

THE INTERACTIVE MULTIMEDIA DEVELOPMENT BASED ON ARTICULATE STORYLINE ON THE FAIRY-TALE MATERIAL UNDERSTANDING FOR THIRD-GRADE ELEMENTARY SCHOOL STUDENTS

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Abstract

This research is motivated by the problem of the lack of use of various technology-based learning media during online and offline learning in elementary schools and the lack of understanding of teachers in utilizing learning media. The purpose of this research is to develop interactive multimedia learning media products based on Articulate Storyline for teachers to use in online and offline learning activities. The type of research used is R&D (Research and Development) using a 4-D model but the dissemination stage is only carried out on a limited basis. The data analysis technique in this study used descriptive qualitative and quantitative descriptive analysis techniques. Data collection techniques used are interviews and questionnaires. Based on the results of research and discussion, it can be concluded that the development of interactive multimedia based on articulate storylines on fairy tale material in grade 3 elementary schools is valid and very suitable for use by teachers in learning. This was obtained from the results of material and media validation, respectively 83.33% and 90%, with both categories being very feasible. While the results of the limited trial were obtained at 87.83% with a very feasible category.

Keywords: learning media, interactive multimedia, articulate storyline

Introduction

Developed experience has a significant role in determining the achievement of learning goals acquired from school as a formal institution, and it helps elementary school students to improve their way of capturing information, mentality, and potency. There are several factors influencing the process of learning, and there are teacher, student, facility, and media. Various supporting components of the learning process connect to each other, especially the goal, subject matter, delivering method or strategy, media, and assessment because the success of learning cannot be separated from the role of teachers and students' interaction in formal education. On the other hand, the success of learning depends on the media, and therefore learning media has a huge impact on effectively delivering the learning content because it diminishes factors that hinder communication using completely verbalism (Daryanto, 2015).

The rapid technology growth is very influential in the usage of learning media at school. The effect of Industrial Revolution 4.0 impacts the growth of technology, information, and communication while education becomes one of their aspects. Surani (2019) stated that the modern era 4.0 had affected education could be

seen from the utilization of computer technology as an innovation in the learning process, and therefore teachers ought to be familiar with it.

Because of the Covid-19 pandemic, the learning media based on technology has been routinely used in the process of learning and teaching such as the use of Zoom, Microsoft Powerpoint, and video learning from Youtube. Technology does not only make things easier for students in gaining information but also enhances their interest and motivation in learning, so they remain active in operating the media that has been prepared by their teacher instead of just listening. In selecting the learning media, teachers ought to accommodate the character of students with the learning materials, thereby giving a meaningful learning process to them as one of its benefits.

According to Jean Piaget's hypothesis of cognitive development, elementary school students are at the concrete operational stage. At this stage, an individual tends to gain knowledge and idea through his perspective limited by a concrete or real situation because he is not ready for something abstract yet (Santrock, 2007). The concrete situation here is an object which uses students' abilities such as the sense of seeing, touching, hearing, tasting, and smelling and the concrete object appears as the media. For

example, students experience direct contribution when watching a video because they understand it by listening and seeing – compared to using one single method only such as speech. In conclusion, media increases students' ability in learning activities including their reading and writing skills (Ngussa & Chiza, 2017).

According to Arwanda's introduction study, et.al (2020:194) in Learning and Teaching Activities at Elementary School, students regularly use a learning media applied to one class only, and Microsoft Powerpoint becomes the most often used media displayed by using LCD projector (offline) or Zoom (online) while the teacher is the one who operates it by interacting with students. Other than that, the learning media consists of text and pictures only. In Ningrum's research (2021) interviewing third-grade homeroom teachers of SDN 1 Mulyosari Tanjungsari stated that the utilization of learning media used was limited to taking pictures from Google, video, and Powerpoint because of media limitations.

Furthermore, on the basis a researchers' interview with third-grade homeroom teachers of SDN Susukan 09, the teachers have not developed an interactive multimedia learning media using Articulate Storyline, whereas there are supporting infrastructure and facilities such as a computer lab and students' smartphones connected to the internet. Thus, there is a need for an innovative learning media to enhance the fairy-tale understanding of third-grade students..

