

Development of Interactive Learning Multimedia Based on Articulate Storyline 3 to Increase Student's Interest in Learning English

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Abstract

This study developed interactive learning multimedia using Articulate Storyline 3 to increase eighth-grade students' interest in learning English at SMPN Satu Atap 01 Simpang Pematang. Using the 4D model (Define, Design, Develop, Disseminate), the research began with a needs analysis to identify learning problems and student needs. The design phase focused on content and multimedia structure aligned with the curriculum and learner characteristics. In the development phase, the product was created and validated by media, material, and language experts, whose feedback guided improvements. A limited trial tested the practicality and effectiveness of the media. In the dissemination phase, the final product was distributed for broader classroom use. Validation results showed high feasibility (media experts 90%, evaluation experts 92%, material experts 88%), practicality (95%), and effectiveness, with a 77% increase in student interest. Students favored the animations, clear narration, interactive quizzes, and instant feedback. Overall, the media was proven feasible, practical, and effective in enhancing English learning engagement.

Keywords: articulate storyline 3; interactive multimedia; R&D

INTRODUCTION

The integration of technology in the field of education has become increasingly indispensable, especially in the context of the 21st-century digital era, where the demand for innovation in teaching and learning processes is higher than ever. The use of technology is not only seen as an additional tool but also as a strategic necessity to improve the effectiveness, efficiency, and attractiveness of instructional delivery. According to Mayer's Cognitive Theory of Multimedia Learning (Mayer, 2021), the human cognitive system processes information better when it is presented through multiple modalities such as text, images, audio, and interactive elements

simultaneously. This theory emphasizes that multimedia can reduce cognitive overload and increase meaningful learning by allowing learners to build connections between verbal and visual representations of content.

In the context of English language learning, particularly in rural and underdeveloped regions such as SMPN Satu Atap 01 Simpang Pematang, the challenges are more apparent. Students often display low motivation and interest toward learning English due to various factors, including the abstract nature of the language content, the prevalence of traditional and teacher-centered instructional methods, and the lack of relevant, engaging, and contextually meaningful learning resources. Conventional teaching materials, such as printed textbooks and static slide presentations, are still predominantly used in this school, which unfortunately fail to sufficiently stimulate students' curiosity, active participation, and sustained engagement in the learning process.

Previous research has shown that the use of interactive and multimedia-based learning media has the potential to transform these challenges into opportunities. Brown (2020) and Harmer (2020) highlight that students are more likely to develop interest and motivation when exposed to rich and dynamic multimedia content, which offers visual stimulation, interactivity, and immediate feedback. Furthermore, recent studies, including those by Walker & Rahman (2022) as well as research published in Educational Technology Research and Development (2023), have demonstrated the positive impact of multimedia learning tools on students' cognitive engagement, language acquisition, and learning outcomes across diverse educational settings.

One of the technological solutions that stands out in addressing these instructional challenges is Articulate Storyline 3. This software offers a comprehensive range of features designed to create highly interactive and learner-centered digital learning materials. Among its prominent features are drag-and-drop tasks, animated transitions, scenario-based simulations, embedded quizzes, and personalized feedback mechanisms, all of which contribute to making the learning experience more enjoyable, memorable, and effective. The adoption of this technology is also in line with Indonesia's Kurikulum Merdeka and the framework of Profil Pelajar Pancasila, which stress the importance of fostering creativity, self-directed learning, problem-solving skills, and digital literacy among students.

Given these theoretical and empirical foundations, this research is conducted with the primary aim of developing an interactive multimedia learning product using Articulate Storyline 3 that is specifically tailored to improve students' interest and motivation in learning English at SMPN Satu Atap 01 Simpang Pematang. The development process follows the 4D instructional design model proposed by Thiagarajan et al., which consists of four systematic stages: Define, Design, Develop, and Disseminate. Through careful analysis of student needs, curriculum requirements, and technological possibilities, this study seeks to produce a multimedia product that is not only valid, practical, and effective but also relevant to the local educational context.

Ultimately, it is expected that the implementation of this interactive multimedia will lead to improved levels of student engagement, participation, and enthusiasm in learning English, thereby contributing positively to the overall quality of English language teaching at the school. Moreover, the results of this study are anticipated to offer valuable insights and practical recommendations for educators and policymakers interested in adopting technology-enhanced learning solutions in similar educational environments.

