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DEVELOPMENT OF CLASSPOINT INTEGRATED POWERPOINT SPIN GAME MEDIA TO IMPROVE CRITICAL THINKING SKILLS ON EXCRETORY SYSTEM MATERIAL IN SENIOR HIGH SCHOOL

Pengembangan Media Spin Game PowerPoint Terintegrasi ClassPoint untuk Meningkatkan Kemampuan Berpikir Kritis pada Materi Sistem Ekskresi SMA

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Abstract

High-level thinking abilities such as critical thinking, logical thinking, reflective thinking, metacognitive thinking, and creative thinking are indispensable ways of thinking for the 21st century. Specifically, it emphasizes critical thinking as crucial for learning and suggests educational games as a medium to enhance this skill among students. This study aims to produce and describe the feasibility of ClassPoint integrated PowerPoint Spin Game media in terms of validity, practicality, and effectiveness to improve critical thinking skills in high school, particularly in the Excretory System Material. This research used development research using the ASSURE model. This research involved 24 students of grade XI in SMA Muhammadiyah 10 GKB Gresik. The methods employed observation, questionnaire, pre-test, and post-test regarding media use. The research results revealed an average media validity of 95,44% with "very valid" criteria. The practicality of the media was obtained based on the results of student activity observations of 98,61% with "very practical" criteria and obtained 92,5% with "very practical" criteria by the questionnaire response. The effectiveness of the media showed an average of 0,68 with "medium" criteria through N-gain analysis. Therefore, the developed ClassPoint integrated PowerPoint Spin Game media was declared valid, practical, and effectively used in learning.
Keywords: classpoint, critical thinking, excretory system, integrated, powerpoint, spin game.

Abstrak

Kemampuan berpikir tingkat tinggi seperti berpikir kritis, berpikir logis, berpikir reflektif, berpikir metakognitif, dan berpikir kreatif merupakan cara berpikir yang sangat diperlukan untuk abad ke-21. Secara khusus, ini menekankan pemikiran kritis sebagai hal yang penting dalam pembelajaran dan menyarankan permainan edukatif sebagai media untuk meningkatkan keterampilan ini di antara para siswa. Penelitian ini bertujuan untuk menghasilkan dan mendeskripsikan kelayakan media PowerPoint Spin Game terintegrasi ClassPoint yang ditinjau dari segi validitas, kepraktisan, dan keefektifan untuk meningkatkan keterampilan berpikir kritis di SMA, khususnya pada materi sistem ekskresi. Penelitian ini menggunakan penelitian pengembangan dengan menggunakan model ASSURE. Penelitian ini melibatkan 24 siswa kelas XI di SMA Muhammadiyah 10 GKB Gresik. Metode pengumpulan data yang digunakan adalah observasi, kuesioner, pre-test, dan post-test mengenai penggunaan media. Hasil penelitian menunjukkan rata-rata validitas media sebesar 95,44% dengan kriteria "sangat valid". Kepraktisan media diperoleh berdasarkan hasil observasi aktivitas siswa sebesar 98,61% dengan kriteria "sangat praktis" dan diperoleh 92,5% dengan kriteria "sangat praktis" berdasarkan angket respon siswa. Keefektifan media menunjukkan rata-rata 0,68 dengan kriteria "sedang" melalui analisis N-gain. Oleh karena itu, media PowerPoint Spin Game terintegrasi ClassPoint yang dikembangkan dinyatakan valid, praktis, dan efektif digunakan dalam pembelajaran.
Kata Kunci:*, classpoint, berpikir kritis, sistem ekskresi, integrasi, powerpoint, spin game.*

INTRODUCTION

High-level thinking skills such as critical, logical, introspective, metacognitive, and creative thinking are necessary to meet the challenges of the 21st century, characterized by globalization, information development, and economic integration initiatives, such as the Asian Economic Community (AEC) and AFTA. It emphasizes

the need for individuals who can adapt to changing circumstances, innovate, and demonstrate motivation and self-assurance. This underscores the importance of preparing future generations to thrive in this dynamic environment (Hidayah, 2015). Science courses covering Biology are required and more concerned with higher-order thinking abilities. When students utilize higher order thinking ability, they are capable of using their minds to solve problems in everyday life. They can also learn how to think critically. In addition, student's learning will improve their language, analytical, and creative skills (Nurhayani, 2017).

