



Development of Interactive Learning Media Assisted by Articulate Storyline 3 to Train High School Students' Problem-Solving Skills

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ARTICLE HISTORY

Submitted : 22 December 2023
Reviewed : 24 December 2023
Revised : 24 December 2024
Accepted : 23 March 2024
Publication : 25 April 2024
Avaible Online : 25 April 2024

KEYS WORDS

Learning media, articulate storyline 3, problem-solving skills

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ABSTRACT.

As a result of the PISA test, the science category indicates that students' problem-solving abilities in Indonesia fall within the low category. This study aims to describe (1) the feasibility of interactive learning media assisted by the Articulate Storyline 3 application, (2) the improvement of students' problem-solving abilities after using learning media assisted by Articulate Storyline 3, and (3) student responses to Articulate Storyline 3-assisted learning media. This research uses the Research and Development (R&D) method with the ADDIE model. The research subjects are students of the 10th grade at Public High School 8 in Bengkulu City. The research instruments used are interview sheets, observations, needs analysis, expert validation, pretest-posttest, and student response questionnaires. Data collection is done through observations, interviews, and questionnaires. Data were analyzed using quantitative analysis techniques and summarized qualitatively. The product generated is interactive learning media assisted by Articulate Storyline 3, with expert validation results showing a 90% percentage in the highly feasible category. Students' problem-solving abilities, tested with the N-gain test, obtained a score of 0.65, indicating moderate improvement, and student responses received an 83% percentage in the very good category. Based on these results, it can be concluded that the development of interactive learning media assisted by Articulate Storyline 3 to train students' problem-solving abilities is highly feasible.

INTRODUCTION

The Industrial Revolution 4.0 places great emphasis on technological progress with such rapid development. The fast pace of science and technology is very influential and changes the world of education. Education always tries to adapt to these changes with innovations from technological developments to make the learning process more interactive and innovative. In this case, the government took action by changing the existing education curriculum in Indonesia. The independent curriculum is a new policy designed by the government to enhance the quality of students so that they can face complex future challenges (Muthoharoh, 2023).

The independent curriculum has two main concepts: independent learning and independent campus. Freedom to learn is freedom of thinking and freedom of innovation through the policy of independent learning education transformed to realize superior Indonesian human resources (Vhalery et al., 2022). Educators can select diverse learning tools, ensuring that teaching and learning activities align with students' needs and preferences. Several important points are focused on

educators when choosing teaching materials to enhance the quality of teaching, including educators must understand the right type of teaching media, the criteria for using teaching media, and monitoring the use of learning media as teaching aids in the learning process benefit students by enhancing their understanding and engagement (Ministry of Education and Culture, 2022)

Teaching media is crucial in facilitating the learning process and fostering meaningful learning experiences, motivating students to develop essential 21st-century skills. This represents a significant advancement in education (Daryanes et al., 2023). Learning in the 21st century is not only the delivery of information, but educators should moreover, it can also assist students in confronting the challenges of the 21st century. One of the most important lessons in today's era is physics learning. Physics is the most fundamental study of objects around us and the universe. As a discipline exploring natural phenomena, physics offers valuable insights for humans to harmonize their lives. Giancoli's quote in Halmaida et al. (2021) research states, "Physics is the most basic science because it deals with the behavior and structure of objects." Learning physics itself is not effective if you only master the concept, but it is necessary to apply the idea to solving physics problems in everyday life because physics lessons contain theory and formulas that require students' capacity to solve problems (Sari et al., 2019).

The problem-solving skills of students in Indonesia fall into the low category, and this is based on the results of the PISA (International Student Assessment Program) test in the science category, showing Indonesia is ranked 70 out of 78 countries, conducted by OEAD (Organization For Economic Corporation And Development) (Rahmat & Arham, 2022). According to Suryani et al. (2020), students' problem-solving abilities are relatively low due to their inability to comprehend and analyze given problems, leading to difficulties in finding appropriate solutions. This problem-solving ability must be trained as early as possible students, starting from 10th-grade high school students who begin to be trained in problem-solving skills so that later they are familiar when faced with problems that require several steps in the process. Critical thinking skills are essential for development in various subjects, especially science, so students can be critical when solving problems. Then, they can make the right decisions to solve existing problems (Zuniari et al., 2023).

