
Kokodifla: Learning Media To Train Concepts Understanding In Human Respiratory System Materials 5th Grade

Ilva Althoviyah¹, Agus Mulyana², K. Sathis Kumar³

^{1,2} Universitas Pendidikan Indonesia, Percobaan Street, Cileunyi, Bandung 40625, Indonesia

³ Alagappa University, India

Coressponding Author. E-mail:

¹ ilvaalthoviyah485@gmail.com

² goestmulyana@upi.edu

³ edusathish@gmail.com

Abstract

Science learning tends to memorize more and sometimes does not use media. Less interesting learning often makes students feel bored and even students have no interest in developing an attitude of curiosity. The learning style that fits the characteristics of fifth grade students is visual because students prefer and are interested in pictures or illustrations. The KOKODIFLA learning media is in the form of media that is collaborated between digital comics and flashcards which contain material on the human respiratory system. This study aims to train students' understanding of concepts by using the week experimental research method of the one shot case type through pre-tests and post-tests. This research was conducted in a school located in Sumedang Regency, West Java. Based on the results of the study, the translation aspect with a gain score of 0.36 was drawn low, interpretation with a gain score of 0.67 was moderate and extrapolation 0.92 was considered high. Thus it can be concluded that the translation aspect is lower than the interpretation and extrapolation aspect in students' understanding of concepts.

Keywords: Instructional Media, IPA, Concept Understanding

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INTRODUCTION

Learning is a process of interaction between teachers and students in a learning environment by involving learning resources in it. Learning is a process to help students learn well. The learning process will be experienced by everyone throughout life and can apply at any time (Nursalam, 2020). Learning in elementary school there are subjects that need to be given to students, one of which is Natural Sciences (IPA). Science is one of the subjects that is directly related to the real life of students. The science learning process connects students' prior knowledge with the material to be studied. Science learning is able to improve students' thinking processes and understand a material concept so that students can apply it to everyday life. Natural Science (IPA) is the meaning of nature and various phenomena or characteristics that are packaged into a collection of theories and concepts that go through a series of scientific processes carried out by humans (Ayu Sri Wahyuni, 2022)

The role of the teacher facilitates learning by providing a variety of experiences. Teachers obviously have to provide opportunities for students to explore and experience, by doing so encouraging new understandings of students. Piaget emphasized opportunities to allow learners of different cognitive levels to work together and encouraged less mature students to work together forward to create understanding (Lefa, 2014). Piaget stated that student development is at a concrete operational stage that requires direct experience and objects or objects. Through direct experience, students will experience meaningful learning and will be better understood by students because students experience for themselves what will be learned. Elementary school students prefer to use concrete objects, this was stated by Piaget, in the formal operational phase students' thinking skills can already be done abstractly (Hayati, 2021).

The importance of understanding students' concepts on a material certainly needs to be trained because if students already understand the concepts then the students can explain back according to their understanding and easily apply them in everyday life (Asri, 2019). Understanding a learning concept certainly requires a good learning process. Concept understanding is an individual's ability to understand a particular concept (Purnama & Pramudiani, 2021). A student already has an understanding of the concept if the student has

grasped the meaning of a concept. A student who has an understanding is able to explain back the material that has been learned based on his own understanding (Salim Nahdi dkk., 2018). To achieve science learning that has meaning and meaning, teachers must be able to make students involved in the learning process directly equipped with learning media that are able to train each student process (Rambe & Yarni, 2019).

Material related to the human respiratory system is abstract and related to complex functions and processes, this material includes material that requires a variety of learning media so that students can better understand the concepts taught (Wahyu dkk., 2020). In its implementation, it is often found that in providing material on the human respiratory system, teachers only source from books after which students record them in notebooks. The learning process is only lectures, memorization or reasoning, and assignments, in this activity teachers sometimes do not use learning media for this abstract material (Nuryani & Surya Abadi, 2021). Less interesting learning often makes students feel bored even students have no interest in developing an attitude of curiosity. One of the most important components in the learning process is the learning media. In clarifying the meaning of the message conveyed to achieve learning and educational goals, tools or intermediaries are needed that can help the learning process called learning media (Kurniawan dkk., 2019). The use of learning media indirectly affects students' interest in learning materials, according to Putra & Milenia (2021)

Learning media is an intermediary or introduction, learning media emphasizes the position of the media as a vehicle for distributing messages or learning information to condition students to learn (Susilana & Riyana, 2008).

