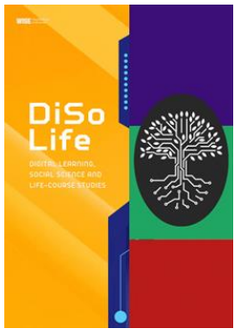

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Research Article

Developing Character-Based Animated Learning Media Using Animaker: A Case Study in Indonesian Junior High School Social Studies

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Abstract

This study aims to develop and evaluate character-based learning media using the Animaker application for grade VII students at Junior High School (SMP) of Natar. The development of engaging and effective learning media is essential for improving student engagement and understanding, particularly in subjects like social studies, where complex concepts such as Social Interaction can be difficult for students to grasp. The study employed a Research and Development (R&D) approach, following the ADDIE model, which consists of five stages: research and data collection, product design, product development, product trials, and product revisions. The product developed is an animated video that integrates Social Interaction material with Islamic values, intended to support social studies education. The study's evaluation process involved expert validation of the learning media and material. The media validation received a score of 90%, and the material validation achieved a perfect score of 100%, both categorized as "Very Strong." In addition, a student trial was conducted with 31 grade VII students, who showed positive responses and high engagement with the learning media. The effectiveness of the media was further confirmed through pre- and post-test assessments, demonstrating improved student understanding of the material. The results indicate that the Animaker-based learning media is valid, practical, and effective for enhancing student engagement and comprehension of social studies topics. This study contributes to the development of innovative educational tools that integrate multimedia to support active learning in the classroom.

Keywords: Animaker; Learning Media; Social Studies; Social Interaction; Educational Technology; ADDIE Model; Student Engagement.

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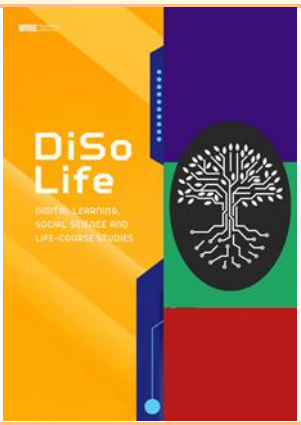

INTRODUCTION

Education is a critical foundation for the development of individuals and societies, enabling students to acquire essential skills for personal growth, social participation, and economic contribution [1], [2], [3]. As the world embraces rapid technological advancements, educational systems must continually evolve to integrate these innovations, aiming to enhance learning outcomes and meet global standards [4], [5]. The integration of digital tools and instructional media in education has been shown to foster deeper engagement and improve student retention of complex material [6], [7], [8]. However, many schools still rely heavily on traditional teaching methods, such as lectures and textbooks, which can limit student engagement, particularly in subjects that require the application of abstract concepts, such as social studies [9], [10], [11].

At Junior High School (SMP) of Natar, the teaching of social studies, particularly topics such as Social Interaction, faces significant challenges. Despite having access to infrastructure like projectors and LCD screens, technology in the classroom remains underutilized. Teachers continue to rely primarily on textbooks, traditional lectures, and conventional teaching tools, which often result in low student engagement and difficulty in understanding key concepts. This lack of engaging teaching tools significantly impacts student motivation, leading to poor learning outcomes, as evidenced by the low completion rates in social studies at SMP Negeri 2 Natar.

One potential solution to this issue is the integration of multimedia learning tools, specifically animated videos. Research has demonstrated that animated media can effectively engage students, enhance their comprehension of complex topics, and increase their motivation to learn [12], [13], [14]. The use of animated videos, particularly through accessible platforms like Animaker, allows for dynamic and interactive content that can improve student engagement while making challenging subjects more accessible. However, despite the proven effectiveness of multimedia tools, many schools, including SMP Negeri 2 Natar, have yet to fully integrate such resources into their teaching practices.

Previous studies have highlighted the positive impact of multimedia tools on student learning. Commodari et al. [15] and Castro-Alonso et al. [16] found that students tend to retain information better when it is presented through both visual and verbal means, especially for complex or abstract subjects. Furthermore, the use of animated videos has been shown to improve student motivation and facilitate learning in traditionally difficult subjects [17], [18], [19]. Despite these findings, there remains a lack of research focusing on the application of animated videos in social studies classrooms, particularly at the junior high school level in Indonesia.