A problem is a statement about a situation that has not been resolved with the expected. In general, human problems are very diverse, one of which is a problem in learning that requires the ability to solve it. Problem-solving is the right method to train students in solving problems, especially in learning. Problem-solving in learning requires appropriate steps to make it easier for students to solve problems. According to George Polya (Purba et al., 2021), the steps for solving the problem are as follows: 1) Understanding the problem. This step includes what is known and asked, providing insight into whether it is enough to do what is asked. 2) In this step, Planning to solve the problem is to identify the problem and then find the right way to solve it. 3) Implementing troubleshooting: This step emphasizes completing the plan by checking each step to see whether it is correct or not and proving and implementing according to the plan made. 4) Recheck the results. In this step, check the correctness of the answer

When tackling physics problems their teacher assigns, students frequently resort to directly applying mathematical equations without engaging in analysis, hypothesizing the applicable formulas, or memorizing examples of previously solved problems to address new ones. As a result, students encounter challenges when confronted with complex issues. While students can solve straightforward quantitative problems, they struggle with more intricate ones. Training students' problem-solving skills, teachers are required to innovate and develop ways of learning so that students can study physics subjects actively and meaningfully. Physics learning media is useful for making something abstract and concrete. Media facilitates the delivery processes from teachers to students in learning (Mu'tiah et al., 2023).

Media utilization is anticipated to influence students' learning and thinking skills. One strategy teachers can employ to nurture students' learning and thinking abilities is to prioritize selecting and integrating appropriate learning media. Learning media can encourage learners to take responsibility, control their learning, and take a long-term perspective on their learning process. Using appropriate learning media will provide good results, including developing students' mindsets, changing attitudes and characters, and bringing up their creative ideas (Hasan et al., 2021). Media can address the limitations of students' experiences by facilitating direct interaction between participants and the environment. It can also ensure consistent observations and instill fundamental concepts that are accurate and authentic. Moreover, media can foster motivation and encourage effective learning. Additionally, it can spark new interests and desires while controlling the pace of student learning and

offering a comprehensive learning experience from tangible to abstract concepts (Mahzum et al., 2020).

The media can also be innovated again, and animations can be added that make classroom learning interactive and more interesting. Interactive learning media assisted by the application Articulate Storyline 3, the Articulate Storyline 3 application has a feature where users can set timers and animations to insert fonts or graphics on layers. There are three types of slides specifically for inserting quizzes/questions. And there is also a trigger menu or complex navigation buttons equipped with interactive objects that make interactive multimedia products more interesting. Articulate Storyline 3 software is helpful in producing captivating and informative media presentations. Articulate storyline 3 provides advantages by making presentations more complete because it allows beginners to be more creative in creating teaching materials assisted by an articulate storyline (Daryanes et al., 2023). The features of this software consist of an easy-to-use timeline, graphics, videos, and characters and create a final web format publication (HTML5) and applications that can be saved on many electrical devices such as Android, computers, and tablets (Alhadi & Cholik, 2021) Based on the results of direct observations at Public High School 8 Bengkulu City that there are still few teachers who use learning media as a learning resource and the lack of student problem-solving skills on significant figures and scientific notation in physics lessons, so researchers are interested in doing this research entitled "Development of Interactive Learning Media Assisted by Articulate Storyline 3 to Train Student Problem Solving Skills at Senior Public High School 8 Bengkulu City".

RESEARCH METHODS

Research Approach

The research method used is Research and Development (R&D). The research and development (R&D) method is utilized to create specific products and assess the viability of the products once they have been developed. The research stage of R&D in the research carried out is a step to obtain information on problems in physics learning, which is carried out through interviews and questionnaires that analyze the need to find solutions. In its development, researchers applied the ADDIE model. The ADDIE model stands for Analysis, Design, Development, Implementation, and Evaluation (Rayanto, 2020).

