Research Paper

Articulate Storyline-Based E-Module to Improve Social Studies Learning Outcomes for Class V Elementary School

Anastasia Anindia Septiana S[1], Hamdan Tri Atmaja[2], Nuni Widiarti[3]

[1,2,3]Department of Basic Education, Universitas Negeri Semarang, Semarang, Indonesia.

Corresponding Author: Anastasia Anindia Septiana S

ABSTRACT

The Problems at SDN Sukorejo 02 regarding the need for more utilization of technology-based teaching materials and learning outcomes are less than optimal in social studies learning. The formulation of the problem in this research is how to develop, validate and improve student learning outcomes after using e-module teaching materials based on Articulate Storyline materials on human interaction with the environment. This development research aims to develop instructional media and determine the feasibility and effectiveness of e-module media based on articulate storylines. This research was conducted using the research model R & D (Research and Development) in Sugiono, which includes ten stages, namely: (1) potential and problems; (2) data collection; (3) product design; (4) design validation; (5) design revisions; (6) product testing (7) product version; (8) trial use; (9) product revisions; (10) produce products. The research objective was to determine the results of the development and effectiveness of the articulate storyline-based module. The results of this study indicate that e-module teaching materials based on articulate storylines are teaching materials that can be used in human-environment interaction material in Social Studies class V SD. E-module teaching materials based on articulate storylines were developed by looking at the feasibility assessment by material, media and language experts in very feasible criteria. The percentage of material eligibility is 95% with possible standards, the rate of media eligibility is 94% with very achievable criteria, and the portion of language eligibility is 93% with very feasible measures. They increased student learning outcomes by 16.9%. At the same time, the results of the n-gain test on the pretest-posttest obtained an average difference in learning outcomes of 0.4922 in the medium criteria. Thus, e-module teaching materials based on articulate storylines can be used as supporting teaching materials in learning to improve student learning outcomes. The following research is expected to produce more compatible media with each device and improve students' affective and psychomotor skills.

Keywords: Social, Contextual learning, E-module, Articulate Storyline.

INTRODUCTION

In its process, IPS learning is often taught rotely, making students feel bored and less active in education (Simangunsong, 2015). IPS learning should be packaged more interestingly and fun by providing knowledge that can be applied in everyday life because the material in IPS learning can be taken not far from reality in real life.

An effective learning process is supported by using models, strategies, methods, media and teaching materials to facilitate student learning. Educators need to combine learning models using engaging learning media. The principles of effectiveness and

efficiency in the process of delivering learning material need to be held by every teacher (Triyanto, 2023). Especially at this time, teachers are required to have the skills to present technology-based learning. Educational research written by (Azhariadi et al., 2019) Technological changes affect how teachers manage learning; teachers are required to provide technology-based learning. The demands of the 4.0 industrial revolution era for teachers in the world of teacher education are encouraged to develop skills in mastering technology in order to be able to design innovative and technology-based learning (Nurdyansyah & Fahyuni, 2016). As agents of change, teachers can change students' thinking about teaching and learning activities by providing exciting lessons and motivating them to enjoy learning (Karamina et al., 2020).

Teaching materials that can be used by teachers in thematic learning are thematic e-modules or what can be called (thematic electronic modules). E-Modules are digital-based, non-print teaching material products independently designed to be studied by students (Putra et al., 2022). E-Modules are also called media for self-study because they are equipped with instructions for self-study. E-modules facilitate students in learning both independently and conventionally. The e-module teaching materials are equipped with instructions for independent study so students can learn according to their abilities. Modules are tools or facilities that can be used as learning materials that contain material, methods, limitations, and ways of evaluating that are designed systematically and attractively to achieve the expected goals and competencies according to the level of complexity (Suwartaya et al., 2020). Based on the results of field observations and analysis carried out in one cluster, namely in three schools, SDN Sukorejo 01, SDN Sukorejo 02 and SDN Sukorejo 03 Semarang. Information was obtained from one cluster that teachers had yet to use innovative teaching materials; they were still using thematic books and limited worksheets. Teachers still use teaching materials for teaching modules made by the teacher, guided by the teacher's book and student book. Where do they need to develop teaching materials that can support the achievement of learning objectives? The use of limited teaching materials makes students less enthusiastic and bored in learning, so students need help understanding the material and have an impact on learning outcomes that are less than optimal. This is because using learning media for teaching materials still needs to be improved, especially in social studies learning.

