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DEVELOPMENT OF LEARNING MEDIA ASSISTED BY ARTICULATE STORYLINE 3 APPLICATION ON THE CLASSIFICATION OF LIVING THINGS WITH A SCIENTIFIC APPROACH AT JUNIOR HIGH SCHOOL 2 PANTI

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Abstract: Research this aiming for develop and describe validity as well as practicality of learning media based on Articulate Storyline 3 in the material classification creature life with approach scientific at Junior High School 2 Panti. Research using the 4D development model to stage distribution limited. Products validated by experts materials, media, language, and practitioners, then tested its practicality through trial scale small (10 students) class VIII and scale large (32 students) class VII). The validation results show a very high level of validity with average scores from each validator: subject matter experts scored 95.31%, media experts scored 96.25%, language experts scored 100%, and practitioners scored 100%. Furthermore, the practicality test results showed a score of 88.75% in the small-scale test and 91.07% in the large-scale test, which falls into the “very practical” category. With thus, the learning media developed stated to be very valid and practical for used in science learning.

Keywords: Learning Media, Articulate Storyline 3, Classification Creature Life, Approach Scientific, Practical

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INTRODUCTION

Knowledge science is eye lessons learned symptoms natural in a way systematic, based on results observation, experiment, and think logical and analytical (Kartika et al., 2025). Science material has special characteristics, because covers concept of nature abstract, factual, and conceptual, so that requires appropriate learning strategies and media to make it easy understood by participants educate (Mansour et al., 2025). One material in science which is often considered difficult by participants educate is classification creature alive, because demand ability in observe, group, and understand characteristics various creature life (Diani et al., 2019; Huda et al., 2020).

The teacher holds role central in implementation of learning processes in the environment school. Teachers can functioning as a mediator and facilitator (Berglund et al., 2025). The mediator functions as learning media providers and determine which learning media are effective centered on needs and involvement participant educate (Dermawan et al., 2025). As learning process companion, teacher on duty facilitate the learning process. Therefore that, teachers are required play a role active For make the learning process become more fun, challenging, motivating learn, and make learning more interactive and inspiring one of them with develop learning media (Wahab et al., 2021) .

Based on preliminary observations conducted at Junior High School 2 Panti, it was found that most students had difficulty understanding the concept of grouping living things because the learning media used by teachers were still conventional, namely textbooks and student worksheets. As a result, the learning process became monotonous, less interactive, and reduced student interest and active participation. The results of a needs analysis survey conducted on 45 students showed that 95% of students stated that they needed technology-based learning media that contained a combination of text, images, and interactive videos to facilitate their understanding of classification material. Most students also admitted that they were more interested if the learning media was equipped with quizzes or interactive exercises, as this could help them understand concepts through an enjoyable learning experience. These findings reinforce the need to develop innovative and interactive learning media in line with the characteristics of today's students.

In addition to the results of the observation, previous studies have also shown that technology-based learning media are effective in improving student learning outcomes and engagement. Applications make it easier participant educate understand material lesson through a fun approach, so that they No feel fed up with method teaching applied by teachers (Gulo & Harefa, 2022) .

In the application later there is material classification or grouping creature life, matter classification creature life as usual become difficult understood If only depend on books that are verbal in nature, because learning will more varies If using visual media such as animation. Application This designed with simple and easy visualization understood, so that more interesting for participant educate For learn grouping creature alive, in one of the chapter in the eyes science lessons that are usually difficult remember (Putranto, 2012) .

Due to that, researcher feel pushed for create learning media use application *Articulate Storyline 3* with approach scientific which includes material about classification creature live, where material classification creature life have characteristics nature related facts with statement Correct in accordance condition actually (Munifah et al., 2019; Sumarni et al., 2019). While For side approach scientific intended for give understanding to participant educate them so that they can know, understand, and apply What is studied with method scientific. There are five steps in approach this, namely observe, submit questions, collect information, processing information, and convey results (Yumini & Rakhmawati, nd) . Approach scientific designed for give understanding to participant educate them so that they can know, understand, and apply material studied in a scientific way (Putra et al., 2024; Yasin et al., 2020). There are five steps in approach this, namely observe, submit questions, collect information, processing information, and convey results (Yahya et al., 2020).

Related with background behind on researcher have objective for create learning Knowledge Natural Knowledge that is capable interesting interest participant educate and provide interesting learning media as well as practical. With Thus, researchers lift title research " Development of Learning Media" Helped Application *Articulate Storyline 3* on the Classification of Living Things Material with Approach Scientific at Junior High School 2 Panti”. Learning media This designed for give facility to participant educate expected capable in a way independent and create a learning process more interesting, so material delivered by educators can accepted with good. Hopefully, this can increase participation active participant educate in science learning, especially on the material classification creature life.

