Developing Articulate Storyline for Economic Learning Media to Improve Learning Outcomes at SMA Negeri 1 Deli Tua

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Abstract

This research aims to develop and implement an articulate storyline of economic learning media to improve economic learning outcomes for class XI students of SMA Negeri 1 Deli Tua. This research is development research (R&D) with the ADDIE method (Analyse, Design, Development, Implementation, and Evaluation) and conducted at SMA Negeri 1 Deli Tua. The population in this study were all students of class XI IPS as many as 175 students. The sample for the application of the developed media was 70 students of class XI IPS for the experimental and control classes, using the non-probability sampling technique. Based on the result the average learning outcomes of the experimental class were 88.00 and the control class 69.69. Obtaining independent t-test 9.623 > 1.9955 with sig. 0.00 < 0.05 indicates that there is a significant difference in the learning outcomes of the experimental class and the control class. So it can be concluded that the findings in this study are the Articulate Storyline economic learning media which was developed "Very Appropriate" and is effectively used to help students improve economic learning outcomes for class XI IPS SMA Negeri 1 Deli Tua. Based on the limitations of this study, the researcher suggests for further research should develope the Articulate Storyline media with wider material and samples.

Keywords: articulate storyline, developing media, learning outcomes, learning media

Pengembangan Media Pembelajaran Ekonomi Articulate Storyline Untuk Meningkatkan Hasil Belajar Siswa SMA Negeri 1 Deli Tua

Abstrak

Tujuan dari penelitian ini adalah untuk mengembangkan dan mengimplementasikan media pembelajaran ekonomi berbasis articulate storyline untuk meningkatkan hasil belajar ekonomi siswa. Penelitian ini merupakan penelitian pengembangan (R&D) dengan metode ADDIE (Analyse, Design, Development, Implementation, and Evaluation) dan dilakukan di SMA Negeri 1 Deli Tua. Populasi dalam penelitian ini seluruh siswa kelas XI IPS sebanyak 175 siswa dengan Sampel 70 siswa kelas XI IPS untuk kelas eksperimen dan kelas kontrol, dengan teknik nonprobability sampling. Berdasarkan hasil penelitian yang dilakukan maka hasil belajar kelas eksperimen adalah 88,00 dan kelas kontrol 69,69. Perolehan uji independent t-test 9,623 >1,9955 dengan sig. 0,00 < 0,05 menunjukkan bahwa terdapat perbedaan hasil belajar kelas eksperimen dan kelas kontrol secara signifikan. Sehingga dapat disimpulkan bahwa temuan dalam penelitian ini adalah media pembelajaran ekonomi Articulate Storyline yang dikembangkan "Sangat Layak" dan efektif digunakan untuk membantu siswa meningkatkan hasil belajar ekonomi kelas XI IPS SMA Negeri 1 Deli Tua. Berdasarkan keterbatasan yang ada, peneliti menyarakan untuk mengembangkan media Articulate Storyline dengan materi dan sampel yang lebih luas untuk penelitian selanjutnya.

Keywords: *articulate storyline, hasil belajar, media pembelajaran, pengembangan.*

INTRODUCTION

In the current era of globalization, education has a big role in shaping quality human resources (HR) so that they are competitive and can be globally competent. Thus, to keep up and compete with the rapid development of the times, every individual needs to have quality knowledge and skills. Then, quality knowledge and skills should be obtained through education that can help develop knowledge, skills, and shape a nation's identity (Pangestu & Wafa, 2018). In addition, education can also be considered as the embodiment of dynamic socio-cultural conditions and continues to develop following changes that exist from time to time. In line with science and technology that is experiencing rapid development in this era of globalization.

The efforts made by the government to improve the quality of education and learning are by completing facilities and infrastructure, improving the quality of teaching staff, and improving the curriculum (State Ministry of Research and Technology of the Republic of Indonesia 2006). However, these efforts cannot be achieved if there are no other mentoring efforts from the various parties involved. Teachers as the main actors in learning are required to improve their quality in delivering learning in the classroom, which can improve the quality of learning (Sindu et al. 2020) . Therefore, a teacher guides and has self-awareness to improve the learning process. In learning, many components have an important role to achieve learning objectives (Hasan et al., 2021). Learning objectives can be achieved if there is communication between the sender and recipient of the message. Where the entire learning process and stages are not just understanding the subject matter but must create a process of behavior change and development of student potential (Yaumi, 2018).

