

Development of Hand Doll Media on Science Learning Students of Class V Elementary School 6 Srikaton

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DOI: <https://doi.org/10.21107/Widyagogik/v10i1.16943>

Received August 02, 2022; August 24, 2022; Accepted August 31, 2022

Abstract

This study aims to determine the Hand Puppet Media in Science Learning Class V SD Negeri 6 Srikaton and find out how to develop a Hand Puppet Media in Science Learning Class V SD Negeri 6 Srikaton which is valid and practical. This study uses a 4-D development model. The instruments used to measure the quality of the developed hand puppet media include validation sheets and practicality questionnaires. The product of this research is in the form of hand puppets on theme 1 sub theme 1 learning 1 in class V SD Negeri 6 Srikaton. So that this study shows the results of the entire validation component of the expert team including the valid category with an average score of 0,84 for all validators. The practicality of hand puppets received a practical response with an average score of all practicality tests, which was 91,10 %, this indicates that the hand puppet media is already practical.

Keywords – 4D Development; Hand Puppet Media; Science



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1. Introduction

Education is an effort to create better human resources. Education develops with the development of existing technology and the development of expertise in knowledge. Education is the main concern for Indonesia because there are appropriate lessons and equitable distribution. The level of education must be considered to achieve the direction of education. While the level itself can be viewed from the success achieved for a student while participating in learning activities.

The implementation of the education system in Indonesia in general is more directed to a learning model that is carried out in bulk and classical, with a quantity orientation in order to be able to serve as many students as possible so that it cannot accommodate the needs of individual students outside the group. Education should be able to develop the potential for intelligence and talent possessed by students optimally so that students can develop their own potential into an achievement that has a selling point (Shoimin, 2017:15).

The purpose of education is a very important factor in education, because the purpose of this education is the direction to be achieved or to be addressed by education. Part of the goal of national education is the development of human resources which has a very important role for the success and sustainability of national development. Through education can also develop the abilities and potentials that exist in each individual, in order to become a better individual. In the world of education, students who carry out the learning process of course do not do it individually but there are other components involved in it such as teachers, media, curriculum, learning resources, and learning models. The expected learning process that occurs in each school is a process that can develop the potential of students as a whole.

In the learning process, the teacher should be able to create an atmosphere of active, effective, creative, innovative learning activities that can provide a sense of comfort, fun and encourage students to understand the subject matter presented by the teacher. In order to create a conducive

atmosphere, a teacher must use strategy models and methods in learning. Each student is encouraged to be more active during the teaching and learning process, one of which is by actively asking students questions about each material that has been studied.

At the elementary school level, one of the subjects that must be included in the curriculum of a school is science learning. In science subjects can apply an effective and fun learning. The selection of learning models that are in accordance with science learning must also be considered, one of the suitable models to accompany science learning is the Contextual Teaching Learning learning model.

According to the Ministry of National Education in (Hasibuan 2014: 2) explains that contextual learning is a learning concept that helps teachers relate the material being taught to students' real-world situations and encourages students to make connections between their knowledge and its application in everyday life.

One of the problems in learning science is the low learning outcomes of science. Science learning so far only applies learning that has not been varied by conveying knowledge from teacher to student through monotonous teaching methods and only giving assignments to students. If the teacher is not able to present the material well and as attractively as possible, it can result in students becoming bored and bored during the learning activities. This can later lead to a decline in student learning outcomes in science subjects. Science learning in elementary schools still uses a teacher-centered learning method. The reality on the ground shows that there are still many students who have not achieved learning outcomes. During the learning process in the classroom, it often causes problems both from the teacher and from the students themselves. There are several problems that often occur, namely students do not pay attention to the material presented by the teacher.

Teachers are difficult in conveying material to students because sometimes teachers still do teacher center learning where during the learning

process teachers are more active than students so that teachers are overwhelmed in conveying the material being taught while students chat with their friends, in that way the teacher will also find it difficult to identify between students who understand the material being taught with students who do not understand the material being taught, and teachers find it difficult to provide feedback to students, because when students are asked questions only certain students can answer, namely students who pay attention and students who are smart. Students who pay attention to the teacher are only students who sit in the front row of seats while the rear row of seats is just busy chatting with their friends. With these conditions students are less focused in the learning process, students only see, listen, record teacher explanations and answer student exercises. Students become less enthusiastic, bored in the learning process, and less active students during learning.

Based on the results of observations made by the author on Friday, May 17, 2022, in class V SD Negeri 6 Srikaton, several facts were found that became a problem in the science learning process in schools, namely the way teachers teach still uses a monotonous and not varied learning model. Learning is still teacher-centered by giving assignments and questions and answers, this causes student activities and student learning outcomes to be less than optimal.

