

Development of Bahasa Indonesia Instructional in the Theme of Animal Around Me by Using Multimedia Animation Based Learning for Students with Hearing Impairment

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Abstract. Implementation of learning with the theme of animals around me has a problem that is hearing impairment students in class IV do not understand what the names and concepts of animals in the environment, so that, in daily life, the students can not interact with the surrounding environment properly. As a result, the learning outcomes is low. Therefore, it needs an innovative and creative learning. The purpose of this study is to produce a multimedia animation based learning prototype of Bahasa Indonesia materials with the theme of animal around me for hearing impairment students. This research development using the Borg and Gall (2007) development model was carried out in 9 stages due to limited time and cost, namely: (1) identification (2) analysis (3) analyzing problems (4) research objectives (5) instrument assessment (6) strategy (7) developing teaching materials (8) Selecting themes (9) Expert validation. Data collection used questionnaires, pretest and posttest. The results of data collection techniques is the feasibility of teaching materials based on multimedia learning animation for hearing impairment students. The results of the Z sign test analysis showed that 2.202 were greater than the critical value $\alpha = 5\%$, namely 1.96, it could be analyzed that there was effectiveness in terms of the level of mastery of bahasa Indonesia teaching materials with the themes of animal around me based on multimedia animation learning in SDLB Negeri Tompokersan Lumajang.

Keywords: Orientation and Mobility Program, *Social Learning*

INTRODUCTION

Students with hearing impairment have a lack of functioning ability to receive information verbally, so that, the students are only able to receive information visually only. But their visualization does not necessarily solve the problem in hearing impairment students. So, students need a learning service with concrete material that is easily understood.

Learning Indonesian in SLB, especially in SDLB Negeri Tajangersan Lumajang has its own level of difficulty for hearing impairment students. This is because the learning resources they have are inadequate to fulfill their knowledge of the bahasa Indonesia concept that they should master for the future of hearing impairment students. Moreover, the 2013 curriculum is not yet available learning resources that support the bahasa Indonesia learning in schools.

Multimedia animation learning based teaching materials developing language skills by utilizing the trend technology development encourage us to be always innovate and be creative.

Based on the description, it can be concluded that the availability of bahasa Indonesian teaching materials with the theme of animal around me is based on multimedia animation learning for students

with hearing impairment in grade IV at SDLB N Tompokersan Lumajang.

Based on the above problems, the problem formulations in this study are as follows: (1) How is the development product of multimedia animation learning based on bahasa Indonesia teaching materials with the theme of animal around me for hearing impairment students?; (2) How is the feasibility of the development product of multimedia animation learning based on bahasa Indonesia teaching materials with the theme of animal around me for hearing impairment students?

The purpose of this study is to produce a prototype of the development product of multimedia animation learning based on bahasa Indonesia teaching materials with the theme of animal around me for hearing impairment students and knowing the feasibility of the development product of multimedia animation learning based on bahasa Indonesia teaching materials with the theme of animal around me for hearing impairment students.

This development product is limited to the Borg and Gall (2007) development model adapted from the Dick and Carey (2001) development model, namely: (1) assess needs to identify instructional goals; (2) conduct instructional analysis; (3) analyze learners and contexts; (4) write performance objectives; (5) develop

assessment instruments; (6) develop instructional strategy; (7) develop and select instructional material; (8) design and conduct formative evaluation of instruction. Whereas dissemination (and conduct summative evaluational) was not carried out due to time and cost limitations.

Teaching materials using multimedia animation learning can develop language skills by utilizing the development of technological trends. Bearing in mind that the development of trends for technological innovations that are rapidly increasing encourage us to be always innovate and be creative. According to Mayer (2014) animation multimedia learning is a technique in teaching students' language skills in the form of delivery or presentation of learning material in an animated manner to students who are presented with stories as well as interesting ones that aim to develop and improve students' language abilities. Multimedia learning animation is very effective in teaching understanding for students who experience obstacles in language skills.

According to MacLennan et al. (2002) "Animation is the process of recording and playing back a sequence of stills to achieve the illusion of continues motion", the meaning of the opinion above is animation is a process of recording and playing back a series of static images to get an illusion of movement and make it appear as if it is an attempt to move something that cannot move on its own.

