The Development of Interactive Multimedia for First-grade Beginning Readers of Elementary School: An Innovative Learning Approach

Irlidiya Bahasa Education of State University of Makassar, Indonesia

Achmad Tolla Bahasa Education of State University of Makassar, Indonesia

Nurdin Noni English Department of State University of Makassar, Indonesia

Anshari

State University of Makassar, Indonesia

Abstract—The purpose of this research is to develop interactive multimedia for beginner readers in the firstgrade students of elementary school. This research was a research development, using the method of experimentation. One class as a class experiment got a treatment and one class as a control group. Data source this study was taken from a limited test and application of more extensive tests. The data were collected by using the techniques of observations, interviews, and tests. The data were analyzed using t-test analysis by applying IBM SPSS statistics 20 facilities. Based on the results of the calculations for the control class, the significance of the test results showed that p = .000 < 0, 05. That means that H0 is accepted. Therefore, there is no difference in learning outcomes of interactive multimedia for beginner readers on the first-grade students, Maros Regency. For experimental class, the significance of the test results (t-test), with a value is p = 015 > 0, 05. It means that H0 is rejected, and H1 is accepted. These results prove that there is a difference between learning outcomes using interactive multimedia and the class that does not use interactive multimedia. Therefore, interactive multimedia effectively improves student learning outcomes.

Index Terms-interactive multimedia, beginner readers, and innovative learning

I. INTRODUCTION

In carrying out the learning for the beginner readers, there are some issues that are perceived by teachers. One of the problems is the lack of media or learning tools in beginning reading (Sumardi, 2012). Although teachers have conducted many attempts to make the students can read well, but in fact, many students found difficulty in reading (Winihasih, 2005). In addition, the main issue that is still perceived is a lack of knowledge about learning innovations that can help teachers in teaching Indonesian Language Lesson material. In relation to this statement, the teacher is required to master many approaches and techniques of teaching, especially in teaching students to read. Therefore, the learning activities for beginning reading have to be designed either in relation to the content, learning methods or the media to be used. According to Muslimin (2011, p. 5), one of the efforts to improve the quality of teaching can be performed by implementing the innovation learning by utilizing the tool technology called with information and communication technology (ICT). The purpose of this research was to develop a multimedia interactive learning for beginner readers on the first-grade students of elementary school. The theoretical benefit of the research is to be a reference for teachers in developing the innovation learning Indonesian Language, especially teaching reading. The practical benefit is as media and learning resources that are designed based on fun and meaningful learning.

II. LITERATURE REVIEW

A. Interactive Multimedia

One of the strategies to improve the quality of learning is by utilizing Information Communication Technology (ICT) via interactive multimedia Prabhu (2011). For the aspects of learning, learning outcome improvement is supported by the use of media of instruction. Through the media, the potential sense of students can be accommodated. One of the aspects of leading media that can improve learning outcomes is the multimedia. The technology of multimedia is one of the latest developments in the world of education. It can give the impression of a vast and deep in the fields of communication and education. It can quicken and able to give familiarity with about something interestingly,

appropriately, effectively and efficiently (Faturromahman, 2012). Constantinescu (2007, p. 2) states that "Multimedia refers to computer-based systems that use various types of content, such as text, audio, video, graphics, animation, and interactivity". Multimedia is a combination of at least two media input or output of data. This media can be audio, animation, video, text and images. A multimedia computer is the utilization of the computer to create and combine text, graphics, audio, animation and video by integrating links and tools that allow users to navigate, interact, create and communicate. Interactive multimedia is an application that contained the entire multimedia elements that exist, and users are given the freedom to control and animate the elements (Suyanto, 2005).

B. Beginner Readers

There are some definitions of reading expressed by some experts. According to the Pandawa (2009), reading is a process of thinking through the process of perception and understanding of information, as well as giving meaning to the readings performed by readers. According to Johnson (2008), reading is not only learning competence through instruction but also through practice. In line with that, Winch (2006) states that Reading is the process of constructing meaning from the text. A purposeful thinking act can be described as bringing meaning to and taking meaning from the text. According to Scanlon (2010, p.9), reading is a complex process that requires coordination, analysis, and interpretation of the various information sources. Reading is essentially a mechanical skill of decoding. Changing the print symbols into sounds is to get the meaning. Reading is the main source of growth in vocabulary, language, and intelligence (Slavin, 2009).