According to Levi & Lentz in Rohani (2019) Presenting the function of teaching media, namely the attentional function, this media can attract and direct students' attention to concentrate on the material. According to Furoidah, (2020) Learning media is used in the context of efforts to improve the quality of learning.

Seeing this phenomenon, new innovations are needed in learning, namely with the collaboration of digital comics and flashcards (KOKODIFLA) which aims to determine the influence of these learning media and train understanding of concepts on the material of the

human respiratory system grade V elementary school. The collaborative learning media will later provide a very interesting learning media concept and can foster student interest in participating in classroom learning (Hasanudin, 2020). The implication of this collaboration is a process of teaching and learning activities that make it easier for students to work together and guide each other (Khomsah & Imron, 2020). In flashcard learning media made by students because students can express various kinds of ideas according to their creativity and add other content (Pan et al., 2022).

Therefore, by making flashcards independently students learn directly according to their experience. Comics that have been packaged into digital form are one of the intermediaries for delivering learning information to facilitate the understanding of abstract material into concrete (Megantari et al., 2021). This is because comics can teach and develop students' abilities and can stimulate students in learning (Riwanto & Wulandari, 2018). The characteristics that comics have as a visual medium are characters, word balloons, expressions (Aprilia et. al , 2021). According to Madino in Ratnasari & Ginanjar, (2019) There are several elements of comics, namely cover, page, and double-spread page.

METHOD

This research was conducted in one of the schools. In this study, researchers used a one-class week experiment method with a type of one shot case, namely pre-test and post-test (Astuti, 2015). In pseudo-experimental research, pre-test and post-test are conducted to measure the acquisition and treatment of the test in one class.

Pre-test	Treatment	Post-test
O ₁	X	O ₂

Figure 1. Research Design

The initial test before treatment is given to students in the form of a test in the form of multiple choice, after that students are given treatment using KOKODIFLA learning media and in the final test after being given treatment the student's development is reviewed. In this study only used one group without any comparison group. One shot case design according to Arikunto (2013) The design of this

study only held a one-time treatment that was estimated to have an effect, then given a post-test. The data collection techniques used in this study were tests, questionnaires, observations, and documentation. Research instruments in the form of pre-test and post-test science material of the human respiratory system in the form of multiple-choice questions by referring to translation, interpretation, and extrapolation indicators. The data analysis technique uses Likert scale for media feasibility test as well as finding GAISN scores to measure improvement in process skills between before and after learning. The calculation of data analysis carried out in this study used the help of the Statistical Program for Social Science (SPSS). Researchers also took data on student and teacher responses to determine the response of the learning media used.

RESULTS AND DISCUSSION

Digital comics and flashcard collaboration learning media (KOKODIFLA) is a digital comic media in which there is material about the human respiratory system. The complete media profile will be presented at the following link https://drive.google.com/file/d/1SF3Wkb5mqfRrh60u7jn_aLe0ifFfj_h/view?usp=drivesdk. The media profile to be tested to see the impact on understanding the concept can be observed in the following figure.



Figure 2. Infographics, learning media videos, and the use of learning media

The study was conducted during four school meetings. The first meeting was conducted pre-test, the second meeting was conducted learning, the third meeting was for post-test and the fourth meeting was for teacher and student response questionnaires. The material presented is science subjects regarding the human respiratory system. In its implementation, the learning model used is cooperative learning. The results of pre-test and post-test scores can be seen in the following table 1.