METHOD

Study This apply method study development (RnD) with objective create product educational. Digital learning media developed use *Articulate Storyline 3* will tested validity and practicality. Testing product will implemented at Junior High School 2 Panti to assess the quality of learning media that can used both online and offline. Methodology study development this adopting a 4D model that includes four stages sequentially: Define, Design,

Develop, and Disseminate. Considerations use of this model located on the framework structured work in a way logical and easy implemented, making it a perfect fit for study ongoing development done. Illustration following shows the flowchart of the 4D model in RnD context:

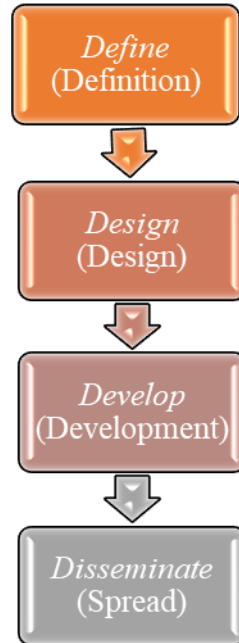


Figure 1. 4D Development Scheme (Thiagarajan & Sivasailam, 1974)

Study This adapting the 4D model as runway development learning media products interactive. The model that was originally put forward by Thiagarajan, Semmel, and Semmel (1974) through four phase Main: Define, Design, Development, and Disseminate. Research and development process follow channel Work four stage (Thiagarajan & Sivasailam, 1974) .

a. Stage (Definition)

At the stage *Define*, researcher do identification and formulation criteria essential for development of learning media assisted *Articulate Storyline 3*, with consider its relevance to need Study student.

b. Stage (Planning)

Design phase is stage determination forms of learning media in the form of application interactive developed through *Articulate Storyline 3*. In designing learning media based on application this, there is a number of necessary procedures implemented in a way sequentially that is compile material sequence, selection of learning media, design beginning.

c. Stage Develop (Development)

Development Phase aiming finish product end of learning media based on approach scientific after through the revision process based on evaluation experts and test results field with participant educate. This process implemented in two stages main that is product initial, assessment expert and trial development.

d. Disseminate Stage (Spreading)

Final phase in development device learning using the 4D model is stage dissemination. At the stage This product research in the form of learning media application load material classification of living things is distributed with method give to the science teacher at Junior High School 2 Panti as practitioner.

Data analysis was conducted using two approaches, namely data validation analysis and data practicality analysis. Data validation analysis is used to determine the validity level of the media based on the results of the validators' assessments. Data is obtained from validation sheets containing Likert scale assessments of 1–5. The assessment results are converted into percentages using the following formula:

$$P = \frac{F}{N} \times 100$$

Explanation:

P : Final Score

f : Score Obtained

N : Maximum Score

The results of the validation percentage interpretation are categorized according to Lovieanta Arriza (2020) in **Table 1**.

Table 1. Validity Level Criteria

No.	Value (in %)	Criteria
1.	$80\% \leq P \leq 100\%$	Very Valid
2.	$60\% \leq P < 80\%$	Valid
3.	$40\% \leq P < 60\%$	Sufficiently Valid
4.	$20\% \leq P < 40\%$	Less Valid
5.	$0\% \leq P < 20\%$	Not Valid

Practicality data analysis was conducted based on the results of student questionnaires regarding the use of learning media. The average score was calculated using the same percentage formula, then categorized as **Table 2**.

Table. 1 Criteria for Student Response

No.	Value (in %)	Criteria
1.	$80\% \leq P \leq 100\%$	Very Practical
2.	$60\% \leq P < 80\%$	Practical
3.	$40\% \leq P < 60\%$	Quite Practical
4.	$20\% \leq P < 40\%$	Less Practical
5.	$0\% \leq P < 20\%$	Not Practical

FINDING AND DISCUSSION

Trial Data Presentation

Researcher has do analysis problems and analysis need to participant educate, the results of which show that the supporting media necessary science learning A applications that run on the Android platform or PC in it load a number of component covering materials, videos, LKPD, and quizzes. Research and development This implemented at Junior High School 2 Panti. Validation done by the team experts consisting of from lecturer expert material, lecturer media expert, expert language, as well as a science teacher as practitioner assessor towards learning media. As for the subject study involving student class VII.