High-level thinking skills are the activities of thinking in the high cognitive domain of Bloom's taxonomy which consists of analysis (C4), evaluation (C5), and creation (C6). These skills are also called "High Order Thinking Skills" (HOTS), which include critical thinking, creative thinking, and problem solving. Consequently, in order to develop students' problem solving, critical, and creative thinking skills, HOTS-based questions must be utilized (Ansari & Abdullah, 2020). Making convincing arguments, analyzing, and evaluating information are the examples of critical thinking indicators. It was discovered that students could evaluate and critically analyze a variety of problems to produce arguments that made sense based on the three indicators. Therefore, students are able to come up with innovative ideas and create items they have never done before. This product's creation process is the outcome of imaginative thought (Susilowati & Sumaji, 2020). As a result, students must first master critical thinking in order to more easily acquire creative thinking skills.

Critical thinking is one of the crucial high-level thinking abilities that students need to develop in the learning process. According to Hallatu et al. (2017), the ability to think logically and critically is required so that optimal learning results are obtained in order for future educational developments to be more advanced. By engaging in learning activities that focus on information synthesis and analysis, students can develop their critical thinking abilities appropriately. Students engage in analysis activities, such as identifying, differentiating, conducting investigations, classifying, and organizing the data they have collected. Activities used in synthesis are evaluated using Bloom's taxonomy (Susilowati & Sumaji, 2020).

Critical thinking is the ability to think twice about facing a problem, which includes six components: interpretation, analysis, evaluation, conclusion, explanation, and self-regulation. Critical thinking means good thinking, which is almost the opposite of illogical, irrational, and just thinking as mentioned by Facione (2015) that critical thinking is part of good thinking, which also includes creative thinking. According to a research done by Febrianti et al. (2021), three essential skills were discovered when examining HOTS questions to support critical thinking ability, such as the capacity for critical thinking, creative thinking, and problem-solving skills. Therefore, it can be said that students have succeeded in growing their capacity for critical and creative thinking as well as their problem-solving abilities.

Students' critical thinking indicators are known to be very low, an average of 41% with a percentage of each indicator of 34% interpretation, 11,7% analysis, 32,96% evaluation with a very low category, 46% self-regulation indicator in the low category, 69,4% inference indicator, and 62% explanation in the moderate category (Jayanti et al., 2019). In line with the research conducted by Anggiasari et al. (2018) that the critical thinking skills of interpretation, analysis, and inference are in the low category. Based on interviews with teachers, several students at XI grades participating in this research have the lack ability to analyze and express the meaning of information.

Learning is hindered by the fact that most students are passive learners. They do not attempt to evaluate and critically analyze the information they are given. In the academic realm, when students demonstrate the courage to engage in dialogue with their educators or entertain inquiries pertinent to their daily experiences, they are compelled to exercise critical thinking skill (Sulistyawati & Cici, 2017). This is in accordance with the issues that encountered. Based on the results of the interview, few students of XI grade have the lack of critical thinking ability. Students can only solve questions at cognitive aspect levels of C1-C3, while they experience difficulties at C4-C6.

Learning resources such games can be utilized to create an engaging learning environment for students. Educational games are those that contain instructional elements. Teachers can use educational games as teaching tools to impart knowledges to their students. When educational materials are presented through games, students' motivation to learn will increase and the process will become pleasurable (Sriwahyuni, 2016). Playing in class is one way to stop students from getting bored and drowsy during the learning process. Abadi (2016) asserts that games can serve as a teaching tool to improve the capacity of the human brain to develop and get rid of boredom. Out of 25 students at SMA Negeri 9 Bandar Lampung, 48% of them said that they enjoyed

playing educational games like Crosswords and Quizzes/puzzles based on the results of a random questionnaire (Rianingtias, 2019). This statement is in line with the results of interviews with teachers that students prefer and are more active when given game media in biology learning, but it has not been provided by the game media on Excretory System Material. The obstacle faced by teachers is how to make the learning process enjoyable and students become active in the Excretory System Material.