Data was collected using interviews, observations, and needs analysis questionnaires at the analysis stage. The research subjects were 10th-grade Public Senior High School 8 Bengkulu City students. At the design stage, an appropriate product or media is designed to overcome the problems found in schools. Then, at the development stage, a product is created that is needed during the learning process in class. This product will later help students when studying in class. The implementation stage is the application or trial of learning with the media that has been created. Lastly is the evaluation stage, namely the stage to evaluate the results of the learning methods and media used, whether they are appropriate and effective enough for learning or still need improvement.

Research Participants

The research was conducted at Public Senior High School 8 Bengkulu City. This research was conducted in August, the odd 2023/2024 academic year semester. In this research, the research subjects were 10th-grade students, they were chosen because they were the first generation to apply the independent curriculum. This independent curriculum emphasizes using technology in learning to improve human resources, which will become increasingly superior in the future. 10th-grade students at Public Senior High School 8 Bengkulu City have 9 classrooms, each with 35 students. In this study, 3 classes were used as samples of needs analysis data.

Instrument Research

The research instruments used are interview sheets, observations, raising needs analysis, expert validation, pretest-posttest, and student response questionnaires.

Data Collection

The data collection in this study is conducted through observation, interviews, and questionnaires. Data collection in this study used instruments such as observation sheets, interview sheets, and needs

analysis questionnaire sheets. Observations are made to find out information about school conditions, problems, and obstacles in the learning process, followed by direct interviews with teachers who teach physics and several students at the school where the research was conducted. Data collection also uses a needs analysis questionnaire, which gives students a set of written questions to determine the level of student needs for the development of Articulate Storyline 3 assisted learning media. The student needs analysis questionnaire was distributed to 10th-grade Public Senior High School 8 Bengkulu City students.

Data Analysis

This study's data analysis techniques are quantitative and are concluded qualitatively. This quantitative analysis technique is carried out to measure student needs statistically, which refers to questionnaire answers that have been filled out by 3 classes with a total of 100 students at Public High School 8 Bengkulu City. At the assessment stage of the needs analysis questionnaire, the Likert scale assessment criteria are used to measure perceptions, attitudes, or opinions of a person or group about an event or social phenomenon. There are two forms of questions on the Likert scale: the positive question form to measure the positive scale and the negative question form to measure the negative scale. Positive questions are scored 4, 3, 2, and 1, While the negative question forms are given scores of 1, 2, 3, and 4.

Table 1. Likert scale calculation

Information	Value
Strongly Agree	4
Agree	3
Disagree	2
Strongly Disagree	1

Translating Likert scale results is by interval analysis. In order to be calculated in quantitative form, answers from respondents are given a weight or score. The weights or scores given for each question are Strongly Agree = 4, Agree = 3, Disagree = 2, and Strongly Disagree = 1 (Pranatawijaya & Priscilla, 2019). Calculating the percentage of answers to respondents to each statement using research by Rita Erlina (Erlina et al., 2022), namely:

$$\%X_{in} = \frac{S}{S_{maks}} \times 100\%$$

Information:

$\%X_{in}$ = Answer score percentage

$\sum S$ = Total answer score count

S_{maks} = Score maximum

The results of data processing are then classified based on the calculations done, then the interpretation of the scores is changed into categories. The drafting criteria are strongly agree, agree, disagree, and strongly disagree. At the design stage, determine what sub-materials will be included in interactive learning media using Articulate Storyline 3. In addition to the material menu of important numbers and scientific notation on the media, there is a menu of resources, references, learning videos, quizzes and discussions, learning outcomes, author, help, and exit menus, which can make students more enthusiastic to learn.

The development stage will produce pre-designed products at the design stage. This stage is the development stage of interactive learning media assisted by Articulate Storyline 3. Before being applied directly in learning, expert validation is first checked to assess the feasibility of the learning media. The results of expert validation are used as a reference in improving the media to be developed. The data obtained is qualitative, namely comments and suggestions from validators, while quantitative data is obtained from the results of validation questionnaires consisting of several aspects, namely material standards, presentation standards, language aspects, and problem-solving aspects. Then, after getting the percentage score of each aspect, calculations are carried out using formula (1), categorizing the results obtained with the interactive learning media validation score

assessment criteria table. Based on table the assessment criteria for media validation scores can be feasible if the results of media validation obtain a percentage score greater than 51%.

