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DEVELOPMENT OF INTERACTIVE LEARNING MEDIA USING ARTICULATE STORYLINE 3 ON THE PLANE FIGURE MATERIALS

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PENGEMBANGAN MEDIA PEMBELAJARAN INTERAKTIF MENGGUNAKAN *ARTICULATE STORYLINE 3* PADA MATERI BANGUN DATAR

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ABSTRACT

Abstract: *The development of interactive learning media using Articulate Storyline 3 on plane figure material aims to determine the development and feasibility of product development through interactive learning media. The research methodology used is Research and Development with the ADDIE approach (Analyze, Design, Development, Implementation, Evaluation) with the research subject of students at class IV-C SDN Julang Bogor. The instruments used in the research are media expert validation sheets, linguists and material experts with a total of three experts, students and teacher response instruments, and pre-test and post-test instruments. The validation results produce an average score of 93.7% with the "Very Feasible" criteria. Moreover, the results of the pre-test and post-test assessment produce an N-Gain score of 0.70 with the "High" criteria. Students' responses indicate 98.7% and teachers' responses indicate 88% with the "Very Good" criteria. Based on the results, the development of interactive learning media using Articulate Storyline 3 on plane figure material in class IV SDN Julang Bogor meets the criteria of validity and feasibility for its development, especially on plane figure material.*

Keywords: articulate storyline 3, interactive learning media, plane figure

Abstrak: Pengembangan media pembelajaran interaktif menggunakan *Articulate Storyline 3* pada materi bangun datar bertujuan untuk mengetahui pengembangan dan kelayakan suatu pengembangan produk melalui media pembelajaran interaktif. Metodologi penelitian yang digunakan yaitu penelitian dan pengembangan dengan pendekatan *ADDIE* (*Analyze, Design, Development, Implementation, Evaluation*) dengan subjek penelitian siswa kelas IV-C SDN Julang Kota Bogor. Instrumen yang digunakan pada penelitian yaitu lembar validasi ahli media, ahli bahasa, dan ahli materi dengan jumlah tiga para ahli, instrumen respon siswa dan respon guru, dan instrumen *pre-test* dan *post-test*. Hasil validasi menghasilkan rata-rata 93,7% dengan kriteria "Sangat Layak". Selanjutnya hasil penilaian *pre-test* dan *post-test* menghasilkan skor *N-Gain* 0,70 dengan kriteria "Tinggi". Respon siswa yang memperoleh 98,7% serta guru 88% dengan kriteria "Sangat Baik". Berdasarkan hasil yang diperoleh, pengembangan media pembelajaran interaktif menggunakan *Articulate Storyline 3* pada materi bangun datar di kelas IV SDN Julang Kota Bogor memenuhi kriteria valid dan kelayakan atas pengembangannya khususnya pada materi Bangun Datar.

Kata Kunci: *articulate storyline 3*, media pembelajaran interaktif, bangun datar

CITATION

Anggraini, N., Gani, R, A., & Safitri, N. (2023). Development Of Interactive Learning Media Using Articulate Storyline 3 On The Plane Figure Materials. *Primary: Jurnal Pendidikan Guru Sekolah Dasar, 12* (4), 1073-1083. DOI: http://dx.doi.org/10.33578/jpfkip.v12i4.9907.

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INTRODUCTION

In this era of globalization, technological advancement is accelerating and a lot of new information is being collected from different aspects like social, economic, cultural, political, and educational. In relation to the development of technology, which also affects education, various educational institutions have to use technology, especially in the learning process (Novitasari et al., 2021). This aspect plays an important role in the activity of the learning process media learning, but it is clear that the learning process also includes different aspects to achieve educational goals (Tafonao, 2018). Media learning is one of the pillars of a successful learning process, and achieving this success requires the role of creative and innovative teachers using current technologies (Pakpahan et al., 2020). Interesting teaching aids make it easier for students to absorb the material presented and learning is not boring.

Articulate Storyline 3 is a multimedia authoring tool that combines textual multimedia formats. Images, graphics, sound, animations, and videos. It is then packaged into a web environment (html5) or application files that can be run on various devices such as computers and laptops. Articulate Storyline 3 app was released in 2016 as the next generation which has more interesting features after the previous generation viz. Explain the second story (Articulate, 2020) (Khusnah et al., 2020)

We need transparent learning support in the content we receive. Especially for surface area and area and range of materials IV classrooms . This is the field of research that requires analysis through observations and interviews IV. Schools in Bogor City often still use teaching aids in the form of print media and other tangible general materials. Digital media used is underdeveloped, and school facilities and infrastructure are functioning well but underutilized.