One educational game that can be used as learning media is ClassPoint integrated PowerPoint Spin Game media. This educational tool is a PowerPoint-designed spin game media. The Spin Game PowerPoint use of a circular rotating board and has a number that refers to the question along with a pointer. The direction to use it is to press the "Spin/Stop" button on the PowerPoint slides. Afterwards, the board can rotate and stop, and integrated towards the Microsoft PowerPoint hyperlink features. ClassPoint integrated PowerPoint Spin Game media is also provide the educational games in the form of quizzes and it given to the students using the HOTS question. The quizzes given to students are quizzes in the form of HOTS question to train critical thinking skills based on Facione's (2015) indicators, namely interpretation and analysis. Besides HOTS question, this media includes a brief review of Excretory System Material.

The ClassPoint software program was created by the Inknoe. With the help of this program, Microsoft PowerPoint can be created to be more engaging and effective in educational activities. With student responses coming from their laptops or handphone, learning will become more interactive. Teachers can undoubtedly add more intrigue and interaction to the assessment process with this type of application (Utami et al., 2022). With a direct connection between ClassPoint and PowerPoint, educators can utilize slideshow mode, incorporate interactive quiz, and gather responses digitally. Through the utilization of PowerPoint integrated with ClassPoint application, students can engage in enjoyable learning experiences (Sundari, 2021).

METHOD

This research is development research and produced a media, namely ClassPoint integrated PowerPoint Spin Game media on Excretory System material. The research was reviewed from the validity, practicality, and effectiveness of the media. The ASSURE model was employed in this development process.The ASSURE model was used in this development process, which include five stages that make up into this; Analyze Learners, State Objectives, Select Methods, Media and Materials, Utilize Materials, Require Learners, and Evaluate and Revise. The research was conducted at SMA Muhammadiyah 10 GKB Gresik and involved the 24 students of grade XI.

The Analyze Learners stage analyzed student characteristics, including general characteristics, initial ability specifications, and learning styles. State Objectives stage was carried out to formulate what things to be achieved in learning. Select Methods, Media and Materials stage was carried out the selection of methods, media, and materials during learning which were adjusted to the characteristics of students. Utilize Materials stage was carried out to utilize the media and materials that have been previously selected to students. The Stage of Require Learners was done by including the role of students, namely by employing responses to media and administering pre-test questions before presenting the media, followers by post-test assessments afterward. The Evaluate and Revise stage was carried out to evaluates and revises the aspects of media development.

Media validity used a validation sheet that included aspects of systematic presentation, application quality, display/graphic quality, material quality, and illustration quality. Two lecturers from UNESA Biology Department and a biology teacher served as validators. Scores were provided on the validation sheet by the validators. The score used was based on a Likert scale, where 1 for the minimum score and 4 for the maximum score. The results are presented in Table 1.

Table 1. Likert Scale (Adopted from Riduwan and Sunarto, 2013).

Score	Score Interpretation Criteria
4	Very Good
3	Good
2	Moderately Good
1	Less Good

The data obtained is formulated as follows (Adapted from Riduwan, 2019).

$$\textit{Validity value (\%)} = \frac{\sum \textit{score obtained by validators}}{\sum \text{score}} \textit{ x 100\% } \ldots.(1)$$

The result of this analysis was then interpreted as follows.

Table 2. Validity Interpretation Criteria (Adopted from Riduwan and Sunarto, 2013).

Validity Value (%)	Vailidity Interpretation Criteria
25-40	Not Valid
41-55	Less Valid
56-70	Moderately Valid

Validity Value (%)	Vailidity Interpretation Criteria
71-85	Valid
86-100	Very Valid

Based on Table 2, media was declared valid if an average value obtained is ≥ 71%.

The practicality of the media used the observation sheet on the implementation in student activities and the student response questionnaire sheet. First, the observation sheet, which contained observation of implementation in student activities when using the media. The answer options on the sheet are "YES" for positive responses and "NO" for negative responses. Two or more observers conducted the observation. The assessment of the implementation observation results can be seen in Table 3.

Table 3. Guttman Scale Criteria (Adapted from Riduwan, 2016).

Guttman Scale	Criteria Score
Yes	1
No	0

The score data that have been obtained is formulated as follow.

$$\textit{Positive responses (\%)} = \frac{\sum \textit{“Yes” answer x 100\%}}{\sum \text{score}} \quad \text{.....(2)}$$

(Riduwan, 2016)

The result obtained can be interpreted in Table 4 below.

Table 4. Observation Interpretation Criteria (Adapted from Sugiyono, 2013).