Table 2. Assessment percentage expert validation score

Percentage	Interpretation
$76\% \leq \text{skor} \leq 100\%$	Very Worth It
$51\% \leq \text{skor} \leq 75\%$	Worth It
$26\% \leq \text{skor} \leq 50\%$	Not Worth It
$0\% \leq \text{skor} \leq 25\%$	Very Unworthy

The implementation stage tests the improvement of problem-solving skills and the response of students to the media that has been developed. Before implementing the media, students are given *pretest* questions to measure their problem-solving ability. Then, after learning how to use media, students are given back questions in the form of a posttest to measure the improvement of their problem-solving skills. The pretest-posttest questions were tested on 32 students of class X. B. The pretest-posttest questions contain material about important numbers and scientific notation. Calculations are carried out using the formula (N-gain) to measure the increase in students' problem-solving abilities. The following is the N-gain calculation formula (Silfiani et al., 2022):

$$N - gain = \frac{X_{\text{posttest}} - X_{\text{pretest}}}{X_{\text{max}} - X_{\text{pretest}}}$$

The N-gain score is divided into five categories. The N-gain score assessment category is said to increase with the medium category if the assessment results obtain scores in the range of 0.3 and 0.7 scores, which can be seen in the following Table 3.

Table 3. Category N-gain problem-solving ability

Value N-gain	Category
$0,70 \leq \text{N-gain} \leq 1,00$	Tall
$0,30 \leq \text{N-gain} \leq 0,70$	Keep
$0,0 \leq \text{N-gain} \leq 0,30$	Low
$\text{N-gain} = 0,00$	No Decline
$-1,00 \leq \text{N-gain} \leq 0,00$	There is a decrease

(Mansur et al., 2022)

In the implementation stage, students also tested their responses to using Articulate Storyline 3 assisted learning media to train students' problem-solving skills. The percentage of student response questionnaires has 3 aspects: appearance, material presentation, and benefits. The percentage score is calculated using the formula (1). Based on table 5. The criterion of a percentage of perception can be good if the media results obtain a percentage greater than 51%.

Table 4 . Student response score assessment percentage

Percentage	Interpretation
$76\% \leq \text{skor} \leq 100\%$	Excellent
$51\% \leq \text{skor} \leq 75\%$	Good
$26\% \leq \text{skor} \leq 50\%$	Bad
$0\% \leq \text{skor} \leq 25\%$	Very Not Good

The last stage is Evaluation. At this stage the media that has been implemented to students gets comments and suggestions from both students and teachers. Then the learning media assisted by Articulate Storyline 3 was improved to become a more viable and better product.

RESULTS AND DISCUSSION

Results

This study resulted in a product in the form of interactive learning media aided by the Articulate Storyline 3 application on the topic of measurements (significant figures and scientific notation). This learning media can assist and facilitate students in understanding topics that are often considered difficult, especially in each physics lesson. The development of interactive learning media aided by the Articulate Storyline 3 application is designed based on the steps in the ADDIE model, namely Analysis, Design, Development, Implementation, and Evaluation.

1. Analysis

The results of the student needs analysis questionnaire that has been distributed to 100 students in 3 classes at Public High School 8 Bengkulu City show that the need for interactive learning media in the learning process gets a fairly large percentage, namely 84% of the interpretation shows that they strongly agree if there is a use of media for their learning process. In addition, the student needs analysis questionnaire results also showed that 84% of the interpreters strongly agreed with the skills that would improve their solving ability. Based on the results obtained in the needs analysis, it is categorized as strongly agreeing with the existence of interactive learning media with the help of Articulate Storyline 3 to train students' problem-solving skills.