The teachers added that the content in the textbooks is incomplete and difficult for students to access, which often leads to uneven student understanding in the classroom. Especially mathematics, especially (Fajarwati & Irianto, 2021). The realm of material fields and plane geometry. This material nature appears to be abstract for Grade 4 students whose developmental stages fall into the operational concrete category and always support logic (Nuryati & Darsinah, 2021). A learning environment can be defined as anything that can be used to convey information and stimulate students' thoughts, emotions, attention, and desires to facilitate learning. There are several types of learning environments, one of which is the interactive learning environment that can provide answers through media interactionm (Yahya et al., 2020)

Interactive learning environments allow students to sit directly in containers (computers, laptops, etc). Students not only benefit visually, but also respond through interactive media (Yahya et al., 2020). It has been shown that interactive learning environments are effective in overcoming apparently monotonous learning and that it encourages students to use them to explain abstract problems through student actions and reactions (Gunawan et al., 2022). What is forced, may improve comprehension (Yanto, 2019).

It is based on the characteristics of an interactive learning environment with a visual packaged learning delivery system, which displays audio and video under computer control, where not only sight and hearing allow sight and hearing but also active response. The advantage of (Asela et al., 2020) is that the learning process becomes more active (Suryani, 2018). Interactive learning environments enable two-way learning between students and the learning environment (Prihatiningtyas & Nikmatus Sholihah, 2020). Also, teachers can be pure facilitators in the learning process.

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Considering that the advantage of interactive learning environment is freedom, this can be one of the disadvantages of interactive learning environment because this free structure affects the social interaction of students who are individualistic. In addition, external parties can also be one of the disadvantages of providing an interactive learning environment. That is, the government's lack of attention to the situation of learning using interactive media, where school facilities are still scarce and inadequate (Septa Lutfi Nugraha et al., 2020). Articulate Storyline 3 is one of the software tools for multimedia creation that integrates multimedia formats in text, images, graphics, audio, animation and video. It is then packaged into a web environment (html5) or application files that can be run on various devices such as computers and laptops (Gunawan et al., 2022).

Articulate Storyline Three can combine different materials to create interactive learning aids (Amiroh, 2019). The presence of functionality and design similar to Microsoft PowerPoint simplifies the production process (Rustandi & Rismayanti, 2021) articulate storyline is one of three's strengths. Articulate can actually be packaged in HTML format using storyline three, so depending on support. This means that (Juhaeni et al., 2021) Development of Interactive Learning Materials Using Articulate Storyline Three was developed as a flat construction learning material for fourth grade primary school students. Details begin with identifying regular and irregular polygons, area and perimeter of squares, area and perimeter of rectangles, square roots, areas and perimeters of intermediate triangles, and finally lines.

THEORETICAL SUPPORT

Interactive Learning Media

Learning media is one of the important aspects in the learning process as a place to convey knowledge to humans (Parnabhakti & Puspaningtyas, 2021). Learning media has various types, one of which is interactive learning media. Interactive learning media is a form of delivery in learning that is packaged in the form of videos, recordings by being treated directly by students on their containers (computers, laptops and the like) students are not only given visual treatment, but provide responses through media interaction (Yahya et al., 2020).

Interactive learning media has the characteristics of a learning transmission system that is packaged visually, audio and video presented under computer control for observations that are not only seen and heard images and sounds but also produce active responses (Asela et al., 2020).

The advantages of interactive learning media are two-way interaction between teachers or media to students so that the learning process is more lively (Suryani, 2018) through the display of content such as text, images, audio, and video on the computer (Rusman, 2018). Given the advantages of interactive learning media that are independent, this can also be one of the disadvantages of interactive learning media, because this independent nature will have an impact on students' social contact which will tend to be individualistic (Prihatiningtyas & Nikmatus Sholihah, 2020).

Based on several theories of experts, it can be synthesized that interactive learning media is an interactive media package in which various other forms of media can be inputted, so that there is treatment between students and the media directly.