Implementation Result Data Values (%)	Criteria for Interpretation of Implementation Results Data Values
30-50	Not Practical
51-69	Moderately Practical
70-85	Practical
86-100	Very Practical

Based on Table 4, observation of implementation in student activities was declared practical if an average value obtained is ≥ 70.

Second, after utilizing the ClassPoint integrated PowerPoint Spin Game media, student responses were obtained through a questionnaire sheet. The sheet contain question with the answer choice “YES” for a yes response and “NO” for a no response. The assessment of questionnaire observation results can be seen in Table 3.

The score data that have been obtained is formulated as follow.

$$\textit{Positive responses (\%)} = \frac{\sum \textit{“Yes” answer x 100\%}}{\sum \text{score}} \quad \text{.....(2)}$$

(Riduwan, 2016)

The result obtained can be interpreted in Table 5 below.

Table 5. Questionnaire Interpretation Criteria (Adapted from Sugiyono, 2013).

Student Responses (%)	Criteria for Interpretation of Questionnaire Results Data Values
30-50	Not Practical
51-69	Moderately Practical
70-85	Practical
86-100	Very Practical

Based on Table 5, media was declared practical if an average value obtained is ≥ 70.

The effectiveness of the media was obtained from student learning outcomes sourced from the results of tests conducted before (pre-test) and after (post-test) using the media. Essay questions were used in the test. Then, the test results on the knowledge aspect were analyzed with the following formula.

$$\textit{Test score} = \frac{\sum \textit{score obtained by students x 100\%}}{\textit{maximum score}} \quad \text{.....(3)}$$

(Hake, 1999)

The method used to determine the increase in knowledge results is the gain score with the following formula (Hake, 1999).

$$\textit{N-gain} = \frac{\textit{Spost} - \textit{Spre}}{\textit{100 - Spre}} \quad \text{.....(4)}$$

Information: N-gain= Gain value
Spre= Pre-test score
Spost= Post-test score
100= Maximum score

The result of the gain values was analyzed using the gain level criteria in Table 6.

Table 6. Gain Score Criteria (Hake, 1999)

N-gain	Description
g > 0,70	High
0,70 ≥ g ≥ 0,30	Medium
g < 0,30	Low

Based on the Table 6, media was declared effective if students have increased knowledge results and obtain a gain score >0,30.

RESULT AND DISCUSSION

This study aims to create learning media as a research output. Validators analyzed and validated the product before moving on to the Utilize Materials or media trial stage to students. Review and validation provided suggestions and input for improvements to ensure that ClassPoint integrated Spin Game PowerPoint media is good quality before trying out.

The following are the results of media validation by validators. The results can be seen in Table 7.

Table 7. Validity Results of ClassPoint integrated Spin Game PowerPoint Media.

No	Aspects Assessed	Average Validity Value (%)	Crteria
A.	Systematics Presentation	94,44	Very Valid
B.	Application Quality	95,83	Very Valid
C.	Display/Graphic Quality	95,24	Very Valid
D.	Materials Quality	91,67	Very Valid
E.	Illustration Quality	100	Very Valid
Average overall validity value		95,44	Very Valid

Validity assessment consist of two formats; media format and material format. Media formats include (1) systematic presentation, (2) application quality, and (3) display/graphic quality, whereas material format consist of the quality of the material and the quality of the illustration. The ClassPoint integrated Spin Game PowerPoint media has been developed and has an average overall validity value of 95,44% with "very valid" criteria. This indicated that the media can be said to be valid and can be used in learning. Selecting the proper media and keeping it in line with the learning objectives determines whether the media is appropriate or not. This is consistent with Hasan et al. (2021), who state that in order to choose learning media that is appropriate, consideration must be provided to several kinds of criteria and factors as well as the process of choosing learning media. Previous study by Vachruddin & Abd (2021) said that independent use of Spin PowerPoint media is very easy in terms of accessing it.

The ClassPoint integrated Spin Game PowerPoint media is declared as "very valid" criteria. Nonetheless, several aspects still require revision even though they are declared to have valid criteria. Lack of precision in preparation is the cause of these results. Therefore, media experts offer suggestions for adding instructional sentences to spin game to help media users follow the content presented in the media sequentially and provide direction to maintain clarity and consistency in the media. Besides, the experts offered advice or suggestion on how to formulate question that aligned with the critical thinking indicators of interpretation and analysis.

