed the use of game learning media; teachers often use media such as PPT, books, etc., the learning process uses conventional methods, students are not focused and prefer to play in learning, so that it causes low student learning outcomes. Therefore, overcoming the above problems, researchers examined research on developing snakes & ladders-based interactive edugame learning media on the IPAS subject matter of light and sound.

The second stage is data collection. Data was collected through learning outcomes and questionnaires of teacher and learner need related to snakes & ladders-based interactive edugame learning media development. The results of the analysis of teacher and learner need questionnaires stated that there was a need for interactive edugame learning media based on Snakes & ladders. This is supported by observations and interviews with teachers of class V C SD Negeri Candi 01 Semarang City, who found low learning outcomes in the IPAS subject matter. Learning outcome data shows that the PTS scores in the *IPAS* subject of grade V students of SD Negeri Candi 01 Semarang City, as many as 24 students, the remaining 22 students, 92%, with an average of 62, get scores below KKTP, which is 75. This is supported by the results of the diagnostic assessment of light and sound material for grade V students of SD Negeri Candi 01 Semarang City, with an average of 59 as many as 24 students who did not complete 19 students with a percentage of 79.8% below KKTP. Therefore, students need snakes & ladders-based interactive edugame learning media equipped with materials, questions, LKPD, and games packaged interestingly on the *IPAS* subject matter of light and sound.

The third stage of product design. Snakes & ladders-based interactive edugame learning media is designed with the help of the genial application in the form of a link placed on a flipbook on Canva. The design of Snakes & ladders-based interactive edugame learning media is cover, preface, table of contents, learning outcomes, learning objectives, material, games containing HOTS multiple choice questions (analysing and concluding) and experimental videos, instructions for using the game, development profile. The researcher also made a flipbook design using the Canva application as a place for the snakes & ladders-based interactive edugame link that had been developed.

The fourth stage is product validation. Media and material experts carried out the validation of snakes & ladders-based interactive edugame learning media. Validation by getting assessments, criticisms, and suggestions from expert validators. The fifth stage revises the design according to the evaluation, criticism, and

suggestions given by expert validators so that the developed product is suitable for testing. Researchers have revised the design components: cover, preface, table of contents, introduction to the character, concept map, learning outcomes, learning objectives, materials, questions, LKPD, and bibliography.

The sixth stage is product testing. This study conducted the product trial stage on small groups of students to discover the shortcomings of developing snakes & ladders-based interactive edugame learning media. Small group trials were carried out at SD Negeri Candi 01 Semarang City, totalling six students in class V C. Furthermore, researchers distributed teacher and student response questionnaires to determine the practicality of interactive edugame learning media based on snakes & ladders *IPAS* subject matter light and sound.

The seventh stage is product revision. Based on the results of the analysis of teacher and learner response questionnaires related to small group trials, there were no revisions because they were appropriate and met the practical criteria.

The eighth stage is the use trial conducted by a large group of students in class V C SD Negeri Candi 01 Semarang City, totalling 24 students. The design of snakes & ladders-based interactive edugame learning media development is presented in Figure 2-6.

Figure 2. Cover and Introduction of Snakes & Ladders-based Interactive Edugame Learning Media

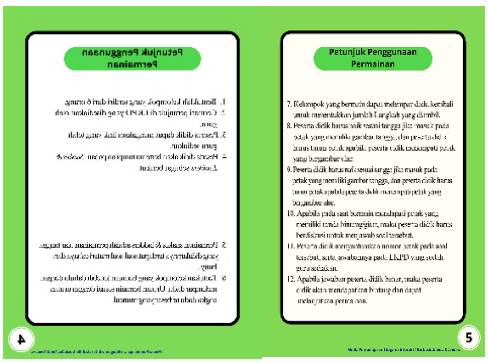

Figure 3. Instructions for the use of Snakes & Ladders-Based Interactive Edugame Learning Media