METHOD

This study employed a research and development (R&D) approach using the 4D model developed by Thiagarajan et al. (1974), which includes the stages of Define, Design, Develop, and Disseminate. This model was selected because it allows for systematic and iterative development of learning products tailored to learners' needs. The research was conducted at SMPN Satu Atap 01 Simpang Pematang, involving 12 students of grade VIII as research participants. These students were selected using purposive sampling based on their exposure to English learning and their accessibility for product testing. The research spanned four months, during which each phase of the 4D model was implemented sequentially: initial need analysis and curriculum review (Define), multimedia storyboard and script development (Design), product creation using Articulate Storyline 3 (Develop), and limited-scale implementation and expert validation (Disseminate).



Figure 1. Diagram of the 4D Development Model

The instruments used in this study included questionnaires, product validation sheets, and student interest observation checklists. Expert validation was conducted by media and content experts to assess the feasibility and effectiveness of the developed multimedia. Student feedback was collected through a pretest-posttest questionnaire measuring their interest in learning English before and after the multimedia was implemented. Data were analyzed using descriptive statistics for quantitative responses (mean, percentage) and qualitative analysis for interview and open-ended responses. The multimedia product was embedded with interactive features such as clickable dialogues, quizzes with instant feedback, and gamified tasks all built using Articulate Storyline 3. All research data, including questionnaire responses and validation results, were processed using Microsoft Excel. This comprehensive methodology ensured that the product was valid, practical, and able to enhance students' learning interest.

The following are the stages of developing teaching materials with the 4D model:

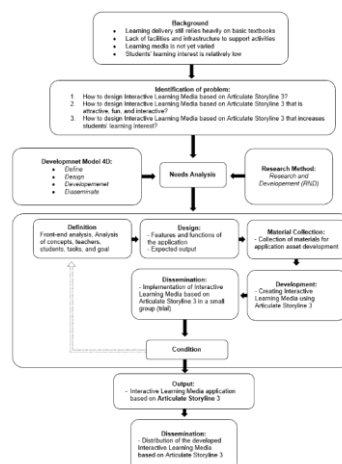


Figure 2. Stages of Teaching Material Development Using the 4D Development Model

This research involved eighth-grade students at SMP Negeri Satu Atap Satu Simpang Pematang. The research was conducted using the 4D development model proposed by Thiagarajan, which consists of four stages: Define, Design, Develop, and Disseminate. The procedures of each stage are described as follows:

Define Stage

At this stage, a needs analysis was conducted to identify the problems in English learning, particularly the lack of engaging learning media and low student interest. Data collection involved interviews with English teachers and classroom observations. This process aimed to identify key issues, such as the continued use of traditional textbooks and minimal use of interactive media, which formed the basis for developing a multimedia-based solution.

Design Stage

Based on the needs analysis, the researcher designed a prototype of the interactive learning media using Articulate Storyline 3. The design included setting clear learning objectives aligned with the English curriculum for Grade VIII (second semester), selecting appropriate formats and features, and preparing content including materials and quizzes. In this stage, instruments such as expert validation questionnaires and student interest questionnaires were also developed to assess the media's validity and practicality.

Development Stage

This stage involved creating the interactive multimedia product using Articulate Storyline 3 and conducting validation tests. The product was reviewed by media and material experts, and revisions were made based on their feedback to improve the quality of the media. A small-scale trial was then conducted with a group of students to evaluate the practicality and appeal of the product. Their responses provided further insight into the effectiveness and usability of the media.

Dissemination Stage

Once the media was deemed valid and practical, it was disseminated to another school, SMPN 22 Mesuji, to examine its applicability in a different learning environment. This dissemination involved implementing the interactive media in an English class taught by Mrs. Siyamini, S.Pd. The purpose was to assess the media's broader effectiveness and its impact on student engagement and interest in learning.

Data Collection and Analysis

Data collection methods included interviews, expert validation checklists, and student questionnaires. The analysis used a five-point Likert scale, with the following criteria for validation: 85.1–100% (very valid), 70.1–85% (valid), 50.1–70% (fairly valid), and 0.1–50% (less valid). Practicality was also measured on a similar scale, evaluating the product based on ease of use and attractiveness to students. All data were systematically analyzed to ensure that the developed media met the criteria for validity, practicality, and effectiveness in increasing student learning interest.