The practicality of the media was obtained after a trial phase was carried out on students. The results of the media practicality analysis were derived from student responses and observations of how the activities were carried out when utilizing ClassPoint integrated Spin Game PowerPoint media. The following are the observation on the implementation of student activities when using ClassPoint integrated Spin Game PowerPoint media. The results are presented in Table 8.

Table 8. Results of Observations on the Implementation of Student Activities on ClassPoint Integrated PowerPoint Spin Game Media

No	Aspect Assessed	Implementation (%)		Criteria
		Yes	No	
1.	Students read and pay attention to the media usage guide sheet.	100,00	0,00	Very Practical
2.	Students read and pay attention to the "Panduan" button which contains an explanation of the function of the buttons on ClassPoint integrated Spin Game PowerPoint media.	95,83	4,17	Very Practical
3.	Students read and pay attention to the Learning Objectives menu listed on ClassPoint integrated Spin Game PowerPoint media.	100,00	0,00	Very Practical
4.	Students read and pay attention to the Material menu listed on Classpoint's integrated Spin Game PowerPoint media.	100,00	0,00	Very Practical
5.	Students read and listen to Problems About the Excretory System.	100,00	0,00	Very Practical
6.	Students discuss and answer questions on Problems About the Excretory System.	100,00	0,00	Very Practical
7.	Students discuss and answer questions on Problems About the Excretory System by identifying and analyzing existing information relationship.	100,00	0,00	Very Practical
8.	Students read and pay attention to the practice questions.	100,00	0,00	Very Practical
9.	Students discuss and answer questions on the Practice Questions.	100,00	0,00	Very Practical
10.	Students answer questions in the Practice Questions by understanding and describing existing information or events or data.	100,00	0,00	Very Practical
11.	Students answer questions in the Practice Questions by identifying and analyzing existing information relationship.	100,00	0,00	Very Practical
12.	Students read and pay			

No	Aspect Assessed	Implementation (%)		Criteria
		Yes	No	
	attention to the "Help" button which contains a guide to playing Spin Game on ClassPoint integrated Spin Game PowerPoint media.	91,67	8,33	Very Practical
13.	Students work on questions on the Spin Game.	100,00	0,00	Very Practical
14.	Students answer questions in the Spin Game by understanding and describing existing information or events or data.	100,00	0,00	Very Practical
15.	Students answer questions in the Spin Game by identifying and analyzing existing information relationship	91,67	8,33	Very Practical
Average		98,61	1,39	Very Prctical

The ClassPoint integrated Spin Game PowerPoint media that has been designed obtained an average response percentage of 98,61% with "very practical" criteria, based on the Table 8. This showed that the media can be said to be practical used in learning. According to Saptomo (2018), media is present and plays a significant role. When selecting media, one should consider several factors, such as cost, practicality, ease of use, flexibility, and aligned with learning objectives. The media was classified as "very practical" criteria. As the contrary, 1,39% students are not completing the following tasks: reading the instructions and paying attention to the "Panduan" and "Help" buttons; and responding to questions on the Spin Game by identifying and analyzing existing information relationships. The absence of student enthusiasm for learning is one of the internal factors that lead to incomplete activities. According to Hartata (2019), personal motivation is a process that focuses an individual's efforts on reaching objectives without the need for support or guidance. Students that are eager to learn demonstrate passion when completing assignments.

The following are the results of the student responses while utilizing ClassPoint integrated Spin Game PowerPoint media.. The results can be seen in Table 9.

Table 9. Questionnaire Results for Student Responses to ClassPoint integrated Spin Game PowerPoint Media.