Articulate Storyline Three

The Articulate Storyline application was first launched in 2012. This application is issued by the e-learning and media software field of the articulate company. Initially the company launched the articulate platform in 2002 and then always made improvements to the applications they launched until in 2017, precisely in September, the articulate company

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launched its latest product called Articulate Storyline Three.

Articulate Storyline Three is a multimedia authoring tool with a combination of media forms in the form of text, images, graphics, audio, animation, and video. Then packaged in web-based media (html5) or application files that can be run on various devices such as computers, laptops and the like (Nahdah Husna, 2022)

Articulate Storyline Three has the advantage that there is a simple smart brainware program with interactive tutorial steps through templates that can be published offline and online, making it easier for operators to package it in various forms (Wahyu Maesharoh & Tijan, 2022).

Another advantage is that there are features and designs similar to Microsoft PowerPoint, so the manufacturing procedure will seem easy (Agustina et al., 2022), can be published on various forms of e-learning platforms that are used without space and time limits because the format can be published online and offline via LINK or compact disc (Damanik et al., 2022) this media can also make students interested in participating in learning because the appearance and features are very attractive (Nurmala et al., 2021).

Articulate Storyline Three has the advantage that there is a simple smart brainware program with interactive tutorial steps through templates that can be published offline and online, making it easier for operators to package it in various forms (Wahyu Maesharoh & Tijan, 2022).

Articulate Storyline Three can indeed be packaged in the form of a website, but if the use of slides used is too much, the results of the media cannot be packaged into the website. So, the use of slides needs to be limited if you want to be packaged and accessed via the website (Ismiranda & Ariani, 2020) In addition, when the use of slides is widely used, then packaged in HTML, the media will be dependent, meaning that it requires the help of other software as an alternative form of access (Juhaeni et al., 2021).

The supporting factor for choosing interactive learning media using Articulate Storyline Three is because this software has an .exe format feature so that it can be used directly without reinstalling. Articulate Storyline Three can also be run on Windows versions 7, 8, to 10. Besides, there are also inhibiting factors for this software, namely, there are still some teachers who have difficulty processing technology-based media due to age, because the features contained in this software are quite varied (Anggraini & Reinita, 2021).

Another inhibiting factor is that user access to this software can only be used for free for 30 days as a free trial facility, then a subscription is required according to time requirements (Juhaeni et al., 2021). Based on several theories reviewed previously, it can be synthesized that Articulate Storyline Three is used as an interactive learning media with an independent nature, has attractiveness and feasibility and usefulness both cognitively and others.

RESEARCH METHODS

R&D is a method of developing and testing product performance. In this type of RnD research, there are several research models that can be used as a reference for the research (Asela et al., 2020). Although there are various models for research and development methods, the model used in this study is the ADDIE model. ADDIE Model (Analysis, Planning, Development, Implementation, Evaluation) (Rosmiati, 2019).

Population is the whole subject which the researcher identifies as the source of his research activity (Sugiyono, 2019). The population the researchers used in this study was a total of 60 students in Class IV-A and IV-C of SDN Julang in the 2022/2023 academic year. A sample is part of a population with the same characteristics. Samples should be representative of the entire

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population. The technique used in this research is purposive sampling which involves determining the sample according to certain criteria (Sugiyono, 2019). The researchers still used partial books as the primary learning environment and compared existing books using the standards of students who were not involved in the Articulate Storyline Three interactive learning environment and who still used the book. did not We chose this technique to identify students based on population aggregates. We thoroughly researched flat content. Based on this, the number of samples taken by the researchers was 30 students of class IV-C.

The data collection techniques and tools in this study are qualitative techniques such as interviews, written notes, and questionnaires that are recommended for expert verification. Quantitative method with expert validation questionnaire with determination of percentage (Arikunto, 2019). In addition, the results of the data analysis can be interpreted with the following interpretation : (Hardani, 2020)

Table 1. Criteria for Media Appropriateness

Exam results			To continue
No	**Percentage**	**Ability**	
1	<21%	Very lame	review
2	21% - 40%	Not realistic	review
3	41% - 60%	Very good	review
4	61% - 80%	appropriate	Application
5	81% - 100%	Really worth it	Application

Source: (Hardani, 2020)