Study This applying procedural models adapted step by step from Thiagarajan's 4-D model (Define, Design, Develop, Disseminate). However, the model modified for adapt with needs and context research. Due to limitations time and cost, stage Disseminate only done in a way limited.

Application This designed special for support learning Knowledge Natural Science, with focus on the material Classification of Living Things. Based on results research that has been implemented, findings main can outlined as following:

1. Stage Define (Definition)

Learning media development process with *Articulate Storyline 3* begins with Define stage as step determinant, where There are five components main, namely:

- a. Preliminary -Final Analysis: Do analysis to situation beginning learning as well as formulate expected achievement from the learning process at the stage this, implemented a series activity in the form of interview deep with educators and participants educate to identify various obstacles that arise in the learning process in the environment school.

- b. Analysis Students: Understanding deep to characteristics and needs participant educate is base important in development of appropriate and effective learning media. In the stage this, researcher carry out activity interview to a number of participant educate through questionnaire analysis need for identify the problem they have face. The result of questionnaire the show that majority participant educate Class VII at Junior High School 2 Panti tends to bored with a learning process that contains about material just especially on the material classification creature alive, because they consider it difficult, facing difficulty in the learning process when only depend on teaching materials in the form of book text and sheet work., and feel that learning the not enough interesting and tending boring.
- c. Analysis Concept: Formulating concepts the main thing that will delivered through the developed learning media. Analysis draft required for identify draft the main thing that will be delivered. In the research this, concept analysis done on the material classification creature life, selected by researchers based on Achievements Learning Objectives and Learning Objectives Flow from curriculum independence implemented at Junior High School 2 Panti.

2. Stage Design (Design)

Stage Design aiming for create design the product that will be implemented. At the stage this, researcher develop a application learning assisted application *Articulate Storyline 3* which produces learning media interactive with approach scientific that can applied in science learning on material classification creature life.

- a. Compilation Test Reference Benchmark (Constructing *Criterion-Referenced Test*)
Compilation standard test is connecting steps stage definition (*Define*) with stage Design This is a step beginning for evaluate ability base participant educate.
- b. Media Selection
Selection of learning media done for determine the most appropriate media with characteristics materials and needs participant educate.
- c. Design (Initial *Design*)
Design beginning is design overall device necessary learning completed before conduct validity and development tests. The purpose of design beginning This is for produce product in the form of prototype based on analysis curriculum and materials. Design beginning media products started with flowchart creation. **Figure 2** explain channel Work creation of developed learning media using Articulate Storyline software.



Figure 2. Story View Media

Designing media slide show is done with gather various component like appropriate images, music and text with learning media design which is as shown in **Figure 3**.



Figure 3. Media Components

3. Stage Development (Development)

Stage Development aiming for produce product end from learning media based on technology in the form of application after through the revision process based on input from experts and trial data products by participants educate.

a. Subject Matter Expert Validation

$$\begin{aligned} \text{Material Validator Value} &= \frac{61}{64} \times 100\% \\ &= \frac{6100}{64} \% \\ &= 95,31\% \end{aligned}$$

The validation results show that the developed learning media products have a very high level of feasibility. The average validation score from subject matter experts was 95.31%, which falls into the highly valid category, indicating that the content and presentation of the material are in line with the basic competencies, indicators, and learning objectives.

b. Media Expert Validation

$$\begin{aligned}\text{Media Validator Values} &= \frac{77}{80} \times 100\% \\ &= \frac{7700}{80} \% \\ &= 96,25\%\end{aligned}$$

The validation score from media experts was 96.25%, which also falls into the highly valid category, indicating that the appearance, navigation, interactivity, and visual clarity of the media have met the criteria for digital learning media.

c. Language Validation

$$\begin{aligned}\text{Language Validator Values} &= \frac{48}{48} \times 100\% \\ &= \frac{4800}{48} \% = 100\%\end{aligned}$$

The validation results from language experts obtained a score of 100%, which falls into the highly valid category, indicating that the use of language in the media is in accordance with good and communicative linguistic rules.

d. Validation Practitioner

$$\begin{aligned}\text{Evaluation practitioner} &= \frac{56}{56} \times 100\% \\ &= \frac{5600}{56} \% \\ &= 100\%\end{aligned}$$

Meanwhile, learning practitioners (science teachers) gave a validation score of 100%, which is also considered highly valid, indicating that the media is relevant to students' needs and easy to implement in the classroom learning process.

4. Stage *Disseminate* (Spread)

Stage final in media development is stage distribution. This phase aiming for to disseminate product study in the form of developed learning media through application *Articulate Storyline 3*.