RESULT AND DISCUSSION

Define Stage

The development of interactive multimedia learning based on Articulate Storyline 3 was carried out from April to June, 2025, at SMP Negeri Satu Atap 1 Simpang Pematang. In the initial stage, the researcher conducted interviews and observations with the English teacher, Mrs. Justina Apriana Siallagan, S.Pd.,Gr. to analyze the learning conditions. It was found that the English learning materials were still conventional, lacking interactive features, and did not yet integrate engaging activities to foster student interest.

Additionally, it was identified that students already had access to digital devices, such as Android smartphones and tablets, making the integration of digital media a feasible and strategic solution. In line with current educational demands, the use of information technology in the classroom is essential to create a more engaging and student-centered learning experience.

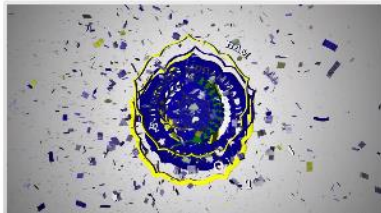
The curriculum used in the school follows the Merdeka Belajar (Independent Learning) framework, which emphasizes active student participation, exploration, and the integration of real-life contexts into learning (Prastyo et al. 2021 and Purwanto et al. 2022). Therefore, developing an interactive multimedia product aligned with curriculum goals and learner needs is crucial to support students' engagement and improve their interest in learning English.

Design Stage

This media was designed to enhance students' learning interest by providing visually appealing interfaces, interactive navigation, and content and exercises aligned with the basic competencies for eighth-grade students in the even semester.

Each component of the media was systematically developed, including the introduction page, learning objectives, core material presented through text and audio-visual formats, interactive exercises, and learning evaluations. The development of this media was based on a needs analysis and the characteristics of the learners, aiming to create a more enjoyable, meaningful, and effective learning experience.

Table 1. Design Stage

| No | Design | Pictures |
|----|--------------|---|
| 1. | Spash screen |  |

| No | Design | Pictures |
|----|--------------------|--|
| 2. | Login Page |  |
| 3. | Menu |  |
| 4. | Learning Objective |  |
| 5. | Materials |  |

| No | Design | Pictures |
|----|-----------|--|
| | |  |
| 6. | Video |   |
| | Exercise |    |
| | Developer |  |

Development Stage

Validation was carried out after the development of the interactive learning media based on Articulate Storyline 3 for the English subject (Grade VIII, second semester) was completed. This process involved six validators, consisting of three media experts and three material and assessment experts.

The purpose of the validation phase was to evaluate the feasibility of the developed learning media. The media experts focused on assessing the visual design and display aspects of the product, while the material and assessment experts evaluated the relevance and accuracy of the content and questions in accordance with the learning objectives and their application in the classroom. The validation results were obtained by calculating the total scores provided by all validators, which were then converted into percentages to determine the level of

validity. The evaluation was based on specific assessment criteria, and the scores were analyzed for each aspect.

Below is the recapitulation of the validation results from media experts, material and assessment experts provided for improvement.

Table 1. Media Expert Validation

| No. | Aspects | Percentage | Category |
|---------|---------|------------|-----------|
| 1 | Quality | 90% | Excellent |
| 2 | Teknis | 90% | Excellent |
| Average | | 90% | Excellent |

Based on the table above, the average score from the media experts was 90%, which falls into the "Excellent" category.

Table 2. Material Expert Validation

| No. | Aspects | Percentage | Category |
|---------|---------|------------|-----------|
| 1 | Content | 88% | Excellent |
| Average | | 88% | Excellent |

Based on the table above, the average score from the material experts was 88%, which falls into the "Excellent" category.

Table 3. Assesment Expert Validation

| No. | Aspects | Percentage | Category |
|----------------|---------|--------------|-----------|
| 1 | Quality | 90% | Excellent |
| 2 | Teknis | 93.33% | Excellent |
| Average | | 91.67% (92%) | Excellent |

Based on the table above, the average score from the material experts was 92%, which falls into the "Excellent" category.