The next technique, questionnaires and teacher responses, comes from the analysis of teacher-student responses, resulting in quantitative data with the following formula: (Pariska, 2021)

$$P = \frac{n}{N} X\ 100\%$$

After obtaining the results of the student and teacher questionnaires, they were interpreted as follows:

Table 2. Student and Teacher Response Criteria

Percentage%	Criteria
80% - 100%	Very Good
66% - 79%	Well
56% - 65%	Enough
41% - 55%	Less
<40%	Very Less

Source: (Hardani, 2020)

Furthermore, the test questions were carried out with pre-test and post-test using *%N-Gain* through the following formula:

$$N - Gain = \frac{S\ Posttest - S\ Pretest}{S\ Max - S\ Pretest}\ X\ 100\%$$

Table 3. N-Gain Score Distribution

Percentage	Criteria
g > 0,7	High
0,3 ≤ g ≤ 0,7	Medium
9 < 0,3	Low

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RESULT AND DISCUSSION

Result

The end result of this development product is the interactive learning media Articulate toryline Three on the material "Build Flat" in the partial Mathematics subject, which was validated for feasibility before being tested by three media, language and material experts. This validation produces an average of 93.7% broken down as follows:

In addition, the validation results of media, language and material experts on the products developed are detailed in the following table 4:

Table 4. Summary of Peer Review Results

No	An Expert	The Amount
1	Multimedia Specialist	91%
2	A Linguist	98%
3	Materialist	92%
	Average	93,7%
	Ability	Very Feasible

Based on this, it can be concluded that interactive learning media using Articulate Storyline Three on Flat Shape material in class IV-C SDN Julang is declared very feasible for trials in learning.

Furthermore, after the trial was carried out, a limited student response and a limited teacher response were carried out with a total of ten statement items, with the results of student and teacher response data presented in tabular form as follows:

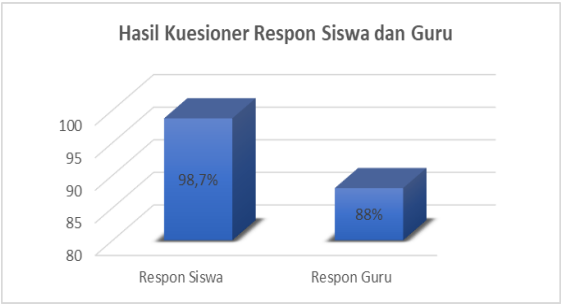

Figure 2. Survey Results for Student and Teacher Responses

Based on these data, this interactive learning media provides practicality in aspects of convenience, attractiveness and usefulness for each user, especially students in class IV-C at SDN Julang.

The evaluation stage is the last step which is carried out through pre-test and post-test trials, this is useful for knowing the effectiveness of a product more accurately, according to the that this evaluation activity aims to determine the success and effectiveness of a product being developed. To find out the effectiveness of this interactive learning media in significantly improving students' cognitive abilities between the pre-test and post-test results, the N-Gain calculation was carried out. The recapitulation of students' pre-test and post-test scores is presented in the following table:

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Table 5. Results of N-Gain Calculation Before and After Testing

Standard	Test Tools Test Questions	
	Showing off	Post test
Number of students	30	30
Highest score	80	100
Lowest price	50	70
Average price	54.87	88.33
N-Gain	0.70	
N-Gain Score(%)	70.28%	
Standard	**High**	

The data shows that the N-Gain in class IV-C is 0.70 which is included in the "High" criteria. With a total of 60 students, which is divided into pre-test 30 students with the highest score of 80 with an average of 54.87 and post-test 30 students with the highest score of 100 with an average of 88.33.

Therefore, it can be concluded that there is a good increase in students' cognitive abilities and students' understanding between before and after using Articulate Storyline Three interactive learning media on Flat Buildings material.

Discussion

This study was implemented in SDN Julang Bogor City. Site selection for this study was based on issues raised during a pre-study event held on Monday, February 27, 2023, and interviews with teachers in grades IV-C. and classroom observation.

