



Development of Focusky Multimedia-Based Comics to Increase Students' Learning Interest in Science Subjects

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Abstract: This study aims to find out the process of developing comics based on focusky multimedia. To determine the feasibility of focusky multimedia-based comics to determine the effectiveness of focusky multimedia-based comics to increase student learning interest. This research is an R&D development research or (Research and Development) model of the Robert Maribe Branch using the ADDIE development model. Data collection techniques used are observation, interviews, documentation and questionnaires. Qualitative data analysis was carried out by processing data obtained by validation questionnaires from media experts, material experts, linguists and peer assessments. While the quantitative data were processed by analyzing the pre-requisite normality test and paired sample t-test. The subjects in this study were 20 students of SD Al-Qur'an Rodlotut Tholibin Metro Lampung. From the research results, digital comic media was developed using the ADDIE model, namely Analysis, Design, Development, Implementation, Evaluation. The quality and feasibility of developing comics based on multimedia focusky were obtained from the validation assessments of media experts, material experts, linguists as well as assessments from colleagues, namely with ideal percentages of 88, 90, 86 and 86%, which were categorized as "very feasible" and can be considered. implement in learning. After analyzing the data obtained, it was successful in developing multimedia-based comics focused on natural science material, sub-theme of how the body processes food. Based on the results of the research, the paired sample t-test (one group sample test) with the results on students' interest in learning obtained a Sig. (2 tailed) of 0.000 < 0.05. With an average pretest score of 53.30 it increases the results of posttest learning interest with an average score of 78.60.

Keywords: Comic Development; Interest in Learning; Multimedia Focusky

Introduction

Natural Sciences is one of the fields of study taught at the Elementary School level. With science learning students can get to know the surrounding environment and all its contents, through various activities carried out by students in learning activities (Lusidawaty et al., 2020). With the diversity of characters in each student, it becomes a challenge for the existing academic community. The learning process should use a constructivist approach or Student Center Learning (Hirumi, 2002; Krahenbuhl, 2016; Suh & Ahn, 2022), namely a learner-centered learning process. Students are required to be active in building knowledge and concepts individually or in groups. In the Student

Centered Learning learning approach, teachers must be able to carry out their roles properly.

The teacher is not only a teacher, but also a motivator, facilitator and innovator (Putri et al., 2019). The teacher's role is not only to teach, but to assist students in solving problems when they experience difficulties in the learning process (Minsih & Galih, 2018). The teacher is the motor of learning that dynamizes the learning process in achieving national education goals (Matlani & Khusnaifi, 2019). A teacher must be able to create a learning atmosphere that is in accordance with the characteristics of students and the character of the material presented in the form of learning models equipped with supporting learning resources and media (Irfan et al., 2019)

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In the science learning process, it is necessary to have media that can support the implementation process so that learning is more interesting and can achieve learning objectives so that it can develop student creativity. The teacher's role apart from being a motivator, facilitator also plays a role in innovating in developing media that can support the learning process, so that the learning process is not boring, especially in science subjects, the teacher must be able to create media that can support the learning process so that learning objectives can be achieved. Learning media are all forms and means of conveying information that are made or used in accordance with learning theory, can be used for learning purposes in conveying messages, stimulating students' thoughts, feelings and willingness so that they can encourage intentional, purposeful and controlled learning processes (Eli Yuliansih & Wahidy, 2021; Nurmala et al., 2021; Rofiah et al., 2020).

Science learning in elementary schools is the initial foundation that will become a provision for students, however, in reality there are still many problems found in learning science in elementary schools (Ginns & Watters, 1999; Milner et al., 2012). Based on an interview conducted by the researcher with a class V student on September 12 2022 at Al-Qur'an Elementary School, it was found that students found it difficult to understand the basic concepts of natural science in the matter of how the body processes food. Learning science in class V, SD Al-Qur'an is still dominated by the lecture method. The learning process also does not use a variety of learning media and still uses teaching materials that focus on module books only so that the implementation of learning has not been able to increase the enthusiasm and interest in learning students in learning. This was shown by more than 40% of fifth grade students getting daily tests below the minimum completeness score of 75. Based on the results of interviews with the fifth grade teacher at Al-Qur'an Elementary School on September 8 2022, science learning in class is still dominated by lectures so that the material can be delivered in accordance with the time allocation available. In addition, time and cost constraints are an obstacle to creating and providing fun learning media for students. From the above problems the teacher must have creativity in delivering material in the learning process.