The research will be conducted at SDN Sukorejo 02 as the research location. The impact of using less than optimal teaching materials can be seen from the daily test scores of 28 students in class V SDN Sukorejo 02, where 15 students (54%) did not reach the KKM, and 13 students (46%) achieved the KKM. In an interview with the class V teacher, Mr Wahyu said that the teacher needed help presenting technology-based learning materials, which impacted the less optimal quality of learning in class.

The right solution to this problem is contextual learning which can strengthen students' understanding and make learning more meaningful by connecting it with the realities of everyday life (Zulham & Sulisworo, 2017). The application of contextual learning in social studies subjects can be supported by using technology-based teaching materials, making it easier for students to understand the material so that learning is more effective. So, teaching materials in e-modules based on articulate storylines were developed to improve social studies learning outcomes for fifth-grade students at SDN Sukorejo 02 Semarang.

Based on previous research in 2017 concerning the Effect of the e-Jas edutainment Module on the character of caring for the environment and responsibility. The results of this study indicate that the E-JAS edutainment module can help students to learn individually and reduce the teacher's role, which results in

students being more active (Wanabuliandari & Ardianti, 2018). Based on this research, the e-module positively impacts the cultivation of caring and responsible characters and student learning outcomes.

The Previous research regarding the effect of interactive learning media, based on articulate storylines on learning motivation and student learning outcomes in the Hindu-Buddhist kingdom in Indonesia. Using articulate storylines makes it easier for teachers to create technology-based media to create innovative learning (Setyaningsih et al., 2020). The articulate storyline is a software that combines animated images, sound, video and text into one content. This software can later be accessed via various devices, namely laptops, computers and gadgets, because it is web-based. According to Dewi et al. (2019), students can take advantage of learning via their cell phones to obtain learning resources and multimedia learning materials and improve their communication with teachers to get new learning experiences.

As for the benefits of this study, namely, to improve the quality of social studies learning so that students can understand the material presented, this study aimed to develop instructional media, determine the feasibility and effectiveness of e-module media based on articulate storylines and encourage students to be more active and creative in classroom learning. Teachers can develop interactive teaching materials based on articulate storyline applications to make learning more innovative and exciting.

MATERIALS & METHODS

This study uses a Research and Development (R&D) development research design in collaboration with the mixed method model. According to Sugiyono (2105: 407), development research is a method used to produce specific products and test the effectiveness of these products.

This research was conducted using the deep development model (Sugiyono, 2014), which includes ten stages, namely: (1) potential and problems; (2) data collection; (3) product design; (4) design validation; (5) design revisions; (6) product testing (7) product version; (8) trial use; (9) product revisions; (10) produce products.

The collection of research data regarding the development of e-module teaching materials was carried out by direct interviews with class V teachers at SDN Sukorejo 02 Semarang. Based on statements from teachers and students in social studies learning, especially the Human-Environment Interaction material, they have yet to use innovative and technology-based teaching materials. The needs interview was given to teachers and students based on the data obtained. The results of the interviews stated that teaching materials in the Human-Environment Interaction material only used pictures from student books, so according to students, learning was less attractive. Students stated that the use of video or animated images was more enjoyable and felt interested in learning. Likewise, the teacher wants the developed learning materials to have an attractive appearance so that students can focus on learning and the quality of learning is better with a high student understanding of the material. Teaching materials are better if they are coloured and have colours that attract students' attention. In addition, researchers also collected picture material and videos related to human interaction with the environment material used in the development of e-module teaching materials based on articulate storylines and research instruments such as assessment sheets and teacher and student response questionnaires.

RESULT AND DISCUSSION

Discussion

Development of Articulate Storyline-based E-module Teaching Materials

The product results follow the prototyping planning process. The media can be appropriately used during product development, but feasibility validation is still needed. The product produced by the researcher is an e-module design based on

Articulate Storyline, created using Articulate Storyline 3 software. Researchers use Canva to create animations and design products. However, before the product is used for media trials, the product must be validated by a Media Expert Lecturer.