2. Design

The design stage of interactive learning media starts from making an opening containing the title of the material to be studied, and there is a section filling in student names before entering the learning media. Furthermore, a home menu contains learning objectives, learning outcomes, materials, quizzes, and learning outcomes. There are also supporting menus such as resources, references, learning videos, quizzes, discussions, author, help, and exit menus. In important numbers and scientific notation, each material has explanations and examples of questions that can train students' problem-solving skills, and then there is a video that contains explanations of important numbers and scientific notation. There are exercises/activities that students can do both individually and in groups. In the following the product design can be seen in Figure 1.

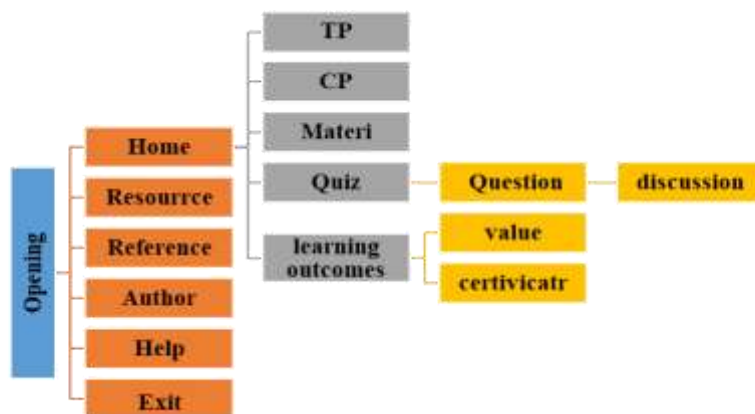


Figure 1. Articulate Storyline 3 assisted learning media design

3. Development

This third stage, it aims to measure the feasibility of the product developed through expert validation. 2 lecturers and 1 physics teacher validated the product developed. The three validators concluded that the learning media assisted by *Articulate Storyline 3* to train students' problem-solving skills on important numbers and scientific notation material was very feasible with the results in tabTable

Table 5. Table qualifying results media by members

Indicator	Percentage	Category
Others	89%	Very Worth It
Presentation	90%	Very Worth It
Language	89%	Very Worth It
Media	93%	Very Worth It
Troubleshooting Capabilities	90%	Very Worth It
Sum	90%	Very Worth It

In Table 5, the results of the feasibility validation of interactive learning media assisted by *Articulate Storyline 3* were obtained to train students' problem-solving skills by experts on content indicators of 89%, presentation indicators of 90%, language indicators of 89%, media indicators of 93% and problem-solving initiators of 90%. From these results, an overall of 90% was obtained with a very decent category.