Figure 4. Game and LKPD Link Place

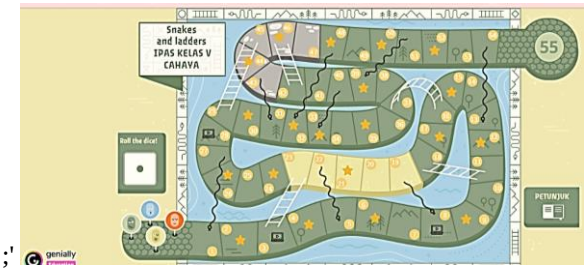

Figure 5. Snakes & Ladders Snakes & Ladders Game Display

Figure 6. Display of Experiment Videos and HOTS Questions

Feasibility of Interactive Edugame Learning Media Based on Snakes & Ladders

The feasibility of interactive edugame learning media based on snakes & ladders *IPAS* subject matter of light and sound is analysed from the results of the feasibility test by media expert validators and material experts supported by teacher and student responses. The media expert validation questionnaire has several aspects of assessment, namely media design and language. Elements of the evaluation of the material expert validation questionnaire, namely the use of language, quality of content and objectives, instructional, technical / appearance. Aspects of assessment on teacher and learner responses, namely media presentation, media quality, and instructional quality. The results of the assessment analysis by media and material expert validators are presented in Table 3.

Table 3. Feasibility Test Assessment of Validators

Validator	Assessment Percentage (%)	Criteria
Media Expert	91%	Very Feasible
Material Expert	93%	Very Feasible
Average	92%	Very Feasible

Source: Processed primary data

Based on Table 3. the development of interactive edugame learning media based on snakes & ladders *IPAS* light and sound material has validation results from media experts obtained a score of 91% with a very feasible category and material experts obtained a score of 93% with a very feasible category. This is supported by the analysis of teacher and learner response questionnaires presented in Table 4.

Table 4. Teacher and Learner Response Assessment

Response	Assessment Percentage	Criteria
Grade V Teacher	95%	Very Practical
Student	90%	Very Practical
Average	93%	Very Practical

Source: Processed primary data

Based on Table 4, the analysis results of teacher and student response questionnaires are efficient, with a teacher response percentage of 95% and a student response of 90%. This is supported by previous researchers (Putri, 2023) who stated that snakes & ladders-based interactive edugame are feasible and practical as an innovative and fun learning media in the implementation of learning in the classroom [22]. It is concluded that the snakes & ladders-based interactive edugame learning media is very feasible in implementing learning.

Effectiveness of Snakes & Ladders-based Interactive Edugame Learning Media

The effectiveness of interactive edugame learning media based on snakes & ladders *IPAS* subject matter of light and sound by analysing learning outcomes in pretest and post-test. The design uses a one-group pretest-posttest model with a pre-experimental design that does not receive treatment by doing a pretest and those who get treatment by doing a post-test. The results of the pretest and post-test tests are presented in Table 5.

Table 5. Pretest and Posttest Test Results

Aspects	Pretest Score	Post-test Score
Average	39,71	89,58
Minimum Score	20	77
Maximum Score	67	100

Source: Processed primary data

Based on Table 5. it is known that the average on cognitive learning outcomes has increased, with the pretest value getting a value of 39.71 and the post-test value getting a value of 89.58. this research in analysing data uses the help of the SPSS version 29 program. Data analysis begins with a normality test. After that, the T-test analysis and N-Gain test continued to determine the effectiveness of snakes & ladders-based interactive edugame learning media.

The normality test is conducted knowing the data is usually abnormally distributed. This study used SPSS version 29 to test normality with Shapiro-Wilk. The results of the normality test are presented in Table 6.