Focusky multimedia-based comic learning media is a solution to foster student learning interest in taking science lessons, especially in the material of how the body processes food in class V students. With media appearance that attracts students' attention Learning media packaged in comic form can be used as a variation of media learning. This comic media has the potential to be preferred by students, this is because the images in comics can animate the rows of written text that accompany them. With pictures, long and complicated explanations of the text or learning topics read can be

easier to understand and remember. Even students can understand and imagine in advance what is actually the essence of the topic of the lesson read through the existing pictures. Learning material that is packaged in a clear storyline will make the material last longer in students' memories. So, besides being able to increase student learning motivation because of its interesting presentation, comics also have the potential to increase student understanding (Arini et al., 2016; Hermita et al., 2020; Indaryati & Jailani, 2015; Jee & Anggoro, 2012; Spiegel et al., 2013). The presentation of comics as learning media must be in accordance with the characteristics of comics and the characteristics of learning media. As a learning medium, focusky multimedia-based comics are included in the print and digital media groups. The position of comics can replace textbooks or as a companion to textbooks in the learning process (Budiarti & Haryanto, 2016).

Focusky is a presentation application that can be used as a learning medium by combining zoom and path features so that it can attract students' attention in the teaching and learning process. Focusky is one of the applications that is recommended for educational researchers in developing learning media with easy use but the results are very interesting, besides that Focusky is powerful and interesting both online and offline (Agatha & Yogica, 2019). Seeing the gap as explained above, the researcher wants to develop an interesting learning media which is of course an alternative problem solving so that it can help teachers and students to make changes and improve in an effort to foster student interest in learning according to the expected learning objectives. The use of focused multimedia-based comic media in the science learning process in class V can be a breakthrough for educators, especially in elementary schools, increasing conceptual understanding and creativity, so that students are interested in paying attention to the teacher's explanation, helping students receive information with all the senses. This is the initial basis for the importance of conducting research on "Development of Focusky Multimedia-Based Comics to Increase Students' Learning Interest in Science Subjects for Grade V Elementary Schools".

Method

The type of research used is Research and Development (R&D). according to Sugiyono research method is a research method used to produce certain products and test the effectiveness of these products (Sugiyono, 2013). The development in this study uses the R&D model, through the ADDIE design. The ADDIE model is a research model commonly used to develop or validate products used in education and (Neolaka, 2014). The subjects in this study were 20 students of SD Al-Qur'an Roudlotut Tholibin Metro Lampung. Data

collection techniques in the form of observation, interviews, questionnaires and documentation. Data analysis using the Likert scale technique. Research and development is a method used to produce certain products and test the effectiveness of these products (Sugiyono, 2019).

The ADDIE model consists of five stages, namely Analysis, Design, Development, Implementation, Evaluation (Cahyadi, 2019; Rahayu & Kuswanto, 2020; Sari & Erita, 2021). The data analysis technique in this study is using qualitative, quantitative, and product feasibility analysis techniques. Qualitative data analysis was used to analyze data obtained from experts (media, language, materials), and field test subjects, namely students and educators in the form of responses, input, and suggestions as considerations for improving Focusky multimedia-based comic media in science learning. Quantitative data analysis was obtained from the results of product feasibility tests obtained from assessment questionnaires and in the form of measuring product effectiveness as well as the results of learning achievement tests (Sanjaya, 2016).

Qualitative data were obtained from input, comments, and suggestions from media experts, material experts, and linguists. Meanwhile, quantitative data was obtained from the results of a media, material, and language expert questionnaire. As for the analysis of qualitative data and quantitative data from the results of completing the questionnaire by media experts, material experts, and language. Thematic teaching materials based on local culture are first tested by media experts, material experts and language experts before being used by students. The rating scale used is a Likert scale with score categories 1 to 4. Score 1 category "Very Poor", score 2 category "Not good", score 3 category "Enough", score 4 category "Good", and score 5 category "Very Good". Instruments that use a Likert scale are made in the form of a checklist when they are filled out. The score obtained through the due diligence assessment using a questionnaire can be calculated using the Formula 1.

$$NP = \frac{\text{Gain Score}}{\text{Maximum Score}} \times 100 \tag{1}$$

The level of product feasibility is carried out with parameters very feasible to not feasible from the product being developed. The greater the value of the results of data analysis, the better the level of feasibility of the development results. The categories of criteria for making decisions in the validation of Focusky multimedia-based comic learning media (Table 1).

Quantitative data is used in data processing from the validation produced by media experts, material experts, linguists and colleagues for the development of media products. When the validation has been completed, it is collected and converted into a

quantitative form based on the assigned score weight. Besides that, to analyze the effectiveness of the product, the researcher carried out a treatment, namely holding a pre-test and post-test. Data analysis in the study after the product feasibility test was carried out using SPSS assistance with the normality test and hypothesis testing to find out the results of the independent sample t-test.