The following is a general description of the e-module teaching material design based on the articulate storyline in Table 1.

Table 1 Design of Articulate Storyline-based E-Module Teaching Materials

No	Design	Information
1	Media	Articulate Storyline-based E-Module Teaching Materials in the form of applications and websites
2	Material	Human Interaction with the Environment
3	Language	Indonesia
4	Content	Introduction
		Introduction
		KD&KI
		Learning objectives
		Material
		Definition of Social Interaction
		Impact of Social Interaction
		Types of Social Interaction
		Forms of Social Interaction
		5Human interaction with the natural environment
		Human Interaction with the Economic Environment.
		Human interaction with the Social & Cultural environment
		Quiz
		Multiple choice questions 5 points in 10 minutes
		Information
		Bibliography
		Author Profile
5	function	Innovative teaching materials that utilize internet and android technology to facilitate understanding of material and attract students' attention to the material of human interaction with the environment. Improving learning outcomes in social studies class V students

The main components in making teaching materials based on multiple intelligences consist of Cover, introduction, part core, and Cover. This learning media contains solar system material adjusted to essential competencies, indicators, and learning objectives. For more details, the following media product designs developed by researchers are presented.
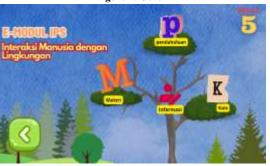

Figure 1. Cover

Figure 2. Entry Page

Figure 3. Menu

Figure 4. Learning Target

Figure 5. Matery

Figure 6. Quiz

Figure 7. Question

Figure 8. Author Information

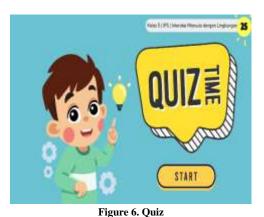Articulate Storyline-based e-module teaching materials, the final product of the research, have been validated and revised according to suggestions and input from experts, teachers, and students. The Articulate Storyline-based e-module teaching material has been tested. It is suitable for use as a support and support for social studies learning resources in class V SDN Sukorejo 02 at KD 3.2 Analyzing the forms of human interaction with the environment and their influence on the social, cultural and economic development of Indonesian society and KD 4.2 Presenting the results of an analysis of human interaction with the environment and its influence on the social, cultural and economic development of Indonesian society.

The results of the feasibility assessment of Articulate Storyline-based E-module Teaching Materials

The feasibility of e-module teaching materials based on articulate storylines is known by validity tests by material, media and language experts. The purpose of testing the validity of e-module teaching materials is to obtain a valid assessment that can be used in the learning process. In addition, to determine the suitability, weaknesses, and advantages of the media developed by researchers.

Expert validator of e-module teaching materials based on an articulate storyline Mr Galih Mahardika Christian Putra, S.Pd., M.Pd. as material expert Lecturer of Elementary School Teacher Education Department with basic IPS Education expert. Media expert and linguist Mr Fajar Awang Irawan, S.Sc., M.Pd., PhD, lecturer at the Department of Sports Science Education at UNNES with expertise in the Science of Sports Technology Development (IPTEKOR).

The design validator's assessment results will be included in the assessment category. The category that is not eligible is less than 54%, with a range of 60% to 75%, feasible with a range of values of 76% to 85%, and very feasible with a range of values of 86% to 100%. The following are the results of the assessment of each design validator.

Three aspects of the assessment in the material expert validator questionnaire are assessed, namely relevance to KI, KD, indicators, and learning objectives, the suitability of the material with the questions in the media, and the suitability of the images with the material. The feasibility assessment of the material obtained a score of 46 with a percentage of 95% classified in the very feasible criteria for use in learning. Suggestions and input from the validator pay more attention to media development with material development in elementary schools.

The media validator questionnaire has four aspects: the suitability of learning materials, learning materials use of media and media design. The media feasibility assessment obtained a score of 72 with a percentage of 94% belonging to feasible criteria for use in learning. Suggestions and input from validators to add moving animation and suggest that it can be accessed using an iOS device.