No	Aspect Assessed	Responses (%)		Criteria
		Yes	No	
1.	Does ClassPoint integrated Spin Game PowerPoint media interesting and motivating you to learn?	100,00	0,00	Practical
2.	Can you operate ClassPoint integrated Spin Game PowerPoint media easily?	87,50	12,50	Very Practical
3.	Is the language used in ClassPoint integrated Spin Game PowerPoint media. easy to understand?	100,00	0,00	Very Practical
4.	Is the text in the ClassPoint integrated Spin Game PowerPoint media clearly to read and easy to understand?	100,00	0,00	Very Practical
5.	Does the "Panduan" button make it easier for you to understand the explanation of the function of the buttons when using the media?	95,83	4,17	Very Practical
6.	Does the "Help" button make it easier for you to understand the guide to playing Spin Game?	95,83	4,17	Very Practical
7.	Does the Material menu make it easier for you to understand the Human Excretory System Material?	91,67	8,33	Very Practical
8.	Do you find it easier and more motivated to study Human Excretory System Material by using ClassPoint integrated Spin Game PowerPoint media?	87,50	12,50	Very Practical
Interpretation				
9.	Does ClassPoint integrated Spin Game PowerPoint media help you understand information or events or data?	87,50	12,50	Very Practical
10.	Does ClassPoint integrated Spin Game PowerPoint media help you describe information or events or data?	83,33	16,67	Practical
Analysis				
11.	Does ClassPoint integrated Spin Game PowerPoint media help you identify and analyze information relationships used to express opinions?	83,33	16,67	Practical
Average		92,05	7,95	Very Practical

The ClassPoint integrated Spin Game PowerPoint media obtained an average response percentage of 92.05% with "very practical" criteria, based on the findings of student responses in Table 9. This indicated that the media can be said to be practical used in learning. Students give a positive response as they enjoy utilizing the ClassPoint integrated Spin Game PowerPoint media. This is in accordance with Sundari's research (2021), which shows that ClassPoint presentation media can attract attention students so that they might focus and self-motivate to learn in an enjoyable environment.

There are several aspects that have "practical" criteria, namely students are assisted in describing information (interpretation), identifying, and analyzing information relationships (analysis). The student's internal elements, such as psychological and physiological disorders, led to a "no" response in several areas. At the end of the class, some students were less enthusiastic and lethargic which indicates that they were hungry and wanted a break time. In this case, Slameto (2010) stated that internal factors influencing learning outcomes include physical health, intellect, attention, interests, talents, preparedness, learning motivation, student attitudes, and drowsiness. According to Parni (2017), a physically fit condition will benefit each student's unique learning activities. Otherwise, a weak or sick body will make it more difficult to accomplish learning objectives.

The effectiveness of the media was obtained from data on the results of tests before (pre-test) and after (post-test) using the media. There is a maximum score of 100 for the descriptive questions that were provided. The results of the two tests were used to describe the effectiveness of the ClassPoint integrated Spin Game PowerPoint media through completeness and improvement in student learning outcomes. The following are the results of completeness students learning outcomes when using media in Table 10.

Table 10. Completeness of Student Learning Outcomes Using ClassPoint integrated Spin Game PowerPoint Media

No	Students	Pre-Test Score	Completeness	Post Test Score	Completeness
1.	Student 1	45	I	90	C
2.	Student 2	25	I	80	C
3.	Student 3	25	I	80	C
4.	Student 4	60	I	80	C
5.	Student 5	50	I	90	C
6.	Student 6	20	I	80	C
7.	Student 7	45	I	80	C
8.	Student 8	30	I	70	I
9.	Student 9	15	I	80	C
10.	Student 10	25	I	80	C
11.	Student 11	20	I	80	C
12.	Student 12	20	I	80	C
13.	Student 13	50	I	90	C
14.	Student 14	0	I	30	I
15.	Student 15	5	I	50	I
16.	Student 16	45	I	90	C
17.	Student 17	35	I	80	C
18.	Student 18	0	I	40	I
19.	Student 19	35	I	90	C
20.	Student 20	40	I	90	C
21.	Student 21	40	I	90	C
22.	Student 22	25	I	85	C
23.	Student 23	65	I	90	C
24.	Student 24	25	I	80	C
Average		31,04		78,13	
Completeness (%)		0,00		83,33	

Note:
C= Complete
I= Incomplete

Before using the ClassPoint integrated Spin Game PowerPoint media, there were no students who experienced completeness in the pre-test score results. The percentage of completeness in the students' overall pre-test score is 0% complete, it means that the Minimum Completeness Criteria (KKM) on 77 is not fulfilled. After students were given the ClassPoint integrated Spin Game PowerPoint media, it was found that students experienced completeness in their post-test score results. The post-test results have an 83,33% completeness rate. This indicates that most students have achieved the KKM, which is ≥ 77.