According to Suheri (2006) "animation is a collection of images processed in such a way as to produce motion". Animation is an attempt to make static presentations come alive. Meanwhile, according to Oetomo (2006) "animation is an image that moves with a certain speed, direction, and manner"

From some of the above opinions it can be concluded that animation is a series of paintings or drawings that are moved electronically, so that, it appears on the screen to be moving or as if it came to life.

Multimedia learning animation is expected to meet the needs of students in the future given the very rapid development of technological trends, besides that, it also provides a practical way of learning student language skills and is expected to animation learning multimedia make it easier for students to write and retell stories in bahasa Indonesia with animal themes around me with good writing and improving the language skills of hearing impairment students.

The benefits that can be obtained from development research are.

Theoretically

Assist in making policy decisions in the delivery of quality education at the elementary school level in SLB-B. Can be used as a vehicle to broaden insights

on how to choose and implement learning methods that are consistent with the material being taught.

Practically

For schools, For teachers and, For researchers it is able to add insight and knowledge to the researchers themselves and to other researchers.

METHOD

The development of bahasa Indonesia teaching materials with themes of animal around me based on multimedia animation learning for hearing impairment students limited to the Borg and Gall development model (2007) is adapted from the Dick and Carey (2001) development model, namely: (1) assess needs to identify instructional goals; (2) conduct instructional analysis; (3) analyze learners and contexts; (4) write performance objectives; (5) develop assessment instruments; (6) develop instructional strategy; (7) develop and select instructional material; (8) design and conduct formative evaluation of instruction; full details are described as follows:

Need Analysis to Identify Objectives

This step aims to analyze the need to identify the goals of the program or product being developed. Hearing impairment students experience obstacles in communication because of the obstacles in their language development.

Besides being influenced by language development problems, communication skills are also influenced by biological and nervous systems, understanding (cognitive abilities), and social abilities. Students with disabilities tend to rely on visualization in receiving information.

Multimedia animation based learning material is a learning system that uses a computer that involves various types of media such as presentations, web and a series of paintings or drawings that are moved mechanically and electronically, so that, it appears on the screen to be moving or as if it become a living based on online guides and tutors in integrating visual and verbal material in the form of text, graphics, animation, video and audio to convey messages / teaching information.

Analyzing Problems of Hearing impairment Students

Hearing impairment students have experienced obstacles in communication because of their language development obstacles. So, if language development experiences obstacles, language skills will be hampered.

Besides being influenced by language development problems, communication skills are also influenced

by biological and nervous systems, understanding (cognitive abilities), and social abilities. Hearing impairment students tend to rely on visualization in receiving information.

Specific Research Objectives

The purpose of this step is to formulate specific objectives that refer to the purpose of the product being developed, namely to produce prototypes of instructional materials based on multimedia animation learning for hearing impairment students.

Developing Learning Materials Based on Multimedia Learning Animation

The product that will be produced is teaching material based on multimedia animation learning. The multimedia that will be produced contains bahasa Indonesia teaching materials on animal themes around me which are packaged into an interactive multimedia using animated media, animation presents a story tailored to the animal theme around me.

Multimedia animation learning that will be presented is in the form of Adobe Flash CS5 based animation. Adobe flash is a program that can combine text, sound, images, graphics, and animation used to describe activities that care about living things. The animation that will be produced has a menu or navigation button which can be chosen by the user, especially on the theme of caring for living things, so that, learning proces becomes interactive.

In the development of instructional materials based on multimedia learning animation is equipped with simple sentences and SIBI, so that, images can move to visualize student activities with the theme of caring for living things.

Strategies for Developing Learning Materials Based on Multimedia Animation Learning

The steps includes:

(a) Determine the product design to be developed; (b) Determine the research facilities and infrastructure needed during the research process; (c) Determine the stages of carrying out field design tests; (d) Determine the job description of the parties involved in the research.

Determine the product design to be developed

The product that will be produced is teaching material based on multimedia animation learning. The multimedia that will be produced contains bahasa Indonesia teaching materials on themes of animal around me packaged into an interactive multimedia using animated media, animation presents a story

tailored to the animal theme around me.