The needs analysis was carried out by the author on May 19, 2022. The analysis of the needs of teachers and students was carried out through filling out questionnaires to the homeroom teacher and fifth grade students of SD Negeri 6 Srikaton. Based on the results of filling out the teacher needs questionnaire, it was found that the school used the K-13 curriculum, with a total of 13 students. The methods often used in the learning process were lecture methods, question and answer, assignments. The learning process is carried out face-to-face, students still comply with health protocols while in class. The teaching materials used are student books and teacher books. The

difficulty of students in learning science is that the material presented is very short and sometimes students are confused in working on the questions. The class teacher has not maximally used learning media. There is a need for learning media so that students are more active, eager to learn and help in the learning process. Student responses from the questionnaire on student needs are very happy to learn using the Hand Puppet media because students love to learn while telling stories.

The results of filling out questionnaires for fifth grade students of SD Negeri 6 Srikaton obtained information that students enjoy learning with the media of Hand Puppets, students are happy with real media, and students enjoy learning with the help of learning media. Students enjoy learning directly while telling stories.

According to Sugiyono (2016: 407) Development or (Research And Development) is a research method used to produce certain products and test the effectiveness of these products, to be able to produce certain products used research that is needs analysis and to test the effectiveness of these products so that they can function in the wider community, research is needed to test the effectiveness of these products. This can be strengthened by the opinion of Ainin (2013: 96) which states that the term development research or R&D is a research design that aims to develop and validate educational products. Meanwhile, Sigit (2013: 21) suggests that R&D or development is a type of research aimed at producing a hardware or software product through a typical procedure which usually begins with a needs assessment, or needs analysis followed by a product development process, product evaluation, revision, and dissemination. product (dissemination). Based on some of the opinions above, research and development (Research and Development) is a development research in the field of education which is a type of research that aims to produce products for learning that begins with needs analysis, product development, product evaluation, revision, and product dissemination (dissemination).

Media is the plural of medium which means an introduction or intermediary used by educators to convey messages to students in achieving goals Kustiawan (2013: 2). According to Arsyad (2019: 3) Media is an intermediary or messenger from the sender to the recipient of the message. Meanwhile, according to Wati in (Susanti 2021: 16) learning media is a tool used by teachers and is a means of conveying messages to achieve learning goals that are able to stimulate the mind and will so as to generate learning motivation for the students themselves.

According to Arsyad (2019: 25) states that the media functions for the purpose of instruction where the information contained in the media must involve students in the mind or mentally as well as in the form of real activities so that learning can occur. According to Kustandi & Dermawan (2020:17) it is stated that the media functions for learning purposes where the information contained in the media must involve students both in the form of real activities so that learning can occur. Meanwhile, according to Kemp & Dayton in Susilana & Riyana (2020: 9) states that the function of learning media is that the use of learning media is not an additional function, but has its own function as a tool to create more effective learning situations. A hand puppet is a doll that is larger than a finger puppet and can be inserted into the hand. Fingers can be used to support hand movements and doll heads, according to Gunarti (Sulianto, 2014: 94). In Sulianto's opinion, hand puppets are imitations of human or animal forms that are played with one hand with unique colors.

According to Daryanto (Marini, 2015:3). Hand puppets can be used as educational media, dolls can be played in the form of puppet plays. According to Ahira (Muttaqin, 2013: 5) it is called a hand puppet, because the way to play it with one hand is to play one doll, and this doll only consists of a head and two hands. The body and legs are only clothes that cover the arms of the person who plays it. Samatowa (2017:3) states that science is a translation of words in English, namely natural science, meaning natural science (IPA). Related to nature or related to nature, science means knowledge. So natural

science (IPA) or science can be referred to as the science of nature, the science that studies events that occur in nature.

Trianto (Astari 2018:20) argues that science is a systematic collection of theories, its application is generally limited to natural phenomena, born and developed through the scientific method and demands a scientific attitude. In accordance with this definition, it means that science has three components, namely products in the form of a collection of theories, processes in the form of scientific methods and scientific attitudes. Science is learning that contains knowledge about events in the natural environment by observing, experimenting, inferring and compiling science theory (Aristiyani, 2017:64).

Relevant Research

- a. This research is relevant to the research conducted by Denna Delawanti Chrisyarani (2018) entitled "Development of Hand Puppet Media with Storytelling Method for Fifth Grade Students at SDN Sudimoro 2 Malang Regency" in the Journal of Basic Education. This research is to develop hand puppet media. This study uses a research and development approach to the 4D Thiagarajan model. This development stage consists of four stages, namely define, design, develop, and disseminate. Hand puppet media is equipped with guidelines for the use of teachers, storytelling techniques, instructions for using puppets, lesson plans and worksheets. This guide is designed to make it easier for teachers to implement learning using hand puppet media.
- b. This research is relevant to the research conducted by Ali Fakhrudin and Arini Uly Inayati (2015) entitled "Development of Hand Puppet Media on the Environmental Theme of Class II SD Negeri 02 Medayu, Pematang Regency". This research is a research and development (Research and Development). The research subjects in this study were 29 second grade elementary school students. The data collected in this study are media expert data and material expert data and product trial data. Data collection instruments in the form of questionnaires and questions. In the

first validation obtained an overall percentage of 76.25%, in the second validation obtained a percentage of 95%. This shows that hand puppet media is feasible to be used as a learning medium because it can improve student learning outcomes. Based on the results of this development research, teachers can develop hand puppet media into hand puppets that have two characters so that they can be used in learning to tell stories with more than two characters.