The presentation of the information in question can be in the form of developing and utilizing ICT-based learning media, both offline and online, which can be used as input for interested parties, especially educators. Thus, that technology and communication can make it easier for students to learn and obtain the necessary information anywhere, anytime, and from anyone (Pangestu & Wafa, 2018). Learning media has many benefits for teachers to convey messages to students. According to (Hasan et al., 2021), media as a means of communication both in print and audio-visual form that must be arranged and used as needed, can be seen, heard, and read as well as simplifying complex forms and concepts (Maharani 2015).

In the current situation, there are many variations of media software and computer hardware that can be used for learning in schools *, including Adobe Flash, Articulate Storyline, Foxit, notepad, macro media flash,* and *office tools 2010* (Bahri and Huda 2019), which states that learning using interactive learning media is better than learning without using interactive media. The same opinion was expressed by Rahmat and Arnawa (2019) in their research that the development of interactive media can increase learning effectiveness.

Preliminary observations made by researchers at SMA Negeri 1 Deli Tua by observing teacher learning in the classroom, showed the lack of use of facilities in the form of technology by teachers during economic learning in the classroom. It is also known from interviews with teachers that the learning support facilities at SMA Negeri 1 Deli Tua are adequate, including projectors and computer labs that can be used during the teaching and learning process. However, the use of these infrastructure facilities has not been optimal due to teachers' lack of innovation, skills, and creativity in utilizing and using the technologies that have been provided. The media that teachers often use is a very simple medium, such as using objects in the classroom and problems in the surrounding environment, then the teacher in the classroom only uses Microsoft PowerPoint software accompanied by a lecture method in front of the class and students write the material presented. After the teacher delivers the material, students will be given practice questions, where in the end students here are only required to listen and write

explanations from the teacher, which in the end the students do not develop their potential. Most of the students in the class have only a few active roles in the learning process, and there are still many less active students. So that in economic learning students are not directly involved in the learning process (Hadza et al., 2020). The content of economic material is quite a lot and the learning process is monotonous, which is one of the factors that cause students to feel bored in participating in learning so that the understanding of economic material is less than optimal as evidenced by the results of student economic learning. research that is still far from expected. Student learning outcomes are known through evaluation activities. Learning outcomes are obtained from the results of interactions during teaching and learning activities (Sumardi, 2019).

Innovative learning media based on technology can be created or programmed by teachers to provide convenience for students to improve learning processes and outcomes. According to Solihatin (2013) based on reality on the ground, teachers often overlook the medium of economic learning for various reasons. One of them is that teachers have difficulty in determining the right media, limited time to make designs, and the lack of cost to make media. In learning activities in general, teachers only use adequate methods of lectures anddiscussions and supporting media. The learning resources used by teachers are limited to the use of printed materials in the form of textbooks, so the learning resources for economics subjects are limited that can be used by students. This condition can result in students becoming inactive and lacking motivation in learning activities, ultimately affecting student learning outcomes not asexpected (Japar, 2018).

Researchers made preliminary observations by conducting observations and interviews of teachers and students of class XI social studies of SMA Negeri 1 Deli Tua. Based on the overall abolition of the daily tests of class XI social studies students, it was concluded that only 34% (60 people) obtained economic scores above KKM from 175 class XI social studies students. The results of the researcher's interview with students of Kelas XI IPS SMA Negeri 1 Deli Tua who were randomly selected numbered and willing to be interviewed as many as 15 people, based on the answers to the interview results summarized and compiled by student researchers argued that economic lessons were quite difficult and students complained about the methods and media used by teachers in the teaching and learning process in economic learning were very monotonous and boring, chargedah again with a high enough KKM level for economics lessons. The daily test results also show that many students still score below the minimum completion criteria (KKM).

This proves that the learning results obtained are far from expected. This is a challenge for teachers to create interesting and not boring learning. Fun learning can be created through the use of various methods and interactive learning media so that students can be more enthusiastic about learning and understand the material better. Judging from the results of preliminary observations made by researchers, researchers see the need to develop learning media in Economic learning used by teachers, because one way to create fun learning is to use learning media (Ramli, 2012).

The interview results show that the technology-based media teachers often use are ppt, LKS, and printed books. Accordingto the results of student interviews, the ppt given by the teacher is not interesting, and siswa tends to still not be able to understand the material well.