This study aims to develop and evaluate an animated video learning media using the Animaker application to teach Social Interaction material in social studies for class VII students at Junior High School of Natar. The study will follow the ADDIE instructional design model to ensure a systematic development and evaluation process, with the goal of creating an engaging and effective learning tool that improves student engagement and learning outcomes. The novelty of this research lies in the development of an animated learning resource tailored to social studies content in Indonesia, using animation to teach complex social principles in a way that is engaging and accessible for students. By addressing the gap in multimedia use for social studies education at the junior high school level, this study contributes to the growing body of knowledge on multimedia learning and its impact on educational practices.

METHODS

This study adopts a R&D approach aimed at creating and validating a learning media product. The goal is to develop an animated video using the Animaker application as a social studies learning tool for students. R&D is selected because it allows for the development of practical educational products, which can be tested for their effectiveness and feasibility in real classroom settings. The study follows the ADDIE model, which includes five stages: Analysis, Design, Development, Implementation, and Evaluation. In the Analysis phase, the needs of the target audience and the learning objectives are identified. During the Design and Development phases, the learning media is created, focusing on integrating animated content that aligns with social studies topics and Islamic values. The Implementation phase involves testing the product with students, while the Evaluation phase assesses its effectiveness, based on expert feedback and student performance. The developed product will be tested for validity and practicality through expert evaluations and small-scale student trials, ensuring it is suitable for use in social studies classrooms.

Research Design

The research design used is a product trial design. Product trials are carried out to determine the feasibility of the product that has been produced. Products that have been declared valid mean that they are suitable for use as learning media. Product assessments are carried out by media, material experts, religious experts and then revised to produce the final product of the animaker learning media.

Trial Design

Trial design is the most important part in the development process so that the resulting product is suitable for use. At this stage, the animaker learning media will be evaluated in several stages so that the resulting video is truly valid. The stages that will be carried out are as follows: a) Validation by media experts, material experts; b) Product revision according to input from media experts, material experts; c) Small-scale field trials consisting of 5 students, large-scale trials consisting of 31 students for practicality tests.

Trial Subjects

The trial subjects in this study were divided into field trials for class VII.F students of SMP Negeri 2 Natar, the first trial on a small scale, namely 5 students, then a large-scale trial was carried out with a total of 31 students in one class. SMP Negeri 2 Natar was chosen as the trial site because it was based on observations that had been made.

Population and Sample

The population and sample taken by the researcher were Social Sciences (IPS) subject teachers and 31 students in class VII.F of SMP Negeri 2 Natar.

Data Collection Procedures

Data were collected through a combination of interviews, tests, documentation, and questionnaires. Interviews were conducted with both the subject teacher and students to gather insights into the learning media used during the lesson. The teacher was asked about the media typically employed in social studies instruction, while students were asked for their feedback on both the teacher's usual methods and the newly developed animated learning media. Additionally, pre-tests and post-tests were administered to measure students' understanding and engagement with the content before

and after the use of the animated video. These tests included a variety of questions and tasks designed to assess student behavior and learning outcomes. Documentation, including photos and videos, was gathered during observations at SMP Negeri 2 Natar, capturing the learning environment and the implementation of the media. Furthermore, questionnaires were distributed to assess the feasibility and relevance of the developed learning media. These included validation sheets for the media and the content, as well as student response questionnaires, which were completed by 31 students from class VII.F. The questionnaires helped evaluate the students' engagement and perceptions of the learning media.

Data Analytics on X

Data analysis technique is the processing of data that has been obtained by researchers when conducting product trials. Data analysis includes all activities of clarifying, analyzing, using and drawing conclusions from all data that has been collected. The data analysis technique used in this study is the Likert scale from Koo and Yang [20] to measure the attitudes, opinions and perceptions of a person or group of people.