Opening



Menu Home



Material Menu



Learning Videos

Figure 2. Opening display, home menu, material menu, and learning videos

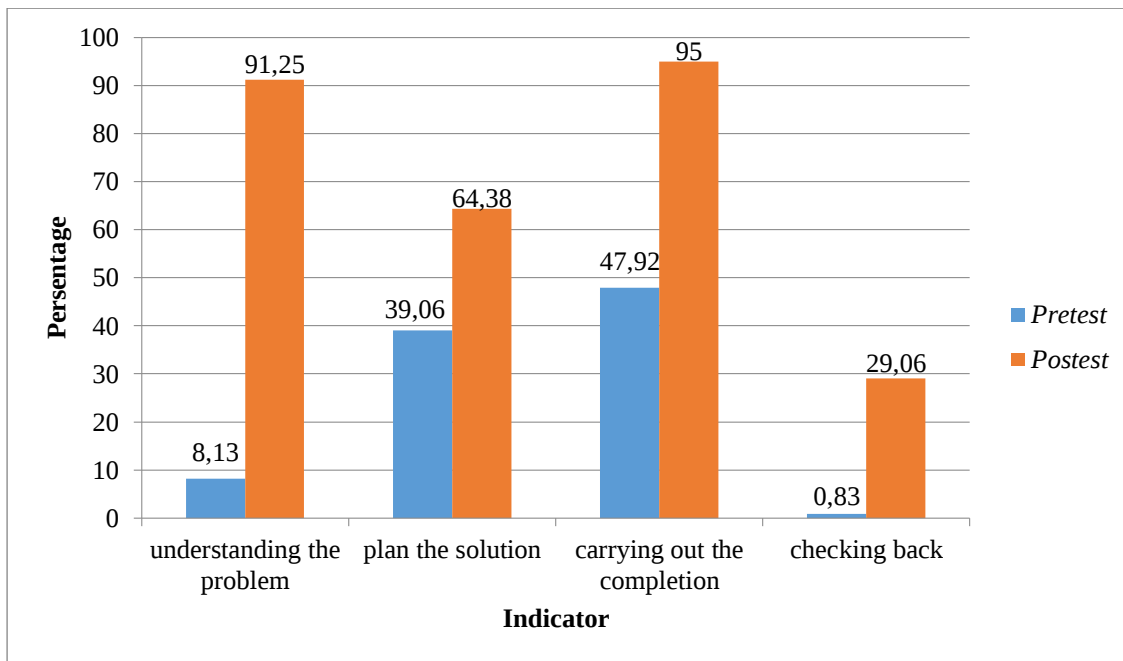
4. Implementation

At this stage, the results were obtained with 0.65 with moderate criteria. The results can be seen in table 6 below:

Table 6. Results of improved problem solving of students

Data	Pretest	Posttest	N- gain	Criterion
Minimum Value	6	48		
Max Value	48	96		
Average	24,88	74,56	0,65	Medium

N-gain results show 0.65 with moderate criteria, which means that they still lack improvement in students' problem-solving abilities. This is due to the student's ability on the last indicator, i.e., very lacking re-checking. Students are more focused on three indicators of problem-solving: understanding the problem, planning the solution, and implementing the problem solving only. As for the last indicator, namely checking back, it is still very poorly understood and not really cared about by students. There is also a graph illustrating the improvement of each troubleshooting indicator shown in figFigurebelow:

**Figure 3.** Student problem-solving ability improvement graph

The chart above shows that each indicator of problem-solving ability has a moderate improvement. In the first indicator, it is understanding the problem by 91.25%. In the second indicator, it is planning to solve the problem by 64.37%, in the third indicator, it is implementing a problem-solving plan by 95%, and in the last indicator, it is to re-examine 29.6%. From the results of the four indicators, an increase in problem-solving ability with moderate criteria was obtained. At this stage of implementation, student response questionnaire sheets were also given, the results of student response questionnaires were categorized as very good, with an average of 83%, can be seen in table 7 the following:

Table 7. The results of the seiswa response questionnaire were obtained by the media

Aspects	Percentage	Criteria
Presentation	85%	Excellent
Materi	82%	Excellent
Benefit	81%	Excellent
Overall Average	83%	Excellent

Articulate Storyline 3 assisted interactive learning is very feasible to develop, and student response to this learning media is categorized as very good, with an average response value of 82%. This media can also improve students' problem-solving abilities.

5. Evaluation

The evaluation stage is a stage that must be improved in product development. Add a discussion section after the quiz based on suggestions and inputs obtained from the validation questionnaire on the interactive learning media developed. On the media, unnecessary navigation buttons are removed, and it is hoped that this media can be used in all learning models. Suggestions and input from validators on expert validation sheets are used as a reference in improving interactive learning media assisted by Articulate Storyline 3. The final assessment result of each validator is that the developed media is suitable for use, provided that it must be improved.

Discussion

1. Analysis

A needs analysis was carried out at the study's initial stage. The results of teacher and student interviews and student needs analysis questionnaires are obtained at this stage. The results of the interview analysis of teacher and student needs can be concluded when learning takes place in the classroom, and the media used by teachers and students are PowerPoint and learning videos sourced from YouTube, printed books, and student worksheets only. Meanwhile, students need interactive learning media that they can use with their mobile phones and can be accessed anytime and anywhere to utilize technology in 21st-century learning. Then, the current learning system it is still teacher-centered. The learning process is still carried out by teachers conventionally, namely lectures and group discussions that students consider less interesting, so they lack interest in learning and make students bored. This is consistent with several previous studies, which found that the learning process is still conventional, leading students to be passive during the learning process (Nadeak et al., 2023; Firmansyah & Jiwandono, 2022). Students expect that the teaching materials applied by the teacher can also be electronic-based and can train students' creative thinking skills and ability to solve a problem (Karyadi & Wardana, 2023). From this, it can be concluded that teachers need technology-based learning media to train and improve students' ability to solve a student problem. One of the right applications is the Articulate Storyline 3 application.