The lack of mastery and use of technology-based interactive media by teachers in the learning process, so researchers are interested in developing learning media in the form of multimedia animations that can be accessed anywhere by students. However, a learning medium can be said to be interactive if it is able to cause interaction with students. The animated video that has been made cannot be said to be an interactive learning medium because it only

takes one direction. Therefore, software is needed that can package animated videos into interactive learning media (Oktaviana et al. 2020) . One of the technologies used is the Articulate Storyline software, therefore researchers want to conduct research and development of articulate storyline economic learning media.

Researchers choose Articulate Storyline because the project's appearance in making media with this software is very easy to understand, even for those who are not proficient in the field of technology (Maharani, 2015). Articulate Storyline is in the form of multimedia software or tools that can be used to develop learning media with a combination of text, image, sound, animation, and video content as well as the preparation of assessments in the learning process (Amiroh, 2020). Articulate Storyline is an alternative application that can be used to make learning media interactive and interesting for students. In its operation, the developer or user first compiles the sequence of competencies to be achieved, materials, practice questions, evaluations, and media operation instructions in the form of story displays so that developers can operate or edit applications more easily. In addition, Articulate Storyline has a function as a presentation medium. Another advantage of this storyline articulate is that this software is based on simple smart brainware so that it is easier to apply (Pratama, 2019)

Many learning media take advantage of technological advances, with the same concept as the articulate storyline. As in research (Masykur R, Nofrizal N, 2014) which researched the development of mathematics learning media with Macromedia flash, and research by (Setyadi & Qohar, 2017) which developed web-based learning media, but it was found that learning media is less practical because learning media can only be accessed if connected to the internet.

So from that point of view, the articulate storyline has its advantages and disadvantages. Where the final result of articulate storyline can be published according to the user's wishes. The results of this application can be accessed online as well as offline because it is supported in HTML5 format and can be operated using a computer or smartphone. The results of this storyline articulate that media can be used by students as learning materials at any time and can be learned anywhere and anytime. This storyline articulate learning media is expected to motivate students to be more active in learning activities so that student learning outcomes will increase (Pangestu & Wafa, 2018). Further (Marlena et al. 2019) states that the subject matter created in the form of audio visual animation is easier to understand, interesting, and can stimulate critical thinking skills.

In line with opinion (Mumtahana, 2020) Articulate Storyline can help learn effectively and efficiently through the sense of hearing, and the sense of sight simultaneously. Furthermore (Sindu et al., 2020) explained that articulate storyline learning media is suitable for use. Articulate Storyline 3 media has a significant effect on students' cognitive abilities, cognitive ability improvement is quite effective, and student response categories are very positive. This is supported by an opinion (Nissa et al., 2021) which states that articulate Storyline media is very worthy of use in learning. In line with the opinions above are the research conducted (Fardila & Arief, 2021) and (Sadikin & Hardianti, 2021) that the use of storyline articulate learning media can significantly improve self-regulated learning and student learning outcomes.

A comparison of the findings made by previous researchers, in terms of the lack of previous storyline articulate learning media   , was developed by the researchers in this study. Research (Dewi, 2021) states that this software does have a quiz feature, but theexisting quiz f itur only displays results for users. So that teachers cannot know the results of the quiz directly, and it is not appropriate if it is used as a medium for remote evaluation. Another drawback based on research (Donnellan, 2021) is that in media structured with storyline articulates, it is less likely to be used to produce its own animation output and therefore should be used in conjunction with other tools or software. Weaknesses in the development of articulate storyline

media that have been carried out by previous researchers, became the basis of this study. Researchers will add other tools that have not been used by previous researchers and combine them with other software such as Google forms for evaluation and exercise media, image enrichment, animations, and interactive links so that the media to be developed is different and better than existing ones.

Departing from the background description and observations above, researchers are interested in developing articulate storyline software-assisted learning media in economics subjects as a solution to improve student learning outcomes in economics subjects. Therefore, the researcher conducted a study entitled "Development of Articulate Storyline Economic Learning Media to Improve Student Learning Outcomes in Economics Class XI Social Studies Subjects of SMA Negeri 1 Deli Tua".

METHOD

The methods used in this study are research and development methods. This research was conducted in the even semester of the 2021/2022 school year with an effective period of approximately 3 months at SMA Negeri 1 Deli Tua class XI IPS. Research and development or Research and Development (R&D) is a sufficient research strategy or method to improve practice. "Research and development (R&D) is a series of steps in order to develop a product or improve an existing product", (Salim, 2019). In this study, researchers developed a product in the form of economic learning media with *Articulate Storyline software* combined with other *tools*.