Table 1. Alternative Answer Scores for Questionnaires

No.	Symbol	Information	Score
1	SA	Strongly Agree	5
2	A	Agree	4
3	N	Neutral	3
4	DA	Don't Agree	2
5	SD	Strongly Disagree	1

Next, the researcher calculated the questionnaire that had been distributed to the respondents to determine the level of validity and practicality of a product that had been developed. The formula used in calculating the level of validity and practicality of the product is:

Valid or Feasible

A feasibility test in a developed learning media product is very necessary to determine the validity or feasibility of the product that has been tested on experts and students. According to Riduan and Akdon, in finding the percentage figure, the variable is calculated using the following formula:

$$Presentase = \frac{\sum Score\ given\ by\ the\ validator}{\sum Maksimum\ score} \text{ x } 100\%$$

After the results are obtained, they are then consulted with the score interpretation criteria to determine the feasibility of the product being developed. To determine the feasibility, see the table below.

Table 2. Product Assessment Quality Assessment Criteria

Category	Evaluation (100%)
Very Weak	0% - 20%
Weak	21% - 40%
Enough	41% - 60%
Strong	61% - 80%
Very Strong	81% - 100%

If the results obtained are 60% - 100% then the learning media product is said to be valid and can be tested, the data obtained is analyzed and then used to revise the product.

Practical

According to Riduan and Akdon in finding the percentage number of variables is calculated using the following formula:

$$Presentase = \frac{\sum Score\ given\ by\ the\ validator}{\sum Maksimum\ score} \text{ x } 100\%$$

Table 3. Criteria for Practical Assessment Of a Product

Category	Evaluation (100%)
Very Weak	0% - 20%
Weak	21% - 40%
Enough	41% - 60%
Strong	61% - 80%
Very Strong	81% - 100%

Source: Riduan and Akdon

If the results obtained are 60% - 100%, then the learning media product is said to be practical and can be used on condition that the animaker learning media product is revised. Product revision is used to make the product even better.

Effectiveness Test

Testing the effectiveness of animated learning media videos using animaker uses learning test questions. To determine students' learning abilities, students answer learning test questions. Student learning test questions are given after students have followed the learning process with animated video learning media using the animaker application.

RESULT AND DISCUSSIONS

This study employed the ADDIE model within a R&D framework to produce a character-based learning media in the form of an animated video on the topic of Social Interaction, targeting grade VII students at SMP Negeri 2 Natar. The following sections present the findings from each phase of the ADDIE model, followed by a critical discussion of their implications.

Analysis of Needs

At this stage, the researcher conducted a field study to identify existing problems related to the instructional media used in the classroom. The needs analysis revealed that the predominant learning resource in use was printed textbooks, with minimal integration of digital learning tools. Notably, available school facilities such as LCD projectors remained largely underutilized, and the use of animated learning videos was virtually absent from teaching practices.

An interview was conducted with Mrs. Fatimah, a social studies teacher at SMP Negeri 2 Natar, to further explore these issues. She observed that students in grade VII displayed low enthusiasm and engagement when learning was solely based on textbooks, often resulting in boredom and lack of motivation. She emphasized that the use of visual media, such as LCD projectors, could significantly enhance student attention and interest during the learning process.

Based on these findings, it is evident that the integration of interactive and visually engaging media is crucial in enhancing the learning experience for grade VII students in social studies.

Learning media that incorporate clear explanations and illustrative examples particularly those utilizing animation can address the limitations of conventional methods. Consequently, the researcher selected the topic of social interaction for the development of an animated learning video using the Animaker application, given its capacity to deliver visually enriched content aligned with the curriculum.