2. Design

After defining the problems and needs, the next stage is to design the product to be used in research. Interactive learning media must be designed to be as attractive as possible so that students are enthusiastic about teaching and learning activities in the classroom. Learning media is pivotal in cultivating positive student attitudes toward the subject matter and the learning process. By employing appropriate learning media, the learning experience becomes more engaging, motivating students to develop an affinity for the subject being studied. This is particularly significant in subjects like physics, which are often perceived as challenging and unappealing (Firmadani, 2020).

The design section starts by making an opening. This section presents a presentation about the material to be taught at the meeting. This section also considers the name of the researcher and the origin of the researcher's university. Then, a home menu display will appear containing learning objectives, learning outcomes, materials, quizzes, and learning outcomes. There are also supporting menus such as resources, references, learning videos, quizzes, discussions, authors, help, and exit menus. Each material has explanations and examples of questions that can train students' problem-solving skills, and some videos contain explanations of essential numbers and scientific notation to clarify further the material taught.

3. Development

The next step is development the third stage aims to determine the feasibility of the product developed through expert validation and see the student's response after using the product. The product that has been made is an interactive learning media assisted by Articulate Storyline 3, validated by 3 validators consisting of 2 lecturers and 1 physics teacher. The results of the feasibility validation of media developed based experts' assessment of content indicators 89%, presentation indicators 90%, language

indicators 89%, media indicators 93% and problem solving initiators 90%. From these results, 90% was obtained with a very decent category.

These findings are pertinent to the study titled "Gamification-based Multimedia Articulate Storyline 3 to Improve Critical Thinking Skills and Self-regulated Learning." The development of gamification-based Articulate Storyline 3 multimedia focusing on the properties of acid, base, and neutral solutions has undergone validation by experts and teachers, yielding positive results. The software engineering aspect received the highest score (93.75%), followed by audio and visual communication (91.67%) and material presentation (90%). The multimedia application is accessible to validators through download options on Android or laptop platforms (Heliawati et al., 2022). This research is also pertinent to the study titled "Development of Interactive Media Based on Articulate Storyline to Improve Students' Creative Thinking Skills." The study's findings revealed a score of 82.64%, categorized as "good."

Regarding the benefits of interactive learning media based on articulate storyline software, obtaining a score of 87.5% can be classified as very good. This shows that the display of interactive learning media based on articulate storyline software has presented the concept of static fluid. In the illustration aspect, it obtained an average score of 79.17% and can be categorized as good. Regarding media design, it obtained an average score of 75% and can be categorized as sufficient. (Sari et al., 2022)

From these results, it can be concluded that this media can be used during the learning process at school. The opening display on the learning media contains the title of the material to be studied. After the opening section, a display that requires students to fill in their names will appear. Then, there will be a Let's Learn display, and students will enter the home menu, which contains learning objectives, learning outcomes, materials, quizzes, and learning outcomes. The learning menu section contains important numerical material, scientific notation, and activities. Each material has a learning video that explains

4. Implementation

Field research was carried out at this implementation stage, namely 10th grade B at Public Senior High School 8 Bengkulu City, consisting of 32 students. The initial stage is to give pretest questions to students before using interactive learning media assisted by Articulate Storyline 3 on important number material and scientific notation to measure students' problem-solving abilities. After filling out the pretest, students learn using learning media that have been developed. Learning using media was carried out 2 times. Learning at the first meeting was the material on important numbers and the material on scientific notation at the second meeting. At the last meeting, a post-test was given to see the improvement of students' problem-solving abilities calculated by the N-gain formula.