This research was conducted with several methods in it, namely descriptive methods, evaluative methods, and experimental methods (Multiyaningsih 2016). (1) The descriptive method is used by the researcher at the beginning of the study using observation, interview, and documentation techniques, to collect data on existing conditions such as (a) the produk condition to be developed, (b) the use condition, and (c) the product condition, supporting factors and inhibitors of the pe media development. Which will then be discussed descriptively to clarify the intended purpose. (2) Furthermore, the evaluative method is used by the researcher to evaluate the product in the process of testing the development of a product in other words, it is used to revise the articulate Storyline learning media product , which is obtained using expert assessment questionnaires and questionnaires test user response. This method is implemented during an assessment of the feasibility and effectiveness of the media developed in this study. (3) And finally the experimental method, this method is used to test the effectivenessof the product being developed (products that have undergone assessment and revision), because at this stage this test is carried out with two comparison groups or control groups, so that results are obtained that can be in the form of activities that have certain variations determined by the researcher to research, review, or review and then draw conclusions. In this method, researchers will conduct experiments during learning with the subject matter of State Budget and Local Budget in two classes XI of social studies to then encode the learning outcomes of the second class of the class (the experimental class conducts learning with the developed Articulate Storyline media, while the control class conducts learning with conventional media). (Sugiyono 2020).

The free variable in this study is the articulate storyline economic learning medium developed. Meanwhile, the bound variable in this study is student learning outcomes after using articulate Storyline learning media.

The development model is the basis for developing the product to be produced. The model presents something or information that is complex or complicated into something simpler or easier. Researchers used the ADDIE model in this study. The ADDIE model is a learning design model that provides an organized process in the development of learning media (Cahyadi, 2019) so that it can be used both for face-to-face learning and online learning. This model   consists of 5 stages: Analysis, Design, Development, Implementation, and Evaluation.

- *Analyze* is analyzing the needs in the learning process to determine the right problems and solutions and determine students' competence. In this study, the researcher analyzed performance and needs aspects conducted by interview.
- *Design* is to determine specific competencies, methods, teaching materials, and learning. A research design for the development of *articulate storyline* learning media is carried out based on the State Budget and Local Budget materials which consists of determining the outline of the media content, material specifications, compiling *flowcharts,* and compiling *storyboards.*
- *Development* is producing programs and teaching materials that will be used in learning programs using *articulate storyline software* which will then be validated by experts and carried out product trials with assessment instruments in the form of validation and response questionnaires.
- *Implementation* is to carry out a learning program by applying *articulate storyline* economics learning media in the classroom.
- *Evaluation* is to evaluate learning programs and evaluate learning outcomes.

The data collection technique and instrument used in this study were interviews conducted with teachers and 15 class XI social studies sma Negeri 1 Deli Tua students who were randomly selected and willing to be interviewed. Furthermore, researchers made observations to observe the conditions of schools, classes, and economic learning situations of class XI social studies in the classroom. Then aquestionnaire, the questionnaire is prepared based on guidelines and indicators obtained from other experts according to their fields and questionnaires that have been used in previous research . And objective questions or question items, which before use of the economic material that is compiled are validated first. The questions were tested on 32 students in the same school but with different classes but had the same characteristics as the sample, then analyzed using several further tests, namely validity tests, reliability tests, difficulty level tests and differentiating power (Sumarno 2021).

An expert assessment consisting of lecturers and subject teachers was carried out   as well as user trials to measure the   feasibility of the media developed. In this study, individual trials of 3 selected students were selected at different academic levels, a small group trial of 10 students of class XI social studies selected based on different academic levels, and a field trial of 35 students of class XI social studies. Researchers use the instrument to assess articulate storyline learning media products (carried out at the development stage) . For the design of experiments carried out at the implementation stage, the samples selected were class XI IPS 1 for the experimental class and class XI IPS 2 for the control class with the number of students of each class of 35 people. The selection of these two classes is based on the results of the researcher's observations and discussions with economics teachers. Researchers chose classes XI IPS 1 and XI IPS 2 because these classes have equivalent initial abilities (superior classes) and adequate technological facilities (facilities and infrastructure).

Then dessayn the research used in this study is the design of the Pretest-Posttest experiment two different treatment classes. This is done to determine the effectiveness of the media developed to improve learning outcomes.   To find out the initial state, each group was

given a pretest followed by a posttest to find out the differences generated after the experimental class was given the treatment applied learning with the Articulate Storyline economic learning medium, and the control class was givena rant learner without the Storyline Articulate.