Table 1. Recapitulation of Pre-test and Post-test Values

Indicators	Pre-test	Post-test	Gain Score
Translation	52,8	70	0,36
Interpretation	40	80	0,67
Extrapolation	75,9	98	0,92

Table 2. Gain Score Criteria

Interval	Criterion
$G \geq 0,7$	Tall
$0,3 \leq G < 0,7$	Keep
$G < 0,3$	Low

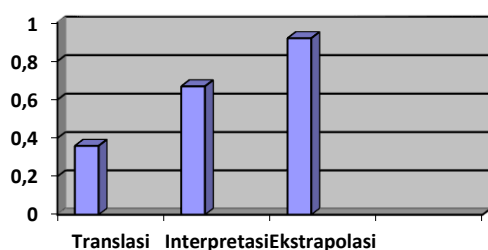


Figure 3. Concept Understanding Graph

Based on the table above, the question indicator in translation has an average of 52.8, which is different from when the post-test results increase until the average achieved is 70, in this case the gain score becomes 0.36 and is categorized as medium. Translation is the ability to transform data presented in one form into another. The interpretation indicator is the ability to formulate new views, having an average of 40 at the time of pre-test and 80 at the time of post-test so that a Gain score of 0.67 is categorized as moderate, while the extrapolation indicator is the ability to predict existing tendencies according to certain data by expressing consequences and implications that are in line with the conditions described, has an average of 75.9 at the time of pre-test and 98 at the time of post-test and a Gain score of 0.92 is categorized as tall. From the diagram above, it can be seen that the translation aspect is inferior to interpretation and extrapolation. As for (Harefa dkk., 2022).

Before research into the field, the learning media used has been validated by experts with the aim of obtaining an assessment by considering the feasibility of the media made. The application of KOKODIFLA learning media to train concept understanding in grade V students

received responses from respondents, namely teachers and students, in the following table 3.

Table 3. Student Response Validation Assessment

Aspects	Number of Statement Items	Ideal Score	Score Obtained	Percentage
Contents/materials	2	200	190	95%
Ease	2	200	185	92,5%
Media quality	3	300	290	96,6%
Media use	2	200	195	97,5%
Rata-rata				95,4%

In the student response questionnaire, the content/material indicator obtained a score of 190 out of an ideal score of 200 with an indicator percentage of 95%. The ease indicator obtained a score of 185 out of an ideal score of 200 with a percentage of 92.5%. The media quality indicator obtained a score of 290 out of an ideal score of 300 with a percentage of 96.6%. Then for the media use indicator obtained a score of 195 out of the ideal score of 200 with a percentage of 97.5%. So the average score on the student questionnaire is 95.5%.

Table 4. Teacher Response Validation Assessment

Aspects	Number of Statement Items	Ideal Score	Score Obtained	Percentage
Language	2	72	65	90,2%
Ease	2	72	71	98,6%
Contents/materials	3	108	104	96,2%
Kualitas media	2	72	70	97,2%
Rata-rata				95,5%

Based on the table 4 regarding teacher response questionnaires, language indicators obtained a score of 65 out of the ideal score of 72 out of 9 teachers with a percentage of 90.2%. The ease indicator obtained a score of 70 out of an ideal score of 72 with a percentage of 98.6%. The content/material indicator obtained a score of 104 out of an ideal score of 108 with a percentage of 96.2%. Then for the media quality indicator

obtained a score of 70 from the ideal score of 72 with a percentage of 97.2%. Therefore, the average teacher response questionnaire obtained a score of 95.5%. Based on the results of respondents, KOKODIFLA learning media has advantages and disadvantages. The advantages of this media are that it can be used as a medium to improve student literacy, learning media including differentiated media because learning activities become different from usual, learning media are easy to use and easily accessible anywhere. The shortcomings of this media are that the material delivered is not too much. KOKODIFLA learning media can add.

CONCLUSION

Based on the results of research and discussions that have been described, it can be concluded that KOKODIFLA learning media is suitable for use in learning, especially to improve understanding of concepts in students. In research there are differences between aspects of translation, interpretation, and extrapolation. The translation aspect has the lowest score between the two aspects, it can be seen that the ability to change data presented in one form to another is not easy. Based on the accumulated assessment results, KOKODIFLA media received a good response with the interpretation category "Very Good". Then, media that have received an assessment can be tested according to the direction and input of experts. In carrying out learning on science content, KOKODIFLA media can be used so that learning is not only centered on teachers but on students. Students can experience learning directly because students follow the process starting from reading.

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