Literature Review

A learning media is a facility to explain the message delivered by educators as the source of the message to learners as the acceptor in supporting the process of learning, and therefore the use of learning media provides several benefits such as increasing students' interests and motivations; active interaction; bringing meaningful experience, and developing their stimulated thinking. The media works well in the sense that the delivered message is in line with the its essence.

The Articulate Storyline application is a software of an e-learning programming functioning to support the making of content or interactive learning media, and this application aims intentionally to help the learning preparation. The Articulate Storyline as a learning media is one of many media intentionally made to prepare for learning. As a learning media, it directly involves students so that they can join the learning process actively.

According to Ningrum (2021), Indonesian Learning is one of the subject contents in the integrative thematic learning and aims to improve students' oral and written communication skills.

Indonesian subject has various language skill levels covering listening, speaking, reading, and writing as its four aspects, and these four aspects connect to each other. Indonesian learning becomes one of the literary appreciation.

Based on Theme Two of the 2013 Curriculum for Third-grade Class, the Content of Indonesia Subject consists of teaching materials such as fairy tales or fable stories because these two types of stories aim to introduce and appreciate literature at school. This learning process needs the learning media as a supporting component to deliver the message or material. Because of it, there is a need for media combining visual, audio, and audio-visual aspects. According to Ahmadi et al (2011:158), they said that multimedia was a media combining at least two media components and consisting of an integrated text, illustration, picture, image, sound, video, and animation (Fikri, Hasnul, 2018). Accordingly, further research development to develop interactive multimedia learning has a significant role to create a more optimum learning process while it also helps students to understand fairy-tale materials in Indonesia

Subject of the Two Theme easier. Hence, researchers have a huge interest to research and study more about "The Interactive Multimedia Development Based on Articulate Storyline on the Fairy-tale Material Understanding for Third- grade Elementary School Students".

Method

The type of this research is research development or R&D (Research and Development). This method is a research method to produce a product along with its effectiveness (Sugiyono, 2013). This research uses the 4-D model (Define, Design, Develop, and Disseminate) by Thiagarajan consisting of four development stages (Thiagarajan, 1976).

The definition stage aims to determine and define the requirements of development or needs analysis. This stage has five main aspects, namely (a) front-end analysis, (b) student analysis, (c) task analysis, (d) concept analysis, and (e) learning objectives analysis. The design stage aims to design any media or learning equipment. This stage includes four steps which are: (a) criterion-test construction, (b) the selection of learning media following students' characteristics, (c) format selection, (d) initial design. The development stage aims to produce a revised product according to expert advice. This stage includes: (a) expert appraisal, (b) limited trials among students. The dissemination stage aims to distribute the final product to teachers and students. In this research, the dissemination stage has been done, but it has not been revised

according to expert advice. (Supriatna et al., 2022)

The data source of this research is obtained from a team of experts – teachers and students of East Jakarta. The data collection technique used is an interview guide, validation sheet, and questionnaires. For this research, the data analysis technique uses qualitative and quantitative descriptive analysis techniques. The qualitative analysis technique is used to describe the result of an interview; media and material expert advice validation. The quantitative analysis technique is used to measure media quality levels according to into the table of validity interpretation obtained from the validity sheet. Determining the score uses the modified Likert scale in five-scale criteria.

Table 1. The Assessment Score of Media Expert Validation

No.	Statement	Score
1	Strongly Agree	5
2	Agree	4
3	Neutral	3
4	Disagree	2
5	Strongly Disagree	1

The formulation to count the validity percentagescale is based on the acquired score.

Validity Percentage (%) =

$$\frac{\text{total score}}{\text{max score}} \times 100\%$$

When the validity score percentage is acquired, designing the predicate quality of made product accordingto rating scale of measuring scale continues the step before. The scale is changing the qualitative data to quantitative data transformed in the table 2.

Table 2. Validity Criteria

No.	Statement	Category
1	81%≤score≤100%	Very Valid
2	61%≤score≤80%	Valid
3	41%≤score≤60%	Quite Valid
4	21%≤score≤40%	Invalid
5	0≤score≤20%	Very Invalid

Third Grade of SDN Susukan 09 Pagi in Cracas, media and material expert evaluation along with students' responses after using the media.