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In the development of instructional materials based on multimedia animation learning is equipped with simple sentences, so that, images can move to visualize the activities of students with care for living things. So, it can produce an instructional materials based on multimedia animation learning.

Determine research facilities and infrastructure.

The tools needed in developing instructional materials based on multimedia animation learning are computer or laptop devices equipped with LCDs and projectors.

Determine the stages of the implementation of the field design test in the implementation of the field design test. the first is to collect research subjects, namely hearing impairment students SDLB Tjekersan Lumajang. The next is the introduction and application of instructional materials based on multimedia animation learning to improve the ability to tell students who are deaf.

Determine the task description of the parties involved in the research as follows: (1) Researchers who work as developers of instructional materials based on multimedia animation learning, (2) Media experts whose job is to test the feasibility of the products produced, (3) Animation maker experts who serve as makers of multimedia animation learning media.

Choosing Animal Themes around Me

In its development, hearing impairment students experience hearing impairment which results in a lack of functioning ability of hearing impairment students to receive information verbally, so that, hearing impairment students are only able to receive information visually. The hearing impairment students can be taught theme of animals around me easily because it can interact the daily environment of students directly. Visualization of animals in the environment of students with disabilities must be seen and hearing impairment students can find out the names of animals around me indirectly.

Hearing impairment students need a learning service with concrete material that is easily understood by hearing impairment students. One way to provide the learning with concrete material is the discovery method.

Table 1. Likert scale consists of 5 categories

Score	Category
5	Very good
4	Good
3	Good enough
2	Less good
1	Not good

Hearing impairment students need the right method to improve their language ability, which is a method that can display concrete in accordance with what they have experienced. Learning methods for hearing impairment students must be rich in concrete language and do not allow children to fantasize about things they have not know yet. With these findings, it is hoped that the students are able to absorb what educators teach in their long-term memory

Expert Validation

Expert validation of symbols and practitioners of teaching materials based on multimedia learning animation is used to determine the feasibility of the product before it is implemented. The opinions and suggestions of the validator are used to improve teaching materials based on multimedia learning animation.

Revise Expert Validation Results

Make improvements in the expert test validation if there are revisions in multimedia animation learning based on teaching materials. Revisions are made to improve teaching materials based on multimedia animation learning.

Research subject

The subject of the trial was in the research of students of class IV hearing impairment students at SDLB Negeri Tompokersan Lumajang.

Place and time of research, The study was conducted at SDLB Negeri Tompokersan Lumajang. Data Collection Techniques and Research Instruments

Data collection techniques of multimedia animation learning validation are using checklist or questionnaire. Multimedia animation validation data was collected through validator assessment using multimedia learning validation sheets. The multimedia animation learning validation sheet is filled by putting a checklist (✓) in the appropriate column by the validator to assess the multimedia learning animation. a Likert scale was given to experts to test eligibility (valid), Table 1.

Observation is used to measure the level of effectiveness of multimedia learning animation. Data

collection techniques are using Student Observation Sheets to observe hearing impairment student activities in using multimedia learning animation for hearing impairment students.

Data Analysis Techniques

Expert validation analysis

To analyze the Likert scale score is the results of expert validation using the simple mean calculation as follows.

$$M_x = \frac{\sum x \sum x}{N N}$$

Source: Djatun (1999)

Information

Mx = Group average x

x = score

N = Number of items

The criteria for analyzing the data collection instruments are as follows.

Average value of eligibility

0.0 - 0.99 = Not Feasible

1.0 - 1.99 = Less Feasible

2.0 - 2.99 = Fair Feasible

3.0 - 3.99 = Feasible

4.0 - 5.00 = Very Feasible

Qualitative analysis

The data analysis technique used to analyze the data of this study is that the analysis of non-parametric data with quantitative data and the number of research subjects is only 8 or less than 10 students. Then the formula used is a non-parametric statistical formula type Wilcoxon test. The research design used was a pre-experiment with the form of "one group pre test post test design". This design involved one group, but the measurement or test was carried out 2 times ie at the beginning (O1) and final (O2) treatment to get the effectiveness level of treatment X (Anggoro, 2007).