The data analysis used by researchers is in the form of qualitative descriptive analysis and quantitative analysis. Qualitative analysis to process data from interviews conducted in a structured manner and data from suggestions, comments, input from various experts, teachers, and user trial responses. According to Miles and Huberman (Sugiyono 2020) quantitative analysis is from the collected questionnaire data and then processed to get an idea of the Articulate Storyline learning media that will be developed whether it is feasible or not. In addition, an independent t-test and N-Gain value were also carried out to determine the effectiveness of media in improvinglearning outcomes (Arikunto, 2013).

The hypotheses in this study are (1) Storyline articulate learning media developed suitable for use in economics subjects class XI social studies SMA Negeri 1 Deli Tua, and (2) Storyline articulate economics learning media   developed effectively toimprove student learning outcomes in economics subjects class XI Social Studies SMA Negeri 1 Deli Tua.

RESULTS AND DISCUSSION

This research uses model ADDIE which is used in development research ini consists of several stages. Namely Analysis, Design, Development, Implementation, and Evaluation.

Analysis

At this stage of the analysis, it is carried out before developing economic learning media products with articulate storyline software. This analysis stage is intended to find and define problems which will then be formulated in the form of needs in the learning process and formulate various information about the learning media that isdeveloped. This stage of the analysis is carried out by the method of interview and observation.

Design

The second stage is the design stage. This stage is the creation of learning media based on the previous stage of analysis. The steps in this planning stage consist of compiling an outline of the media content, determining the material specifications, compiling a flowchart, then compiling a media script (storyboard).

Development

The next stage is the development stage.' At this stage, the development of articulate storyline economics learning media is carried out based on the results that have beencarried out in the previous stage. At this stage of development, the researcher describes 3 stages that are carried out, namely pre-production (preparing tools and materials including software used to produce articulate storyline economic learning media). Produksi (tahap this is done by researchers based on the draft manuscript). Development is carried out by determining, creating, and collecting complementary media such as backsounds, menu icons, illustrations, animations, charts, images, voice recordings of the narrator, and videos supporting learning materials. Seteis the media collected, then put into the articulate storyline software to be compiled and developed into a learning medium). And post-production (at this stage, an examination and assessment of whether the media still has errors or shortcomings. Checking is carried out starting from the completeness of the material, the maximization of the appearance of animations, videos, and images on the media, as well as the accuracy of the response of the button icons on the media.

Furthermore, the articulate storyline economic learning media will be validated by experts, namely learning tool experts (Syllabus and RPP), materials, media, and teachers (content experts). In addition, researchers also tested the feasibility of the media by collecting data in the form of student responses in the form of user trials after using articulate storyline economics learning media. From the results of the expert assessment, it will be a decision whether the articulate storyline economic learning media is worth using, as well as answering the first hypothesis in this study) .

The results obtained from the trial assessment of experts, teachers, and users, obtained the following assessment percentages. The testing and feasibility analysis of the media developed in this studywas carried out to determine the validity or feasibility of the articulate storyline economic learning media developed. The feasibility test is carried outby a team of 3 experts in their fields, teachers as content experts, and user trials are carried out on students. Then the results of the assessment are analyzed according to the criteria used. The assessment results obtained in Table 1 are the assessment's final results after revisions to the developed media.

Table 1. Accountability Assessment of Articulate Storyline Economic Learning Media

Assessment	Percentage
Material Expert	89%
Learning Tools Expert	87%
Media Members	96,8%
Guru	92,8%
Individual Trials	90.7%
Small Group Trials	94%
Limited Trial	95,1%
Average	**92%**

Based on table 1 of the test conducted to 4 experts in their fields including teachers, 3 user trials to students, namely 3 students in the individual test, 10 students in the small group trial, and 35 students in the limited trial. Based on the results of the calculation of the assessment score, the average percentage of assessment of 92% in the category is very feasible. This means that the articulate storyline economic learning media developed is suitable for use in economic learning.

Implementation

This stage of implementation or application is carried out to measure the effectiveness of articulate storyline economic learning media developed on student learning outcomes. The application was carried out by designing a two-group pretest-posttest experimental research, by comparing the average learning outcomes of the two groups used as samples. The application to measure the effectiveness of articulate storyline economic learning media was carried out in class XI IPS 1 totaling 35 people as an experimental class (with treatment), which compared the average learning outcomes with class XI IPX 2 amounting to 35 people as a comparison class without treatment (control class). The selection of this class is based on the assumption that these two classes have the same abilities (superior class) and and adequate technological facilities (facilities and infrastructure). The implementation of the use of media is carried out in the process of economic learning activities for State Budget and Local Budget materials, the application is carried out by researchers together with teachers in the field of study directly.