The validation results of the interactive learning multimedia based on Articulate Storyline 3 for English subject material were obtained from the total score assessments by all validators. These scores were then converted into percentages and analyzed based on predetermined evaluation aspects. According to the data, the average score given by the media expert was 90%, categorized as Excellent. The evaluation expert (test material expert) provided a score of 92%, also in the Excellent category, while the subject matter expert assigned a score of 88%, likewise falling under the Excellent category. Thus, the overall average from all three validators was 90%, indicating that the interactive learning multimedia based on Articulate Storyline 3 is highly valid and suitable for use in English language learning.

In addition to validity testing, a practicality test was also conducted through student responses to the use of the developed multimedia.

Table 4. Students' Responses

| No. | Aspects | Percentage | Category |
|-----|----------------------------|------------|-----------|
| 1 | Ease of Use and Navigation | 92 % | Excellent |

| | | | |
|----------------|----------------------------|-------|-----------|
| 2 | Clarity of Presentation | 93 % | Excellent |
| 3 | Aesthetic or Visual Appeal | 96 % | Excellent |
| 4 | Instructional Quality | 100 % | Excellent |
| Average | | 95% | Excellent |

The results showed that the student response rate reached 95%, which falls into the Excellent category. This indicates that the developed media is not only valid but also highly practical and user-friendly for students.

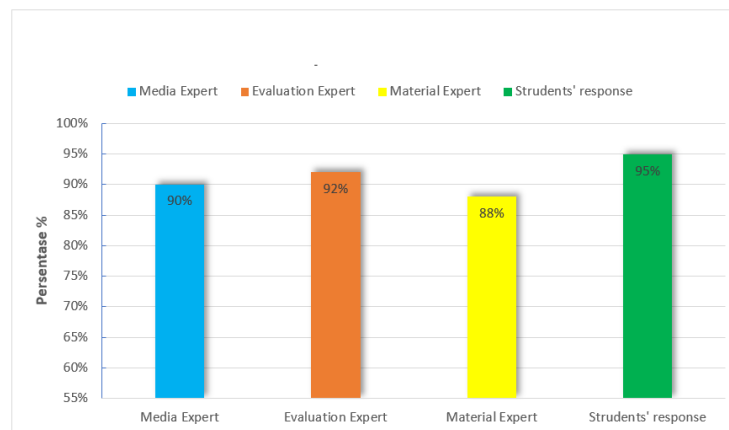


Figure 2. Expert Validation and Students' Response Chart

Descriptively, the interactive learning multimedia developed using Articulate Storyline 3 features an attractive user interface, ease of use, and is easily understood by students. It makes the English learning process more enjoyable and interactive, helping students to better understand the material, particularly in terms of vocabulary and meaning comprehension. The content presented is aligned with the core competencies and designed with visual and auditory elements that cater to students' learning styles. The use of interactive elements such as navigation buttons, animations, and background music further enhances the learning experience, making it more engaging and reducing boredom.

Besides conducting validity testing, practicality was examined through the assessment of students' interest improvement using the gain score method.

Table 5. Students' Interest

| No. | Name | Pre-questionnaire | Pre-questionnaire | N-Gain (%) |
|-----|----------------------|-------------------|-------------------|------------|
| 1. | Aditiya Saputra | 74 | 90 | 0,62 |
| 2. | Ahmad Suhada | 74 | 92 | 0,69 |
| 3. | Aldo Ega Pratama | 79 | 95 | 0,76 |
| 4. | Andrian Saputra | 64 | 96 | 0,89 |
| 5. | Anggi Alfiansyah | 65 | 93 | 0,80 |
| 6. | Ayu Dia Resmika | 80 | 96 | 0,80 |
| 7. | Dahlia Saputri | 65 | 95 | 0,86 |
| 8. | Ela Yuningsih | 77 | 95 | 0,78 |
| 9. | Kaspinang | 74 | 94 | 0,77 |
| 10. | Mardiana | 71 | 93 | 0,76 |
| 11. | Muhammad Imam Sape'i | 78 | 95 | 0,77 |

| No. | Name | Pre-questionnaire | Pre-questionnaire | N-Gain (%) |
|-----|--------------------|-------------------|-------------------|------------|
| 12. | Sony Bahar Pratama | 86 | 96 | 0,71 |
| | Total | 887 | 1130 | |
| | Average | 73,92 | 94,17 | 0,77 |
| | Min | | | 0,62 |
| | Max | | | 0,89 |

Based on the results of the N-gain score calculation, the minimum N-gain score obtained was 0.62 and the maximum was 0.89, with an average N-gain score of 0.77 or 77%, which falls into the high category.