The N-gain result showed 0.65 with moderate criteria, which means that the results are still lacking in improving students' problem-solving abilities. This is because the ability of students in the last indicator, namely re-checking, is very lacking. Students focus more on three indicators of problem solving: understanding the problem, planning solutions, and implementing the problem solving only. The last indicator, namely re-checking, is still very poorly understood and not too cared about by students. There is also a chart illustrating the improvement of each troubleshooting indicator shown in figure 3. The graph shows that each indicator of problem-solving ability has a moderate improvement. This is consistent with Siagian's research (2022) findings, which found that the improvement in students' problem-solving skills was in the moderate category after implementing interactive learning using Articulate Storyline 3. The first indicator is to understand the problem by 91.25%. The second plan is to solve the problem by 64.37%. The third indicator is to implement a problem-solving plan by 95%, and the last indicator is to re-examine 29.6%. From the results of the four indicators, an increase in problem-solving ability with moderate criteria was obtained.

At this implementation stage, a student response questionnaire sheet is also given. This questionnaire aims to see student responses to the learning media they use. The results of the student response questionnaire were categorized as very good with an average of 83%. The results of the response questionnaire showed that the presentation aspect obtained 85% results with very good criteria. The aspect was improved by 82% with very good criteria and in the benefit aspect, results were obtained by 81% with very good criteria. This aligns with the research conducted by Qonita et

al. (2022), which found that students responded positively to the Articulate Storyline media. Learning media that receive positive and practical student responses can be used for the learning process (Khusnah et al., 2020; Pratama, 2019). These results show that interactive learning media assisted by Articulate Storyline 3 received a very good response from students of 10th grade B at Public High School 8 Bengkulu City.

5. Evaluation

The last stage is Evaluation, where some suggestions can be made for researchers, who are expected to be able to develop interactive learning media assisted by Articulate Storyline 3 on various learning models. Media can also be innovated again, and animations can be added that make classroom learning interactive and more interesting. The drawback of this study is the N-gain result obtained, which is 0.65 with moderate criteria, which means it is still lacking in improving students' problem-solving abilities. This is attributed to the student's limited proficiency in the final indicator, namely re-checking, as they primarily concentrate on the three problem-solving indicators. At this phase, feedback and recommendations on the applied media are gathered from both students and teachers. Subsequently, the learning media supported by Articulate Storyline 3 underwent enhancements to become a more robust and improved product.

CONCLUSIONS

Based on the results of research that was conducted at Public Senior High School 8 Bengkulu City, Against the feasibility test, an average percentage result of 90% was obtained with a very feasible category. Students get an N-gain of 0.65 in improving problem-solving ability with moderate improvement criteria. Student responses to interactive learning media assisted by Articulate Storyline 3 received an average score of 83% in the very good category. Based on these results, it can be concluded that developing interactive learning media assisted by Articulate Storyline 3 to improve students' problem-solving skills at Public Senior High School 8 Bengkulu City is very feasible. The next suggestion for researchers is to develop interactive learning media assisted by Articulate Storyline 3 on various learning models. The media can also be innovated again, and animations can be added that make classroom learning interactive and more attractive. The shortcomings in this study are the N-gain results obtained, namely 0.65 with moderate criteria, which means that it is still lacking in improving students' problem-solving skills. This is due to the ability of students in the last indicator, namely checking back very less. Students are more focused on three indicators of problem-solving. It is hoped that the next research can improve the four indicators contained in the ability to understand problems with interactive learning media assisted by articulate storyline 3. It is also expected that the media developed by the next researcher will be able to make learning media available in various learning models, not only problem-based learning models.

Acknowledgments

The researcher expressed his gratitude to the physics education study program of Bengkulu University for granting permission to researchers to participate in Merdeka Belajar Kampus Merdeka (MBKM) activities. Researchers publish research results in the form of articles. In addition, the researcher also expressed his gratitude to the research supervisor on the development of Interactive Learning Media Berrbaantu Articulate Storylline 3 to train students' problem-solving skills. Thank you also to the school of the Public High School 8 research site in Bengkulu city. I would also like to thank the journal AJSE Syiah Kuala.

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