1. The Assessment Analysis of Media Expert Validation. There are three steps to analyzing media expert validation assessment which are giving the score assessment, calculating the percentage scale of validity, and transforming the percentage result
2. The Analysis of Learner Response

Questionnaire There are three steps to analyzing learner response questionnaires consisting of making an assessment score, counting a validity percentage, and transforming the percentage scale result into the validity interpretation table. Determining the score uses the modified Likert scale in a five-scale validity criteria.

Table 3. Learner Response Questionnaire Score

No.	Statement	Score
1	Strongly Agree	5
2	Agree	4
3	Neutral	3
4	Disagree	2
5	Strongly Disagree	1

The formulation to count the validity percentagescale of is based on the acquired score.

Validity Percentage (%) =

$$\frac{\text{total score}}{\text{max score}} \times 100\%$$

From the validity percentage result

Table 4. Validity Criteria

No.	Statement	Category
1	≥81%-100%	Very good
2	≥61%-80%	Good
3	≥41%-60%	Average
4	≥21%- 40%	Far
5	≥0-20%	Poor

Result

The product of this research and development result is a learning media of an interactive multimedia learning based on the Articulate Storyline in understanding fairy-tale materials as the content of Indonesian subject for third-grade elementary school students. Furthermore, this research and development use the 4-D model(define, design, development, and disseminate), and the explanation of the development result can be seen below.

1. The Definition Stage

This stage is carried out by problem analysis through literature review and homeroom teachers' interview of Third-grade Class of SDN 09 Pagi in Ciracas, East Jakarta. The teachers have not used the Articulate Storyline, a learning media. During an online learning process, teachers are rarely using zoom meetings as a face-to-face learning process because they tend to use the whatsapp group feature, send video learning links from Youtube, and do the assignment, but the learning activity varies once in a hybrid learning.

Unfortunately, the use of media is limited to Microsoft Powerpoint, Quizizz, or other concrete media.

Moreover, fairy-tale materials in Indonesian learning is taught by watching videos either being read or reading by themselves and has not been facilitated by an interactive multimedia learning. dengan media pembelajaran multimedia interaktif.

Researchers also undertake task and concept analyses. A task analysis aims to identify learner major tasks, and therefore include basic competency as the material of the interactive multimedia in the learning development. A fairy tale is the learning material that is tested. The task analysis of a fairy-tale material task of third-grade elementary school can be seen below.

Table 5. Task Analysis

Basic Competency	Achievement Indicator
3.8 Explaining the message in the fairy tale delivered in oral, writing, and visual does in the purpose of pleasure	3.8.1 Interpreting the message includes the fairy tale delivered by oral, writing, and visual (C5)
4.8 Demonstrating the message of the fairy tale aims to use formal vocabulary along with effective sentences	4.8.1 Demonstrating the message of the fairy tale aims to use formal vocabulary along with effective sentences (P3)

The concept analysis is the step to analyze discussed concepts in an interactive multimedia learning. Concepts included in interactive multimedia are fairy-tale reading materials, animation videos, and interactive games to increase the fairy-tale understanding and literacy. The last stage is the explanation of learning goals as it is the benchmark achievement of students after using the interactive multimedia learning.

Table 6. Concept Analysis

Basic Competency	The Learning Goals
3.8 Explaining the message in the fairy tale delivered in oral, writing, and, visual does in the purpose of pleasure	By using the interactive multimedia of learning media, students can understand the message shown by the media carefully
4.8 Demonstrating the message of the fairy tale aims to use formal vocabulary along with effective sentences	By using interactive multimedia learning media, media learning interactive multimedia helps students to improve their literacy skills

2. The Design Stage

This stage aims to result in an initial interactive multimedia design taking the form of a menu prototype and chosen slide shows. The steps of this design are:

a. Media Selection

In this research, the media developed is interactive multimedia based on the Articulate Storyline. The learning media here must be in line with student characteristics, their learning method, and well- understood language.

b. Format Selection

The size of the interactive media display is 16:9 like the size of Microsoft Powerpoint slide – 34 cm x 19 cm. The types of the fonts are Articulate, Articulate Extrabold, and Montserrat according to the needs of clarity.

c. Initial Design

In this stage, the initial planned design results in an initial draft using the Articulate Storyline, and an html5 website is the output of the learning media that can be accessed online by smartphone or pc. Researchers choose the website because its easily used and quota of internet savings, and students can operate it independently.