FINDINGS AND DISCUSSION

Producing Products and Product Feasibility

Feasibility of teaching materials and data analysis of trial results

Bahasa Indonesia teaching materials on animal themes around me are said to have very feasible criteria if the validation score range $4.50 = Va < 5.0$. it is feasible if the validation score range $3.50 = Va < 4.50$. It is fair feasible if the validation score range $2,50 = Va < 3.50$. It is less feasible if the validation score range $1.50 = Va < 2.50$, and it is not feasible if the validation score range is $1 \leq Va < 1.50$. Va = Validity level.

Table 2. Criteria for Evaluating Validators of Products

No	Average Score from Validator	Information
1	$1 \leq Va < 1,50$	Not good
2	$1,50 = Va < 2,50$	Less good
3	$2,50 = Va < 3,50$	Fair good
4	$3,50 = Va < 4,50$	Good
5	$4,50 = Va < 5,0$	Very good

Table 3. Tabulation of data collection in SDLB Negeri Tompokersan Lumajang

Name	Score		Dif-ferent (O2-O1)	Level Marks		
	Pretest (O1)	Post-test (O2)		Tier	+	-
AL	58	70	+ 12	1,0	1,0	0
DL	52	76	+ 24	4,0	4,0	0
DR	51	74	+ 23	2,5	2,5	0
UL	52	78	+ 26	5,0	5,0	0
NR	48	76	+ 28	6,0	6,0	0
IB	54	77	+ 23	2,5	2,5	0
Number sign plus			6		+ 21	0

The average value of all indicators of expert material assessment, bahasa Indonesia teaching materials on animal themes around me are good / worth testing (very feasible). It is validator assessment of bahasa Indonesia teaching materials products with the themes of animal around me based on multimedia learning animation.

In accordance with the criteria contained in Chapter III as follows.

Criteria for Evaluating Validators of Products.

Bahasa Indonesia theme of animal teaching materials around me based on leaning multimedia animation for Hearing impairment Students, Table 2.

The results of the change work table 3 will then be measured by the Wilcoxon formula. The results of the analysis of the Z sign test showed that the results of 2.202 were greater than the critical value $\alpha = 5\%$ which is 1.96, so that, it can be analyzed that there was effectiveness as seen from the level of mastery of bahasa Indonesia teaching materials on animal themes around me based on multimedia learning animation in SDLB Negeri Tompokersan Lumajang.

The results of this development are bahasa Indonesia teaching materials for animals around me for hearing impairment students, in this section discussed:

- (1) A product of bahasa Indonesia teaching materials for animals around me for hearing impairment students
- (2) The feasibility of bahasa Indonesia teaching materials for animals around me for hearing impairment students
- (3) The effectiveness of bahasa Indonesia teaching materials on animal themes around me for hearing impairment students. The following is a discussion about the results of the study.

Product development of bahasa Indonesia teaching materials for animal themes around me for hearing impairment students is in the form of physical aspects packaged using a CD (Compact Disk) developed using Adobe Flash Player 11.2 r202. The development model proposed by Gall, Gall and Borg (2007) was chosen based on its suitability to the needs of development characteristics. In the development model Gall, Gall and Borg contain a 10-step systematic guide but conducted by 9-step researchers, this is because of limited costs and time but the quality of the product designed has a standard of feasibility.

Conclusion

Based on the results of product development, it has been carried out as follows,

Product of teaching materials based on multimedia animation learning for elementary school in the grade IV of hearing impairment students consists of two products such as a handouts in the form of instructional materials and multimedia animation learning which are packaged in CDs and a flshdisk in which there are animated multimedia learning.

Product teaching materials based on multimedia animation learning for hearing impairment students in the grade IV elementary school are feasible by both material and media experts, so that, they can improve learning outcomes

Suggestion

For teachers teaching materials based on multimedia learning animation can improve student learning outcomes can be used by teachers as an alternative in developing creativity in the learning process.

It is recommended to parents to be able to use the method of storytelling media series drawings as one approach to children’s learning at home.

For other researchers, it can be used as a research reference related to the learning approach.

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