After obtained the results of the pre-test scores and post-test scores as well as the completeness of student learning outcomes, then proceed with the N-gain analysis to describe the increase that occurred between the students' pre-test scores and post-test scores. The following are the results of improving student learning outcomes when using ClassPoint integrated Spin Game PowerPoint media. Results can be seen in Table 11.

Table 11. Improving Student Learning Outcomes Using ClassPoint integrated Spin Game PowerPoint Media

No	Students	N-gain Score	Criteria
1.	Student 1	0,82	High
2.	Student 2	0,73	High
3.	Student 3	0,73	High
4.	Student 4	0,50	Medium
5.	Student 5	0,80	High
6.	Student 6	0,75	High

No	Students	N-gain Score	Criteria
7.	Student 7	0,64	Medium
8.	Student 8	0,57	Medium
9.	Student 9	0,76	High
10.	Student 10	0,73	High
11.	Student 11	0,73	High
12.	Student 12	0,75	High
13.	Student 13	0,80	High
14.	Student 14	0,30	Medium
15.	Student 15	0,47	Medium
16.	Student 16	0,82	High
17.	Student 17	0,69	Medium
18.	Student 18	0,40	Medium
19.	Student 19	0,85	High
20.	Student 20	0,83	High
21.	Student 21	0,83	High
22.	Student 22	0,80	High
23.	Student 23	0,71	High
24.	Student 24	0,73	High
Average		0,68	Medium

N-gain analysis was used to determine the increase in learning outcomes students when using the ClassPoint integrated Spin Game PowerPoint media. According to Table 11, the average N-gain result of 0,68 indicated medium criteria. Seven of twenty-four students had N-gain results in the medium criteria, while seventeen students obtained N-gain results in the high criteria. This showed that the media can be said to be effectively used in learning.

Two indicators of critical thinking were used in this research, namely interpretation and analysis. The following are indicators of students' achievement of critical thinking, interpretation, and analysis before and after using the media. The results can be seen in Table 12.

Table 12. Achievement of Critical Thinking Indicators Interpretation and Analysis Student

No	Critical Thinking Indicator	Average (%)		N-gain Score	Criteria
		Pre-Test	Post-Test		
1.	Interpretation	31,25	76,25	0,65	High
2.	Analysis	30,73	82,29	0,74	Medium

Both indicator of critical thinking used in this research, namely interpretation and analysis showed an increase in the achievement of critical thinking indicators after using media. The critical thinking indicator's N-gain interpretation is 0,65, indicating "medium" criteria, while the analysis is 0,74, indicating "high" criteria. This is in line with the research carried out by Darma et al. (2014) which states that there is a significant influence in learning that is more visible when using the deep game method learning compared to using conventional methods.

Students themselves encounter the challenges they face when answering questions. The presence of students who do not fully understand the material caused the students to answer questions incorrectly and incompletely, resulting in less than optimal results. The questions presented are high-level thinking questions, such questions about understanding and describing information (interpretation) and questions about identifying and analyzing information relationships (analysis). By engaging in learning activities that centered on knowledge synthesis and analysis, students may develop their critical thinking abilities. Students engage in analytical tasks such as recognizing, discriminating, performing investigations, classifying, and arranging the data they have gathered (Susilowati & Sumaji, 2020). This is similar to studies by Setiawati & Corebima (2017), that critical thinking skills cannot emerge naturally and not inherited. The improvement of critical thinking abilities comes from targeted training.

CLOSURE

Conclusion

ClassPoint integrated Spin Game PowerPoint media has been created to improve the critical thinking ability of class XI SMA on Excretory System Material. The media is declared valid, practical, and effective for use in learning. Validity obtained a percentage of 95.44% and classified as "very valid" criteria originates from systematic presentation, application quality, display/graphics quality, material quality, and illustration quality. Practicality obtained a percentage of 98,61% and classified as "very practical" criteria originates from the results of observation of student activities and obtained a percentage of 92,05% and classified as "very practical" criteria originates from the results of student responses. Effectiveness obtained an average of 0,68 and classified as "medium" criteria originates from N-gain analysis.

Suggestion

Material was used in this research only limited to Excretory System material, so that media development using other biological materials can be carried out. Selecting the learning materials to use does not need to be too complicated, however it is best to ensure that the material can enable students to reason. The critical thinking indicators used are interpretation and analysis proposed by (Facione, 2015). Further researches are able to conduct verification with the same indicators or other indicators.

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