- c. This research is relevant to the research conducted by Dra. Endang Sri Mujiwati, M.Pd and Abdul Aziz Hunaifi, S.S, M.A (2017) entitled "Development of Hand Puppet Media to Improve the Ability to Retell Children's Stories Heard Using Their Own Words Class II SDN Ngadirejo 3 Academic Years". the development of hand puppet media with the material of retelling children's stories that were heard using the second grade students' own words. The validity, practicality, and effectiveness of the hand puppet media used in the material for retelling children's stories that were heard using the students' own words. This study used a development research (R & D) procedural model with Borg and Gall development procedures. The research subjects were 31 students of class II SDN Ngadirejo 3 Kediri by giving tests to students through pretest and posttest research techniques by providing instruments in the form of 4 psychomotor test questions, namely storytelling. From the results of the test, it can be said that the use of hand puppet media is effectively used in Indonesian language lessons with the material of retelling children's stories that are heard using their own words because students are more active and enthusiastic in learning activities.

2. Method

Sugiyono (2016:467) in (Buanita et al., 2020) Development or (Research And Development) is a research method used to produce certain products and test the effectiveness of these products, to be able to produce certain products used

research that is needs analysis and to test the effectiveness of these products so that they can function in society. Therefore, research is needed to test the effectiveness of these products. This can be strengthened by the opinion of (Moh Ainin, 2013) which states that the term development research or R&D is a research design that aims to develop and validate educational products. Meanwhile, (Purnomo et al., 2020) suggests that R&D or development is a type of research aimed at producing a hardware or software product through a typical procedure which usually begins with a needs assessment, or needs analysis followed by a product development process, product evaluation, revision, and dissemination. product (dissemination).

The product produced in this study is an interactive video media in thematic learning for fourth grade students of SD Negeri 56 Lubuklinggau. Interactive Video Media was developed through several stages using a 4-D development model. According to (Trianto, 2010) the 4-D development model consists of: Define, Design, Develop, and Disseminate, but in this study the researchers only reached the development stage. In research and development, researchers will carry out product development so that it is valid and practical. The level of validity is obtained from the results of filling out a questionnaire from experts, namely linguists, material experts and media experts. To determine the level of practicality, it was obtained from the results of questionnaires from educators and students through small group trials (Small Group).

- a. Data tabulation, in the form of media scoring guidelines to assess every aspect related to the media validation eligibility component filled with the provisions according to the following table

Table 1. Guidelines for Scoring on the Validation Sheet Questionnaire

Score	Criteria
4	Very Good
3	Good
2	Not Good
1	Not Very Good

(Modifikasi Sugiyono, 2019)

- 1) Giving the validity value by using the formula, as follows:

$$\bar{x} = \frac{\sum x}{n} \quad (\text{Adaptasi Setyawati, 2017:34})$$

Information:

\bar{x} = Average score of all aspects

$\sum x$ = Total score of all aspects

n = Number of questions

- 2) Criteria for media validity

Table 2. Criteria for Media Validity

Interval Average Score	Clarification
$X > 0,80$	High
$0,60 < X \leq 0,80$	High enough
$0,40 < X \leq 0,60$	Enough
$0 < X \leq 0,40$	Bad

(Febriandi, 2019:152)

- a. Data tabulation, in the form of guidelines for giving media scores to assess every aspect related to the practicality of the media filled with the provisions according to the following table :

Table 3. Guidelines for Scoring on Student Response Questionnaires

Score	Criteria
5	Strongly Agree
4	Agree
3	Enough
2	Don't agree
1	Strongly Disagree

(Modifikasi Widoyoko,, 2009:236)

- 1) Calculating the average practicality score of all aspects assessed using the following formula:

$$\text{Persentase} = \frac{\text{Total Score of Data Collection Results}}{\text{Criteria score}} \times 100\%$$

(Zuhriyah, 2019:485)

2) Media practicality criteria

Table 4. Criteria for Assessment of Media Practicality

Interval Average Score	Clarification
81% - 100%	Very Practical
61% - 80%	Practical
41% - 60%	Practical Enough
21% - 40%	Less Practical
0% - 20%	Not Practical