The results of the stages and tests that have been carried out in the development of LKPD state that the learning media assisted by the Articulate Storyline 3 application was compiled and refined through a series of validation processes by subject matter experts, media experts, language experts, and learning practitioners. This process was carried out to ensure that the media developed was truly suitable for use in teaching and learning activities. The validation results show a very high level of suitability, with a subject matter expert score of 95.31%, indicating that the content and presentation of the material are in line with the basic competencies, indicators, and learning objectives (Huda et al., 2019; Saregar et al., 2025). The media expert validation score of 96.25% shows that the appearance, navigation, interactivity, and layout of the media are in line with the characteristics of the students and support effective learning activities. Meanwhile, a score of 100% from language experts indicates that the language used is communicative, appropriate, and easy for students to understand. In addition, practitioner reviewers (science teachers), who also achieved a score of 100%, confirmed that this media is highly relevant to the learning context in the classroom, easy to operate, and can help teachers facilitate a more interesting and meaningful learning process.

The results of the development of learning media assisted by Articulate Storyline 3 are in line with the research by Nasution & Adlini (2025), which shows that interactive media based on Articulate Storyline can increase student motivation and concept understanding because of its attractive and interactive presentation. Research by Diniyati & Mastoah (2025) also reinforces that the use of animation-based digital media and independent navigation can help students learn more actively and not only rely on teacher explanations. However, some previous studies have not specifically integrated scientific approach steps into the learning structure presented in the media.

The scientific approach involved in this learning media plays an important role in encouraging students to actively participate in the learning process (Aldi et al., 2025). Through the stages of observing, questioning, gathering information, reasoning, and communicating, students not only receive material passively, but are also invited to explore concepts independently and systematically (Yunita et al., 2025). In the observation stage, the media provides images, videos, and animations that visualize the differences in the characteristics of living things in a realistic manner. This stage is facilitated through provocative questions that stimulate students' curiosity. Information gathering is carried out through digital worksheet exploration activities and interactive material in Storyline. Next, in the reasoning stage, students are invited to draw conclusions based on their

observations and the information they have obtained. Finally, the communication stage is realized through activities such as presenting the results of living things grouping or submitting answers to interactive quizzes in the application. This systematic integration makes the learning process more contextual, meaningful, and in line with the curriculum requirements that encourage the development of higher-order thinking skills (HOTS).

This study has advantages over previous studies because the media developed not only meets the requirements in terms of material, appearance, language, and practicality of use, but also explicitly integrates the scientific approach (observing, questioning, gathering information, reasoning, and communicating) into the learning flow. This confirms that the media not only functions as a tool for presenting material but also as a means of supporting learning activities based on scientific process skills (Pratama et al., 2025). Thus, this media has the potential to be more effective in increasing student participation, conceptual understanding, and scientific thinking skills at Junior High School 2 Pantj.

Therefore, based on the validation results and comparison with previous studies, it can be concluded that the learning media assisted by the Articulate Storyline 3 application that was developed is very feasible and superior for use in teaching the material on the Classification of Living Things at Junior High School 2 Pantj. The advantages of this media lie not only in the feasibility of its content, appearance, language, and practicality, but also in the integration of scientific approach steps that encourage students to actively observe, question, gather information, reason, and communicate their learning outcomes. With these characteristics, this media has great potential to increase students' learning motivation, conceptual understanding, and scientific thinking skills, thereby supporting more meaningful and effective learning.

CONCLUSION

The final result of this development is a learning medium that has undergone a validation process by subject matter experts, media experts, language experts, and education practitioners, and has received positive responses from students. Based on the validation results, the scores obtained were 95.31% from subject matter experts, 96.25% from media experts, 100% from language experts, and 100% from practitioners, all of which are classified as highly valid. This shows that the Articulate Storyline 3-based learning media that was developed has met the eligibility criteria in terms of content, appearance, language, and applicability in teaching and learning activities. In addition, this product also meets the eligibility criteria as science learning media for grade VII at Junior High School 2 Pantj.

Analysis of readability test data from 10 eighth-grade students at SMPN 2 Panti shows that the learning media assisted by Articulate Storyline 3 scored 88.75%, which is classified as highly practical, while a large-scale test of 32 students scored 91.07%, also in the highly practical category. These findings prove that the Articulate Storyline 3-based learning application developed by the researcher has a very high level of validity and practicality, making it suitable for use as an innovative learning medium that supports the application of a scientific approach in improving students' understanding and interest in learning about the Classification of Living Things.

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