The initial draft on multimedia including the opening, the fairy-tale title, audio-reading fairytales, animation videos, interactive games, and reflection columns is shown below.



Figure 1. Opening Slide



Figure 2. Basic Competency Display

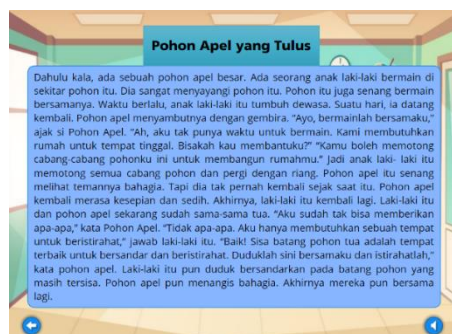


Figure 3. Audio-reading Fairytale Display



Figure 4. Animation Video Display



Figure 5. Interactive Game Display



Figure 6. Reflection Columns

3. The Development Stage

In this stage, it aims to result in the interactive multimedia based on fairy-tale materials of the Articulate Storyline in thematic learning validated based on media expert suggestion and advice and distributed learner questionnaire responses come from a small team trial.

Doing formative evaluation in the aspect of media development becomes the next step. Researchers acquire the result from material and media experts; and a small team trial. From material experts, researchers gain information in the content validity aspect, the presentation aspect, and the feasibility aspect. Furthermore, researchers gain the validity aspect of the learning material design and the presentation.

a. Media Validation

In this stage, the validator of media expert namely Nur Hayati, S.Pd is the teacher of MI an-Nahl. Surveyed aspects are the validity of learning material design and the presentation validity by using 10 pieces instruments. The acquired result is presented below.

Table 7. Media Expert Recapitulation Result

Aspect	Percentage	Category
Design	88%	Very valid
Presentation	92%	Very valid
Mean	90%	Very valid

According to the learning media validity test, the average validation test result is 90% belonging to the very good category. Media experts suggest adding more interesting and

interactive animation and games. Thus, the media validity result of the interactive multimedia is very valid after revising.

b. Material Validation

The validator of the material expert is the same as the validator of the media expert in this stage. The surveyed aspects are the content validity aspect, the presentation aspect, and the feasibility aspect. The acquired result is presented in the table 8.

Table 8. Media Expert Recapitulation Result

Aspect	Percentage	Category
Content	90%	Very valid
Presentation	80%	Valid
Feasibility	80%	Valid
Mean	83,33%	Very valid

Based on the material expert assessment result, the average percentage for each aspect shows 83,33% belonging to the very good category after converting to the conversion table. The material validator suggests adding the fairy-tale general information. Thus, the media validity result of the interactive multimedia is very valid after being revised.

c. Limited Trial

This limited trial carries out on students from SDN Susukan 09 in Ciracas, East Jakarta. Students are randomly selected by the homeroom teacher. While researchers conduct a learning activity using the interactive multimedia, students are encouraged to observe and actively take a role in operating the media, and they must fill out the learner questionnaires afterward. The table 9 shows the result.

Table 9. Limited Trial Recapitulation Result

Aspect	Score	Category
Design	90,28%	Very valid
Media content	81,78%	Very valid
Fairy-tale learning	91,42%	Very valid
Mean	87,83%	Very valid

Based on the limited trial, it obtains 87,83%, belonging to a very valid category. Because of it, the developed media does not need to be revised.

4. The Dissemination Stage

This interactive multimedia dissemination based on the Articulate Storyline fairy-tale's materials carries out to Third-Grade learners from SDN Susukan 09 Pagi in Ciracas, East Jakarta with the help of their teacher. The final result of the product is a .html website so that students can easily access it by their smartphone or pc.

Conclusion

Based on the literature review and this research, acquires the result of the quantitative data on the development of the interactive multimedia learning based on the Articulate Storyline that has been validated and tested on each subject. The result of material and media expert validations obtains 83,33% and 90% for each of them which includes them into a very valid category while learner questionnaires and a small team trial from show 87,83%, and it turns to be in the category of very valid. In line with the analysis result, the interactive multimedia learning based on the Articulate. Storyline is very valid as a learning media for third-grade students.

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