Initial Condition: before the implementation of the media, students will be given pretest questions in the form of multiple choice questions with a total of 30 questions with5 answer choices. The pretest digive aims to measure the initial knowledge of students.

Treatment : conducting learning using articulate storyline economic learning media that has been developed

Final Condition: After students use the storyline articulate economics learning media, the next step is to give a postest as an evaluation of student learning outcomes. It aims to measure the improvement of student learning outcomes after being given an articulate economic learning medium storyline. The postest question is a multiple choice question with a total of 30 questions with 5 answer choices.

Table 2. Student Learning Outcomes

Class	Data	Result		
		$Some_{who}$	Xi_{max}	$\bar{X}$
Experimen	Pretest	40	80	56,49
	Post	72	100	88,00
Control	Pretest	40	80	57,80
	Post	56	86	69,69

Table 2 above shows that the pretest values of the control class and experimental classes' pretest values have the lowest value (x_{min}) and the highest value (x_{max}) of the same. There is no difference in ability between the two classes, it can be concluded that the two classes have the same characteristics. Then, the post-test acquisition data was analyzed for the experimental and control classes. It was found that there was a difference in the lowest score (x_{min}) and the highest score (x_{max}) between the experimental classes that received treatment in the form of the use of articulate storyline economics learning media, obtained learning outcomes higher than the acquisition of control class learning outcome scores that did not receive treatment in the form of using n learning media meaningccaterpillare storyline in economic learning.

Evaluation

Evaluation is the last stage in the development model used by researchers. At this last stage the developer will evaluate the media that has been implemented. This stage aims to determine the improvement of student learning outcomes in economics subjects by using *articulate storyline* economics learning media. Evaluation is carried out by analyzing student learning outcomes and validation questionnaires and student responses that have been carried out in the previous stage. It also aims to answer this study's first and second hypotheses regarding the feasibility and effectiveness of *articulate storyline* economic learning media in improving student learning outcomes.

Independent T-Test Results

The media was declared effectively used to improve student learning outcomes by applying it to experimental classes and obtaining independent t-tests and obtaining N-Gain scores in table 3 and table 4 below

Table 3. Independent T-Test Results

Data	Class	$\bar{X}$	T_{count}	T_{table}	Itself	Information
Post	Experiment	88,00	9,623	1,9955	0,00	Student Learning
Post	Control	69,69				Outcomes

Table 4.   N-Gain Results

Information	Control Class	Experimental Class
$\bar{X}$ Pretest	57,80	56,48
$\bar{X}$ Post	69,69	88,00
N-gain	28,7	71,8
Criterion	Low	Tall
KKM > Value	25,7%	97,1%

Before the data is tested, prerequisite tests are carried out, namely normality and homogeneity. Dobtains normal and homogeneous student learning outcomes. Independent T-Test testing can be seen assuming the following hypothesis:

If t counts < tof the table, then H0 is accepted and Ha is rejected. There is no difference in learning outcomes between the experimental and control classes.

If tcount > t of the table, then H0 is rejected and Ha is accepted. There are differences in learning outcomes between the experimental class of the independent t-test control class with the help of SPSS obtained Tcount > Ttable which is 9.623 > 1.9955 with sig. 0.000 < 0.05 then H0 is rejected and Ha is accepted, and the acquisition of N-ga in the experimental class is 71.8 high category.

If analyzed from the scores obtained, the experimental class is in the high category, on the contrary, the control class is still in the low category. So it can be concluded that the improvement of student learning outcomes by utilizing the storyline articulate economics learning media developed in this study has improved better or higher increases compared to learning by utilizing conventional economic learning media.