(Riduwan dalam Zuhriyah, 2019:485)

3. Result and Discussion

This study resulted in a hand puppet media for class V students with theme 1, sub-theme 1, learning 1 which was developed using a 4D model. The stages in this hand puppet media development research are: the definition stage, the design stage, the development stage, and the dissemination stage. The purpose of these stages is to produce valid and practical hand puppet media. The following is an explanation of the stages contained in the hand puppet media in the fifth grade science learning, namely:

a. Defining Stage (define)

1) Final Preliminary Analysis

At this stage, the author analyzes various matters relating to situations and conditions that are in accordance with the real situation in the field. Needs analysis is carried out in the learning process which aims to find out the problems experienced by teachers and students in grade V SD Negeri 6 Srikaton.

2) Student Analysis

Student analysis was carried out to determine the characteristics of students consisting of students' abilities, levels of cognitive development, and student learning experiences

3) Concept Analysis

Concept analysis is the identification of the main concepts that will be taught and the preparation process is carried out systematically and relates one concept to another relevant concept so that get the results form a concept map. The goal is to knowing students' ability to understand learning.

b. Stage of Design (Design)

1) Preparation of Benchmark Reference Test

The preparation of this reference test is the first step that connects the define stage and the design stage. The tests are arranged based on the results of the formulation of specific learning objectives. This test is a tool to measure the occurrence of behavioral changes in students after teaching and learning activities.

2) Media Selection

In research on the development of hand puppet media in science learning, it was chosen so that the media or means to deliver this learning material to facilitate the learning process.

3) Format Selection

The selection of this format is done by looking at and reviewing the formatformats of existing tools and those that have been developed in other more advanced regions/locations

4) Research Instruments

The instrument in this study consisted of 2 types of questionnaires, namely, a questionnaire to assess the validity of hand puppet media and a questionnaire to assess the practicality of hand puppet media. The following is a description of the questionnaire for assessing the validity of

hand puppet media and a questionnaire for assessing the practicality of hand puppet media.

c. Development Phase (Development)

The results of the initial design are assessed by the validator based on indicators; design effectiveness, consistency, format, language. The results of expert validation in the form of criticism and suggestions for improvement are used as the basis for improving the developed video product. The revised learning media based on input is declared valid with a minimum assessment of 'appropriate' and can be used at the next stage, namely product testing.

Table 5. Responses from the Expert Team

No.	Validator	Score Earned	Interpretation	Category
1	Language	27	0,75	High enough
2	Theory	29	0,90	High
3	Media	25	0,89	High
total			0,83	High

Based on the results of expert validation, the Hand Doll media obtained a value from language validation, namely 0.75, adjusted for the validity interpretation table with a high category. Then the results of media expert validation, Hand Doll media obtained a value of 0.89 adjusted for the validity interpretation table with a high category. And finally, the validation results from material experts, the Hand Doll media obtained a value of 0.90, adjusted for the validity interpretation table with a high category. Based on the validation results from the three validators, it can be seen that the results of the Hand Puppet Media are very valid to use.

Table 6. Overall Results of Teacher and Student Practicality Test

No.	Testing	Score Earned	Percentage	Category
1	Teacher Practicality Test	56	93,33%	Very Practical
2	Small Group Trial (<i>Small Group</i>)	320	88,88%	Very Practical
	Total	376	91,10%	Very Practical

Based on research from students' practicality tests, including: small group tests and teachers' practicality tests on interactive Hand Doll. The data can be concluded that the teacher's practicality test is included in the very practical category for use with a percentage of 93,33%, and the small group test is included in the very practical category for use with a percentage of 88,88%. Based on the results of the practicality test, an average of 91,10 %

4. Conclusion

Based on the background and problem formulation in the research and development that has been carried out, it can be concluded as follows:

- a. This development resulted in a Hand Puppet media for contextual-based science learning which was made using a 4D development model procedure with the stages of defining, planning, developing and disseminating.
- b. Validation Results Based on the validation results of linguists, 0.75 is quite valid, the results of media expert validation are 0.89 very valid, and the material validation results are 0.90 very valid, obtaining the average of the three experts very valid.
- c. Practical Results The results of practicality, namely small group trials on 6 students, obtained a practical score of 88.88 and after practicality trials on students, researchers also carried out practicality for teachers,

obtaining practical 93.33. Contextual-based science modules can be said and are practical so that they can be used in the learning process.

5. Patents

Based on the results of the study, the authors convey the following suggestions:

- a. It is hoped that the hand puppet media that researchers have developed can be an alternative for teachers and students in the learning process.
- b. The education office is expected to recommend hand puppet media based on local wisdom to be used in elementary schools in Musi Rawas Regency and its surroundings, because this hand puppet media has been proven to be valid and practical.

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