For the language validator questionnaire, four aspects of language are assessed, including using effective sentences, the sentence structure used is easy for students to understand, using short, concise and clear sentences and the language used according to the level of students' thinking and social-emotional development. The language feasibility assessment obtained a score of 56 with a percentage of 93% belonging to feasible criteria for use in learning.

Suggestions and input from the validator to pay more attention to some less effective sentence writing and use the standard language according to KBBI.

The Effectiveness of Articulate Storyline-based E-module Teaching Materials

Improving student learning outcomes is used to see the effectiveness of e-module teaching materials based on articulate storylines through the results of pretest and posttest scores and questionnaires for student and teacher responses on small- and large-scale trials.

The small group trial aims to evaluate the initial response and usefulness of the e-module teaching materials based on the articulate storyline when used in learning activities before the large group trial if the results of the small group trials show the success of learning by working on the pretest and posttest questions as many as 20 multiple choice questions. Each item represents each indicator of basic competence and core competence. Each item has been tested for validity, reliability, difficulty level and differential power of the questions. If there is an increase in student pretest and posttest results, product trials can be carried out in large groups. After going through validation and revision, the e-module teaching materials based on the articulate storyline of human-environment interaction material can be used in large-scale trials. The pretest and posttest results on large-scale trials will look for differences in learning outcomes before and after using e-module teaching materials. Learning effectiveness is tested using the Normality test, T-test, and N-Gain in Table 2.

Tabel 2. Research Data Analysis

Test	Result	Information
Normality	**Std.Deviation** = 6.766 Test Statistic = 0.129 Sig. 2 tailed = 0.176	**Sig > significant 0.05 then the data is normal** **0.176 > 0.05**
T-test	**Mean Pre Test = 57.6** Mean Post test = 74.5 Sig = 0.00	**Sig < significant 0.05 then there is a relationship to the increase in learning outcomes**
N-Gain Test	0,492 Efektivity 49.2250	**N gain is in the medium criteria, with the criteria of being quite effective.**

Data on large-scale test learning outcomes have been tested for normality and homogeneity, and the data is usually distributed and similar. Furthermore, the t-test determines the effectiveness of e-module teaching materials based on articulate storylines. The t-test results for the pretest and posttest values were 0.00, indicating that they were rejected because 0.00> 0.05. So that the results of the t-test after using e-module teaching materials based on an articulate storyline showed a difference in the average pretest and posttest scores, with an increase in student learning outcomes of 16.9%. At the same time, the results of the n-gain test on the pretest and posttest obtained an average difference in learning outcomes of 0.4922 in the medium criteria. For the estimation of effectiveness, it gets a score of 49.2250 on the criteria of being quite effective.

Previous research that supports using technology in learning activities may increase student interest by Raja, R., & Nagasubramani, P.C (2018). This is because transferring knowledge will become more accessible, convenient, and effective. Other research regarding learning media for elementary school children by Yalvema M et al. (2019). Explain the articulate storyline as an application with game features that can be used in learning. This media allows students to use their senses to learn and produce more meaningful learning.

CONCLUSION

E-module teaching material based on articulate storyline is a teaching material that can be used in human-environment interaction material in social studies class V SD. Developed with the stages of media development according to Sugiyono, namely (1) potential and problems; (2) data collection; (3) product design; (4) design validation; (5) design revisions; (6) product testing (7) product version; (8) trial use; (9) product revisions; (10) produce products.

E-module teaching materials based on articulate storylines were developed by looking at the feasibility assessment by material, media and language experts in very feasible criteria. The percentage of material eligibility is 95% with very feasible criteria, the percentage of media eligibility is 94% with very feasible criteria, and the percentage of language eligibility is 93% with very feasible criteria.

E-module teaching materials based on articulate storylines are effective for increasing social studies learning outcomes in human interaction with the environment; it can be seen from the t-test results on t count> t table, which is equal to 0.00> 0.05, so it is rejected. The results of the n-gain test on the pretest-posttest obtained an average difference in learning outcomes of 0.4922 in the medium criteria. Thus, there is an increase in learning outcomes before and after using e-module teaching materials based on articulate storylines.

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