Development of Articulate Storyline Economic Learning Media

Some learning theories such as behavioristic theory, cognitive learning theory, constructivist learning theory, and humanistic learning theory create different learning design approaches but emphasize on the perspective that learning practice will be successful and maximum if it has features accommodated by learning media (Hasan et al. 2021). The learning theory that is the basis for the development of this learning media is the theory of constructivism learning because in the theory of constructivism the teacher is emphasized to act as a facilitator who will create an atmosphere of independent learning for students. So that with the existence of the media, it is hoped that it will be able to explore students' understanding of the concepts learned, develop students' curiosity and students can further reconstruct concepts into new knowledge (Nurlina et al. 2021). One of the efforts to develop learning media teachers can do is using Information and Communication Technology (ICT). The use of ICT in learning has been proposed by the State Ministry of Research and Technology, namely ICT as part of science and technology globally, namely all technologies related to the retrieval, processing, storage, dissemination, and presentation of information (State Ministry of Research and Technology of the Republic of Indonesia 2006).

The presentation of the information in question can be in the form of developing and utilizing ICT-based learning media, both offline and online, which can be used as input for interested parties, especially educators. So that technology and communication can make it easier for students to learn and obtain the necessary information anywhere, anytime, and from anyone (Pangestu & Wafa, 2018)

Learning activities actually involve many components (Ramli, 2012). One of the most important is the media component. Media in learning essentially have a very important function

and use to help the smooth learning process and the effectiveness of achieving learning outcomes. The use of media in the learning process does not only apply to each student in the teaching and learning process, but teachers can take advantage of this facility to enrich teaching abilities in the classroom (Sukiman, 2012). Multimedia technology has recently become one of the interesting research materials in the field of education because multimedia is one of the latest technologies in the field of computers that can make learning media more complete. Multimedia summarizes various media in one software to make it easier for teachers to deliver teaching materials. The learning media that is currently popular is multimedia. Multimedia can be defined as a combination of text, images, animation, graphics, sound, and video, to display information under the control of a computer (Munadi, 2010). Learning media has many benefits as a tool for teachers to convey messages to students. According to (Hasan et al., 2021) media is a means of communication both in print and audio-visual form that must be arranged and used as needed, can be seen, heard, and read and simplify complex forms and concepts (Maharani, 2015).

In this study, the learning media products developed can be categorized into computer-based multimedia learning media. Multimedia is a combination of various media: text, images, graphics, video, and audio as well as other media (Indah Septiani et al., 2020). Multimedia is also defined as a computer system consisting of hardware and software that makes it easy to combine images, videos, photography, and animation with sound, text, and data controlled by computer programs (Munir, 2001).

Figure 1. Developed Storyline Articulate Media Display

Feasibility of Articulate Economic Learning Media Storyline Developed

The development of articulate storyline economic learning media uses the ADDIE (Branch 2021) model development design where 5 stages must be carried out, namely: 1) analysis, 2) design, 3) development, 4) implementation and 5) evaluation. The process of developing and manufacturing learning products is carried out in stages to produce feasible products that can answer and meet learning needs. To determine the feasibility of the learning media developed, it is necessary to analyze it based on a validator questionnaire consisting of expert validators, teachers, and students (Multiyaningsih, 2016).

Articulate storyline learning media is worthy of being applied in the learning process because the media developed is following the material to be taught. The criteria are very feasible to obtain based on the expert assessment of the material in this study after being revised by 89% with the criteria very feasible. The materials covered are appropriate, the assessment aspects are very good, and the materials in the media are interesting and clear. Furthermore, the acquisition of expert assessment of learning tools after being revised by 87% with very decent criteria. The

results of the feasibility assessment by media experts obtained after revision were 96.8% with very feasible criteria for each aspect validated by learning media experts. So that the results of the assessment of the validity of articulate storyline economic learning media developed in this study are declared very feasible. Furthermore, assessments and responses by users are carried out by teachers (content experts). The results of the validation assessment obtained a total percentage of 92.8% so that it can be concluded that the articulate storyline economic learning media developed is very suitable for use in learning according to subject teachers. Furthermore, an individual revision trial was carried out in accordance with the suggestions given by the students. The total score of student responses based on the assessment aspect was 90.7% in the very decent category. The results of the subsequent assessment carried out by small group trials obtained a total of 94% of the answers in the very decent category, and finally the student response to the limited test, which was 95.1% in the very decent category. So that overall the Articulate Storyline media review developed in this study obtained an average rating percentage of 92% with the category "Very Feasible".