Design

Storyboard

A storyboard or storyboard is a sketch that is arranged based on the sequence of the story script if in this case, the storyboard is a picture on a page in a learning media. The following is a table of storyboard learning media that will be developed:

Table 4. Storyboard

No		Design
1.	Slide 1 Opening Videos	
2.	Slide 2 Understanding social Interaction	
3.	Slide 3 Examples of social Interactions at school	
4.	Slide 4 Examples of social Interactions at home	

No		Design
5.	Slide 5 How important social interaction	
6.	Slide 6 Examples of dissociative Social interactions	
7.	Slide 7 Factors that influence social interactions	
8.	Slide 8 Conclusion	
9.	Slide 9 Closing	

Material Preparation

The material selected in this study is Social Interaction which is adjusted to the syllabus and learning objectives based on the national curriculum standards (K13). Furthermore, the researcher collected grade VII books and multiple choice evaluation questions.

Determining Examples of Material

Finding examples of images that match the examples of material that will be included in the animaker.

Designing Media

The design is in the form of animation, elements, images, transitions, music, audio, material explanations along with examples related to character values. The material explanation section is given images and animations to make the media display more attractive. In the learning video there are musical instruments in each material as backsound. The closing section contains words of thanks and greetings.

Instrument Preparation

At the design stage, the researcher also created an instrument used, namely a validation questionnaire where each statement made has an assessment weight that states whether a product is feasible or not. In addition to creating a product design, the researcher also determines experts to assess the feasibility of the product before it is tested on students. First, determine the media expert, namely Ayyesa Fayola, M.Pd. Second, the material expert, namely Mr. Karsiwan, M.Pd. Third, the animaker learning media in increasing interest in learning will be tested on students in class VII 7F at SMP Negeri 2 Natar.

Development

The development stage at this stage the researcher makes animaker learning media in increasing interest in learning such as making backgrounds, compiling social interaction materials, looking for examples of materials and supporting aspects such as images related to the material, connecting examples of materials with character values. The media that has been completed is then validated by validators including media experts, namely Ayysha Dara Fayola, M.Pd, material experts, namely Karsiwan, M.Pd. Furthermore, a trial was carried out on students in class VII 7F at SMP Negeri 2 Natar to determine the practicality of the product.

Implementation

The activity at this implementation stage is to conduct a trial of the revised product on students. This product trial was carried out in class VII.F SMP Negeri 2 Natar which consisted of 31 students. This activity is carried out to find out whether the product developed by the researcher has been effectively used in learning activities.

Evaluation

The evaluation stage is carried out with the aim of validating the learning media product that has been developed through expert testing and product testing. At each stage of the development of this learning media, there are evaluations and revisions carried out to improve the resulting product.

Discussion

The development and validation of character-based learning media using the Animaker application present compelling evidence of its feasibility, practicality, and moderate effectiveness in enhancing student understanding of social interaction concepts in social studies. The validation phase conducted through expert assessments confirmed the content and visual quality of the media, yielding scores of 100% and 90% from media and material experts, respectively. These results

affirm the alignment of the product with pedagogical and technical standards for instructional media in junior secondary education.

The subsequent empirical trials further substantiated the media's efficacy. Both small-scale (n=5) and large-scale (n=31) classroom implementations showed consistent learning gains, with N-Gain scores of 0.623 in each case, categorized as "moderate." This outcome is significant given that the target content social interaction is often perceived as abstract and difficult to grasp through traditional text-based instruction. Furthermore, students rated the media highly in terms of engagement and perceived usefulness, with an overall practicality score of 86%, indicating strong acceptability.

These findings are consistent with previous research highlighting the pedagogical value of animated and multimedia-based learning. Mayer's Cognitive Theory of Multimedia Learning [21] posits that learning is enhanced when verbal and visual channels are activated simultaneously, allowing students to process and retain complex information more effectively. Similarly, studies by Abdularhman [22] and Farrokhnia et al. [23] found that animation significantly improves learning outcomes in subjects requiring the visualization of abstract processes, such as scientific and social phenomena. In the Indonesian context, Zuo et al. [24] also emphasized that digital video learning increases student motivation and contextual understanding, especially when designed with local cultural relevance.

The novelty of this study lies in its dual integration of character education values and Islamic perspectives into animated learning media specifically designed for junior high school social studies. While numerous studies have investigated multimedia learning in science or language subjects, very few have explored the potential of animation in civic and moral education domains especially through localized digital platforms such as Animaker. Moreover, this study addresses a unique gap in the literature by combining national curriculum standards, Islamic values, and technological tools to support student-centered learning in public school settings.