Table 6. Normality Test Results

Shapiro-Wilk	Sig. value	Description
Pretest	.498	Normal
Post-test	.045	Normal

Source: Processed primary data

In the normality test, if the data is said to be normally distributed, then the Sig.>0.05 value, while not normally distributed, then the Sig.<0.05 value. Based on Table 6. it is known that the Sig. The value on the pretest data is 0.498>0.05, while the post-test data is 0.045>0.05. This data concludes that the pretest and post-test data are typically distributed because of the Sig.>0.05 value. After knowing the results are normally distributed, the Paired T-test using SPSS version 29 can be continued to determine the effectiveness of snakes & ladders-based interactive edugame learning media. Paired T-test results are presented in Table 7.

Table 7. Paired T-test Results

Paired Samples test	Mean	Sig. (2-tailed
Pretest-Posttest	-49.88	.001

Source: Processed Primary Data

The Paired T-test test shows a significant difference in the pretest and post-test results if the Sig. (2-tailed) <0.05. Based on Table 7. the value of Sig. (2-tailed) <0.05, namely 0.001, shows that the results between the pretest and post-test have an increase difference of 49.88%, so it can be seen that there is a significant difference. The Paired T-test test concludes that snakes & ladders-based interactive edugame learning media is effectively used to improve the learning outcomes of grade V *IPAS*. Learning outcomes will result in changes in a person in the form of changes in abilities, attitudes, and interests [23].

Furthermore, they tested the average pretest and post-test using the N-Gain test. Analysing the N-Gain test was done with the help of SPSS version 29. The results of the N-Gain test are presented in Table 8.

Table 8. N-Gain Test Results

Action	Average	Average Difference	N-Gain	Criterion
Pretest	39.71	49.88	.84	Tinggi
Posttest	89.58			

Source: Processed primary data

Based on Table 8. the results of the N-Gain test show that the *IPAS* cognitive learning outcomes of fifth-grade students of SD Negeri Candi 01 Semarang City using Snakes & ladders interactive edugame learning media show an increase in the average N-Gain of 0.8414 with high criteria. This is supported by previous research (Suciati, 2021), which states that interactive edugame media based on Snakes & ladders effectively improves learning

outcomes [24]. This aligns with research (Rani S, 2023) which states that interactive edugame media based on Snakes & ladders effectively enhances learning outcomes and student understanding [25].

Data analysis conducted in the study obtained feasibility test results with very feasible and practical criteria. The N-Gain test results show high criteria. Based on the data analysis above, it can be concluded that using interactive edugame learning media based on Snakes & ladders is very feasible and effective to use as a learning media in the classroom. Interactive edugame learning media based on snakes & ladders affects the implementation of fun learning and provides a student experience. This aligns with previous research (Prasasti & Listiani, 2019), which explains that experience is the most crucial element in implementing learning [26]. In addition, it creates two-way learning and increases learners' understanding. The above statement aligns with previous research (Christian & Prasida, 2018) explaining that snakes & ladders games can create two-way learning and increase students' understanding [27].

Conclusion

Development of learning media based on snakes & ladders IPAS light and sound material using the type of Research and Development (R&D) research and the Borg and Gall model to determine the feasibility and effectiveness of the product. Based on the feasibility test results, it obtained very feasible criteria as evidenced by the validation test results by validators and the responses of teachers and students. The results of the validation test by media experts and material experts obtained very feasible criteria. This is supported by the teacher and learner response assessment results in the very feasible category. The effectiveness test of snakes & ladders-based interactive edugame learning media comes from pretest and post-test learning outcomes. Based on the cognitive learning outcomes of students showed an increase in change; namely, the normality test analysis showed that the data was normally distributed. The T-test results obtained Sig. (2-tailed) <0.05 of 0.001 so that there is a significant change in the difference between pretest and post-test results. The N-Gain test results were 0.8414 with high criteria. Snakes & ladders-based interactive edugame media development research was successfully developed with feasibility and effectiveness to improve the cognitive learning outcomes of *IPAS* fifth-grade students of SD Negeri Candi 01 Semarang City.

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