Thanks to this preliminary research, we have seen that students are not sufficiently active during learning and do not understand the student as a whole. One of the factors influencing this is the general use of books and other concrete materials, especially teaching materials based on simple forms of mathematics. Therefore, it is observed that students are less enthusiastic about learning, especially considering that learning mathematics is difficult. a student. This activity is consistent with observing the generation of solutions through the needs analysis involved in the evaluation phase (Hidayat & Nizar, 2021)

This development plan is consistent with the ADDIE model. Researchers believe that this medium will be an alternative to using modern technology- based media to solve problems based on past needs analysis. The choice to use it is based on previous research that has successfully tested the tool and enabled students to successfully understand the content. Easily accessible online and offline, engaging, interactive displays allow students to review and understand review materials at school and at home.

Depending on the needs of the students and the appropriateness of the materials used, we move to the design phase, where researchers implement product development plans through storybooks and flowcharts. Then, product validation tests were conducted with media experts, linguists and content experts. The purpose of this verification test is to ensure that the product is fit for use during testing.

The product was verified by 3 people, including Rector of Putik Pakuan University, Pakuan University Indonesian Language and Literature Lecturer and SDN Julang IV-C Classroom Teacher. The media validation score includes four aspects: the screen design

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aspect, the audio aspect, the video aspect, and the content and media compatibility aspect, resulting in a final score of 91%. Language validation includes communicative, interactive, interactive aspects, readability, relevance to student development, and conformance to language rules, with a success rate of 98%. In addition, the content relevance of the content in terms of content validity score and learning assessment is 92%. Based on product validation tests conducted by media experts, linguists and content experts, we received an average "very good" rating of 93.7%.

After the announcement of the feasibility of the field trial, the study was conducted on 25 May 2023 and the implementation phase was initiated. However, a total of 22 pre-tests were first conducted with 30 students to confirm the learning effect of the product. An interactive learning environment was then tested with 30 students in class IV-C using an articulated storyline three-flat format. From this evidence, the student gets a questionnaire for students including teachers. This is done to gain insight into the usage and perception of previously consumed media. Student and teacher response surveys covered aspects of relevance, attractiveness and usefulness, with an overall average of 98.7% for IV-C student responses and 88% for IV-C female classroom teachers. According to (Hardani, 2020), the 80% to 100% range falls under the 'very good' criteria. Therefore, student and teacher response flat-shape, articulate storyline three provides the best response and applicability to develop an interactive learning tool using this teaching material.

The final stage of this study is evaluation, which determines the effectiveness of the media during learning. This activity *begins with a test* to determine the student's ability before developing the product, and with a post-test after the product has been tested on the student. According to the pre-test data obtained from 30 students in the previous test, the highest score was 80 with an average of 54.87% and the lowest score was 5. Secondly, the data obtained during the last test, 88.33% of the 30 students with an average, the highest score is 100 and the lowest score is 70. In addition, *0.70 N-Gain* is included in the income account. According to (Hardani, 2020) the 0.70 criterion is included in the high quality. There is a significant difference in scores between the pretest and posttest.

Articulate Storyline Three, has been instrumental in improving students' cognitive skills and making the content easier to understand, especially when it was used in SDN Julang's IV-C residential construction classroom. was This is consistent with the previous study conducted by (Febrianti et al., 2021). Increased student motivation in the articulate storyline interactive learning environment for classroom flat architectural materials.

CONCLUSIONS AND RECOMMENDATION

Based on the processing of results and data analysis regarding the development of interactive learning media using Articulate Storyline Three on Flat Buildings material, it can be concluded that the development of interactive learning media using Articulate Storyline Three on Flat Buildings material, produces "Very Feasible" criteria applied to learning, this is supported by the assessment of media, language and material experts with an average of 93.7%. Then the student response also shows the feasibility of using this interactive learning media, by obtaining an average of 98.7% with the criteria "Very Good". Likewise, the teacher's response resulted in an average of 88% with "Very Good" criteria. After that, in the pre-test and post-test activities, a significant increase was found before and after using interactive learning media with an N-Gain score of 0.70 with "High" criteria. Based on the results of these data, it can be concluded that the development of interactive learning media using Articulate Storyline Three on Flat

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Buildings material is feasible and effective to use during learning.

Based on the results of the research that has been done, several suggestions can be made for teachers, Articulate Storyline Three interactive learning media can be used as an alternative learning media on Flat Buildings material regarding the square, area and perimeter of flat shapes and lines, by paying attention to time-consuming media making, and a stable internet network. Then, for other researchers, this interactive learning media can be developed with other materials and school levels.

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