Table 1. Interpretation of the Validity of Focusky Multimedia-Based Comics

Ideal Presentation (%)	Interpretation Criteria
81-100	Very Worth it
71-80	Worthy
61-70	Pretty decent
51-56	Not worth it
0-50	Not feasible

Result and Discussion

Focusky Multimedia-Based Comic Media Development Procedure

At the development stage, local culture-based thematic teaching materials were tested on fourth grade students at Al-Qur'an Elementary School. The development flow in this research is the ADDIE development model as follows.

Analysis

At this stage, the researcher made pre-research observations on the learning process in class. The science learning process for class V SD-Al-Qur'an which is still focused on printed books and the use of teaching materials that have not varied is one of the factors for the low interest in learning. After finding potential problems in the learning process, the next step is to collect information from both the teacher and students related to the potential problems that exist. The data obtained from observations in this learning process is then used as a reference in designing comics.

Design

After information about potential problems is obtained through observation of the learning process in class, the next step is to design or pre-design a comic media product based on focusky multimedia. The following are the steps in designing Focusky multimedia-based comics: Making a concept map or comic framework in accordance with the results of the analysis that has been done, designing the appearance of the comic, selecting and arranging images, text size and material presented and finalizing the compilation of the comic.

Development

After determining the initial design, then the researcher begins to develop a temporary initial product form (hypothesis) which will later be validated by media

experts. Focusky multimedia-based comic media that is made complete and as good as possible, such as the big titles of science comics, characters taken from Spongebob characters, storylines, material that has been adapted to needs, namely in natural science subjects, the sub-theme of how the body processes food and there are practice questions. The following is a visualization of focusky multimedia-based comic creation



Figure 1. Opening View



Figure 2. Display Content Material

Implementation

At this stage it is the application or realization of the development of focusky multimedia-based comics. The trial focusky multimedia-based comic media was carried out by fifth grade students of SD Al-Qur'an which was conducted on January 12, 2023. This trial was carried out in schools with a total of 34 views. Besides that, the researchers also printed comics in the form of sheets of paper. Focusky multimedia-based comic media that has been developed is then tested or applied in the science learning process with the sub-theme of how the body processes food. The learning process is carried out in class V in the school. The views of all students are directed towards the LCD projector screen that has been provided in front of the classroom. Can be seen in the image below when implementing using a comic based on multimedia focusky.



Figure 3. Display of Focusky Multimedia-Based Comic Development Implementation Activities

Evaluation

At this stage the researcher revised the product after field trials, namely improving and perfecting focusky multimedia-based comics based on input and suggestions on the results of field trials.

The validation of media experts on the development of focusky multimedia-based comics was carried out by 3 media experts namely Dr. Choiruddin, M.Pd as a lecturer at the IAIM NU Metro Lampung tarbiyah faculty, Dr. Agus Setiawan, M.Pd as the head of the IAIM NU Metro Lampung mathematics education study program, and Dr. Mispani, M.Pd as Chancellor of IAIM NU Metro Lampung. On January 4, 2023 the results of the assessment carried out by media experts by filling out a questionnaire received an assessment namely. The results of the assessment by 3 media experts on product quality obtained scores, namely media expert 1 with 64 points, media expert 2 with 66 points and media expert 3 with 68 points with a final number of 199 then an average of 66 with a final percentage of eligibility of 88%.

Material Expert Validation for the development of focusky multimedia-based comics was carried out by 3 material experts, namely Nurul Aisyah, M.Pd as a lecturer in Islamic elementary school teacher education IAIM NU Metro Lampung, Nur Laili, M.Pd as a lecturer in Islamic education teacher IAIM NU Metro Lampung, and Dr. Muhamad Yusuf, M.Pd as the dean of the IAIM NU Metro Lampung tarbiyah faculty. On January 4, 2023, the results of the assessment by 3 material experts on product quality obtained scores, namely material expert 1 of 56 points, material expert 2 of 56 points and material expert 3 of 51 points with a final total of 163 then an average of 54 with the final percentage of eligibility is 92%.

The validation of linguists on the development of focusky multimedia-based comics was carried out by 3 linguists, namely Masrurotul Mahmudah, M.Pd as the head of the IAIM NU Metro Lampung primary school teacher education study program, Muhammad Ngali Zainal Makmun, M.Pd as IAIM NU Metro madrasa teacher education lecturer Lampung, and Leli Fertiliانا

Dea, M.Pd as the head of the IAIM NU Metro Lampung early childhood education study program. On January 4, 2023, the results of an assessment by 3 linguists on the quality of the product obtained scores, namely linguist 1 with 56 points, linguist 2 with 56 points and linguist 3 with 51 points with a final total of 163 then an average of 43 becomes the final percentage of eligibility is 86%.