To optimize the learning carried out, it is necessary to use the right learning media. The feasibility of the media used can be seen from the ease and practicality of use by students. In addition to assisting teachers in the delivery of economic learning materials (Fatikhah & Anggaryani, 2022). This is in line with the opinions of experts who say that articulate storyline is one of the software creation media that has many advantages and is easy to learn, so the selection of storyline articulate in making learning media is one of the most interesting things to develop (Yoana, 2016). The selection and suitability of the material with KI, KD, and indicators on the developed media is very important to avoid mistakes or improper delivery of the material and make it easier for students to receive and understand the learning material accurately. (Jow 2018; Mustofa et al. 2019). His research stated that Articulate Storyline 2 was used to create interactive training programs and was built with the ADDIE development model. The results of the needs assessment conducted with a sixth-graders provided the tutorial's content. Overall, many participants enjoyed the training program. Many claim that the tutorials are easy to follow, informative, interactive, and purposeful. Participants' responses identified the tutorial as a program they would recommend to other parents. The same opinion is also expressed by (Wilechansky et al., 2016). (Darnawati et al. 2019) Articulate states Storyline is an application powered by simple smart brainware with interactive tutorial procedures to help users format CDs, personal web, and word processors through offline and online templates. Based on the advantages of this articulate storyline application, it is suitable mainly for improving cognitive abilities (Wibawanto, 2017), cognitive processes are classified from the level of simple knowledge to the level of creation. Therefore, the student needs to dig and practice his cognitive abilities because of his cognitive abilities.

The use of articulate storyline economic learning media developed in this study is suitable for use in economic learning in class XI social studies students of SMA Negeri 1 Deli Tua. Based on the acquisition of validation expert assessment scores and user test response scores, articulate economic learning media storylines are practically used, help students understand the State Budget and Local Budget materials, and provide convenience in facilitating the delivery of material by teachers to students based on assessments made by the expert team and the average user response in the category of "Very Feasible", it can be concluded that articulate economy learning media storyline the developed has met the eligibility and practicality requirements to be utilized and used in class XI social studies economics learning at SMA Negeri 1 Deli Tua.

Effectiveness of Articulate Storyline Economic Learning Media Development

The study's results obtained that the average student learning outcome (posttest) in class XI IPS 1 (experiment) was 88.00, while previously the student learning outcomes obtained based on the pretest assessment were 56.49. And the learning outcomes (posttest) of class XI IPS 2 (control) are large. 69.69, and the control class pretest result was 57.80. The results obtained from the Independent T-Test test were obtained $t_{count} > t_{table}$ which was 9.623 > 1.9955 with a sig. 0.000 < 0.05 then H_0 was rejected and H_a was accepted so that it can be concluded that the final ability or learning outcomes of students in the experimental class are significantly different from the control class.

Based on the comparison of averages and comparisons of calculations and significance values, it can be seen that there is a significant difference between the learning outcomes of students who use storyline articulate learning media and the learning outcomes of students who use conventional media. Based on the increase in the N-Gain value of the experimental class of 71.8 which is in the "High" category with the achievement of KKM of 97.1% compared to the N-Gain value of the class kontrol of 28.7 which is in the "Low" category with the Achievement of KKM of 25.7%, it can be concluded that the storyline articulate economics learning media that is effectively used in economics learning to improve the learning outcomes of class XI social studies students at SMA Negeri 1 Deli Tua.

Results In line with opinions (Mumtahana, 2020), learning content in computer-based media with a valid, practical, and effective Articulate Storyline can improve student learning outcomes. (Rohmah & Bukhori, 2020) Also, learning media using articulate storyline 3 can be used as a learning resource and as a supporting medium for distance learning. This is in line with previous research conducted by (Fatikhah & Anggaryani, 2022) which aims to find out the effectiveness of the application of articulate storyline-based learning objects "Very Effective" and very feasible to use and significant to students' cognitive abilities, the improvement of cognitive abilities is quite effective, and the student response category is very positive. (Hadza et al., 2020) suggest that it was found that teachers use storyline articulate-based object media for classroom learning very effectively used to improve student understanding, especially in abstract materials. Quoted from (Bahri and Huda 2019) articulate storyline learning media can increase students' curiosity so that satisfactory learning outcomes are obtained.

CONCLUSION

Based on the results of the research and discussion that has been described, several conclusions can be obtained if the articulate storyline of developing economic learning media is very feasible and practical to be used for learning media in economic learning in class XI social studies students at SMA Negeri 1 Deli Tua. Furthermore, it can be concluded that students' final ability or learning outcomes in the experimental class are significantly different from the control class and effectively used to improve the learning outcomes of class XI social studies students at SMA Negeri 1 Deli Tua. The researcher suggests if it is highly recommended for other researchers to test the articulate storyline media more broadly, develop with more material, and combine with other tools or software in media development articulate next storyline.

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