The implications of this research are both theoretical and practical. Theoretically, the study contributes to the growing body of literature on value-based digital pedagogy, expanding the scope of multimedia learning beyond cognitive acquisition to include affective and moral dimensions. Practically, the study provides a replicable model for integrating animation in other areas of social science education, especially in under-resourced schools where digital infrastructure exists but remains underutilized. Teachers can adopt similar development approaches using free or low-cost tools such as Animaker to create contextually relevant instructional content that aligns with both national education goals and local cultural-religious values.

In light of these findings, the implementation of animated learning media in social studies classrooms should be considered a strategic instructional intervention. Future studies may extend this research by incorporating interactive features (e.g., embedded quizzes, branching scenarios), conducting longitudinal studies to assess retention over time, or comparing the efficacy of different animation platforms across diverse cultural and educational contexts. Integrating such digital innovation holds significant potential for transforming passive learning into an active, values-driven, and technologically empowered experience.

CONCLUSION

This study developed and validated a character-based learning video using the Animaker application to support the teaching of Social Interaction in grade VII social studies at SMP Negeri

2 Natar. Employing the ADDIE model within a research and development framework, the study demonstrated that the animated learning media was not only feasible and practical based on expert validation scores of 90% and 100% but also effective, as evidenced by moderate learning gains (N-Gain = 0.623) observed in both small and large-scale trials. The positive student response further underscored the media's capacity to enhance engagement and comprehension. The novelty of this study lies in its integration of Islamic character values within digitally animated content tailored to abstract social science topics, which remains underexplored in prior educational media research. By leveraging the Animaker platform, the study offers a model for localized, value-infused, and technology-enhanced instruction that aligns with national curriculum goals. This research contributes theoretically to the field of multimedia learning by extending its application into affective and moral domains, and practically by providing an adaptable framework for teachers to develop culturally relevant digital learning tools. Future research should explore the scalability of such media across different subjects and student populations, examine long-term learning retention, and assess comparative effectiveness against other instructional approaches. Overall, this study affirms that well-designed animated learning media can serve as a powerful pedagogical innovation in 21st-century education.

LIMITATIONS

This study has several limitations that should be considered when interpreting the findings. First, the sample size was relatively small, consisting of only one class of grade VII students from SMP of Natar, which limits the generalizability of the results to other schools or educational contexts. Additionally, the study focused on a single subject area, namely social studies, and specifically on the topic of Social Interaction, which may not fully reflect the effectiveness of the learning media across other subjects or grade levels. Another limitation is the reliance on self-reported data from student questionnaires and feedback, which may be subject to response bias. While the feedback provided valuable insights into student engagement and perception, it may not entirely capture the broader impact of the learning media on long-term academic performance or other factors influencing student learning. Furthermore, the study did not include a comparison with other types of learning media or teaching methods, which could provide a more comprehensive understanding of the relative effectiveness of the Animaker-based media. Lastly, the evaluation of the learning media was conducted in a controlled classroom environment, which may not reflect the diverse conditions of various schools with differing resources and teaching methods. Future studies could explore the use of this learning media in larger, more diverse settings and over a longer period to assess its sustained impact on student learning.

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AUTHOR CONTRIBUTION

A.F. was responsible for the conceptualization, methodology, software development, validation, formal analysis, investigation, data curation, writing the original draft, writing the review and editing, visualization, and project administration. A.P. contributed to the methodology, formal analysis, writing the review and editing, and supervision of the study.

CONFLICT OF INTEREST

The authors declare no conflict of interest.

DECLARATION OF USE OF AI IN SCIENTIFIC WRITING

The authors used several generative AI tools in the process. ChatGPT was used to help organise complex concepts, while Grammarly was employed to enhance the grammar, style, readability of the text and improve the overall clarity of the writing. Although these tools provided valuable support, the researcher wrote all the content and conclusions.

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