Peer validation of the development of focusky multimedia-based comics was carried out by 3 friends, namely Ismy Rahmadani, S.Pd., Ida Farida, S.Pd and Sanggra Bimo, S.Pd on January 7 2023. The results of the assessment were carried out by colleagues by filling out a questionnaire to get an assessment namely. The results of the assessment by 3 colleagues on product quality obtained a value, namely friend 1 as many as 58 points, friend 2 as much as 48 points and friend 3 as much as 59 points with a final number of 169 then an average of 56 with a final percentage of eligibility of 86%. So based on the interpretation of the validity of the comic media based on Focusky multimedia according to the validation from media experts, material experts, linguists and colleagues' assessments it is said to be very feasible.

The Effectiveness of Increasing Students' Learning Interest Using Multimedia-Based Comics Media Focus on Science Subject Class V Elementary School

To find out whether there is any influence of Focusky multimedia-based comic media to increase students' learning interest, the researchers analyzed the data by making comparisons between comparing the results of the pre-test data before using Focusky multimedia-based comic media and analyzing the post-test results after the application of multimedia-based comic media. focusky for students, then tested the paired sample t-test. But before testing the hypothesis, in this study an assumption test was carried out which consisted of a normality test. Based on the results of the data analysis that the researchers did to carry out the normality test, the data were obtained as in Table 2.

Based on the acquisition of the questionnaire data above, it was used to analyze the data by comparing data from the results of the pre-test (initial questionnaire) with the post-test (final questionnaire). Students' interest in learning at the time before being given treatment in the form of focusky multimedia-based comic media which was carried out in class V SD Al-Qur'an. The initial stage provided a pretest in the form of a student

learning interest questionnaire which was then processed using SPSS 22. Then a paired simple t-test was performed. As explained in the previous chapter, the paired sample t-test is a comparison of the results of the initial learning interest (pre-test) and the results of the final learning interest (post-test) to find out how much interest students have in learning in the use of focusky multimedia-based comic media. . Based on the results of the data analysis that the researchers did, the data was obtained from the paired samples t-test as shown in Table 3.

Table 2. Normality Test of Interest in Learning

	Kolmogorov-Smirnov ^a			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Pre Test	0.101	20	0.200*	0.959	20	0.522
Post Test	0.129	20	0.200*	0.949	20	0.357

*. This is a lower bound of the true significance.

a. Lilliefors Significance Correction

Table 3. Statistical Paired Samples Test Results Pair 1

Test	Mean	N	Std. Deviation	Std. Error Mean
Pretest	53.30	20	6.845	1.531
Posttest	78.60	20	6.286	1.406

Table 4. Test Paired Samples Correlations Pair 1

Test	N	Correlation	Sig.
Pretest and Posttest	20	0.126	0.595

Sig value is obtained. (2-tailed) of 0.00 <0.05, it can be concluded that there is a difference in the average results of students' learning interest in the use of focusky multimedia-based comic media for the pre-test and post-test in class V. Also, it is known that the results pretest and posttest results of students' interest in learning after using focusky multimedia-based comic media. It is known that the value of initial learning interest (pretest) before using learning media is 53.30 while for final learning interest after using media (post-test) the value is 78.60. This means that there is an increase in the results of students' learning interest. Therefore, in other words it can also be concluded that the development of focusky multimedia-based comic media is able to increase students' interest in learning science on the sub-theme of how the body processes food.

Table 5. Test Paired Samples Test Pair 1

Test	Paired Differences				t	df	Sig. (2-tailed)	
	Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
				Lower				Upper
Pretest and Posttest	-25.300	8.688	1.943	-29.366	-21.234	-13.023	19	0.000

Conclusion

Digital comic media is developed using the ADDIE model, namely Analysis, Design, Development, Implementation, Evaluation. The feasibility of IPA-based multimedia focusky comic media is carried out with validation from various related experts, including: a. Media expert validation with a result of 88% in the "Very Eligible" category. b. Material expert validation with 90% result in the "Very Eligible" category. c. Validation by linguists with 86% results in the "Very Eligible" category and peer assessment with 86% results in the "Very Eligible" category. The developed focusky multimedia-based comic media can increase learning interest in science subjects, this is obtained based on the paired sample t-test hypothesis with results on student interest in obtaining a Sig value. (2 tailed) of $0.000 < 0.05$. The pretest students' interest in learning with an average score of 53.30 increased in the results of the posttest's learning interest with an average score of 78.60.

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