Based on the results of the research conducted, it was found that the interactive learning multimedia based on Articulate Storyline 3, developed to enhance students' interest in learning English, was declared feasible, practical, and effective. Validation results from experts indicated that this learning media received excellent ratings in various aspects. Validation by media experts scored 90%, evaluation experts scored 92%, and material experts scored 88%. These results demonstrate that the developed multimedia product has met the eligibility criteria in terms of appearance, content completeness, and evaluation instrument quality, making it suitable for use in the learning process.

Furthermore, the practicality test measured through student response questionnaires showed a score of 95%, which falls into the "very practical" category. This result indicates that the media is easy for students to use, successfully captures their attention, and supports the process of understanding learning materials both independently and with teacher guidance.

Meanwhile, the effectiveness test results, measured by students' learning interest before and after using the media, showed an N-Gain score of 77%, classified as "high." This means that the use of this interactive multimedia has proven to significantly increase students' interest in learning English.

These results are supported by findings from several relevant previous studies. Research by Jarweni et al., (2024) stated that interactive multimedia based on Articulate Storyline 3 was effective in improving learning outcomes in the subject of Basic Electronics Techniques at SMKN 3 Surabaya. This finding aligns with the media validation results in this study, which also reached the "Very Good" category (90%), affirming that Articulate Storyline 3 is suitable as an interactive learning tool in various subjects.

Additionally, the research by Ramadhana et al., (2024) showing that this multimedia is valid and practical for both online and offline learning also supports the practicality results of this study, which reached 95%. This proves that the media developed in this study is not only appropriate in terms of content and appearance but also practical and user-friendly for students.

Similar results were also found by Budiarto et al. (2022), who stated that media based on Articulate Storyline 3 effectively increased students' motivation and academic achievement in science subjects. This study found an effectiveness rate of 77% in enhancing students' learning interest, which in purpose and function is very relevant to the findings of Fariz Budiarto and Akhmad Jazuli, despite being applied to a different subject.

Furthermore, the results of this study are reinforced by the findings of Monalisa et al. (2023), who stated that interactive media based on Articulate Storyline 3 effectively improved students' understanding and learning outcomes. These results prove that the use of interactive media is beneficial not only in the cognitive domain but also in the affective aspect, such as learning interest, as revealed in this study.

Based on the overall results from the validation tests, practicality assessments, and supporting findings from previous studies, it can be concluded that the interactive learning multimedia based on Articulate Storyline 3 is not only feasible and practical but also effective in increasing students' learning interest in various subjects, including English.

Dissemination

After the Interactive Learning Multimedia Based on Articulate Storyline 3 was declared valid and practical through expert validation and practicality testing by students, the next stage in the 4D development model was dissemination.

The dissemination stage in this study was carried out online by distributing the learning media to another school, namely SMPN 22 Mesuji, with Ms. Siyamini, S.Pd. as the teacher responsible for its implementation. This dissemination aimed to observe the effectiveness of using the Interactive Learning Multimedia Based on Articulate Storyline 3 in a different learning environment, as well as to evaluate its acceptability and impact on students' interest in learning.

CONCLUSION

This development research produced an interactive learning multimedia product based on Articulate Storyline 3, designed to increase students' interest in learning English. The product underwent validation by three experts: a Media Expert, an Evaluation Expert, and a Content Expert. Validation results showed strong ratings, with scores of 90%, 92%, and 88% respectively, all categorized as very strong. Additionally, a practicality test was conducted with 12 eighth-grade students at SMPN Satu Atap 01 Simpang Pematang, where student responses indicated a 95% practicality rating, also categorized as very practical.

The effectiveness test results, measured by students' learning interest before and after using the media, showed an N-Gain score of 77%, classified as "high." This means that the use of this interactive multimedia has proven to significantly increase students' interest in learning English. Based on these findings, the interactive multimedia meets both validity and practicality criteria, making it suitable for use as an alternative English learning media for eighth-grade students at SMPN Satu Atap 01 Simpang Pematang. Furthermore, this product has been shared with SMPN 22 Mesuji to serve as an additional resource that teachers and students can utilize to enhance English learning.

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