Developing reading skill is ranging from *pre-reading* to the highest level. There are some stages that are passed by someone in reading.

a. Stage 0: *Pre-reading (pattern recognition)* is a stage experienced by preschool children that are characterized by pretending to read. For example, when a child is brought to a store, the child will "read" the label of goods bought by his mother. Whereas, children have not read, but they recognize patterns of letters.

b. Stage 1: *Discovery of Alphabet Principle/decoding stage* is the actual reading stages. For example, that is when children find that letter is voiced expression representation. However, we have not been able to "teach reading" If a child has not been ready. Preparedness is characterized by the readiness of orthographic. It is the readiness of the neural connections between the involvement of the parts of the brain that records the letter moulds and parts of the brain that activates the function to talk. For example, the word of B-O-L-A read: bola.

c. Stage 2 is *Development of Automaticity ("ungluing from print")*. At this stage, the children begin quite fluent in reading. They learn to use the ability of decoding in reading. They become curious on reading. He/she would like to read more. At this stage, the children learn the linking between the text reading and pronunciation, even from the text to a new thought or idea. Their decoding skills have developed, and their speeds in reading have increased. Reliability in reading also increased and become more fluent. At this stage, the child should be able to give attention to the meaning of the text. In general, this stage is reached when the children are 8 years old.

d. Stage 3: *Incorporation of Learning Subroutines (Reading for Learning the New)* or read to learn. At this stage, the motivation to read the changes. The change from "learning to read" to "reading to learn" begins in stage 3, when children can master the information from written materials; that can be examined through the school curriculum. At this stage, to read text is to obtain information and thus rapidly expanding their vocabulary. This stage of development is usually achieved when children sit in class 4 or about age 9-10 years. They are learned from books that she had. However, if the child has not mastered grade 4 "how to" of his reading, then in the next intermediate reading class, they are difficult is enhanced.

e. Stage 4: *Taking Multiple View Points during Reading*, namely the ability to compare two or more viewpoints, based on comparisons of the readability of articles. This step has not appeared until the child enters high school, and this ability will appear when the teacher gives a comparative thinking exercise.

f. Stage 5: *Reading for Building Personal Testing & Theory*. It is the perfect stage is achieved at age of students and manifested through various research results. Students read with the goal of creating formulas, or to define the position and his opinion about such a phenomenon, as well as consolidate over what she has. While reading, the individual concerned while doing personal Chall theory construction (1979) as cited in Kumara (2010, p. 6).

C. Innovative Learning

Innovative is the adjective of innovation. According to Indonesian Language Dictionary (KBI), innovation means a new invention which differs from previously idea, method, and tool. Innovative means are introducing something new, are updates (new creation) (Tim Penyusun Kamus, 2008).

Some sense of innovation expressed by experts include: Rogers (1983, p. 11) as cited in Su'ud (2008, p. 4) says that *An innovation is an idea, practice, or object; that is perceived as new by an individual or other unit of does*.

By Gufran (2010), Innovation means making changes or introducing something new; it can also be interpreted as an invention. In this case, there are five types of innovation that is; products, processes, marketing, organization, and business. It was concluded that understanding that innovation is something new, either in the form of tools, ideas and methods. Based on such understanding, the learning innovation is a new effort undertaken in the process of learning, using a variety of methods, approaches, means and atmospheres which support the achievement of learning objectives.

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While learning according to law No. 20 in 2003, learning is a process of interactions with educators and learners learning resources on the learning environment. So, innovative learning is a process of learning that is designed differently from the existing and creative idea born from teachers using learning resources (Depdiknas, 2007).

Innovative learning leads to more learning-centred students. Innovative learning as learning innovations may include modifications to learning, both in terms of the means and infrastructure as well as the applied learning models. Innovative learning is fun and requires creativity of teachers in the learning process so that students active, so that the achievement of learning outcomes more effective. Essentially, the innovative study was born from innovative thinking that can facilitate students in the learning process.

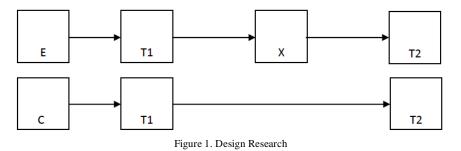
In the study of innovative teachers for creative, demanding to can develop and choose a strategy, methods, evaluation and learning media effectively. It is important, especially for creating a climate conducive to learning and fun.

The willingness of teachers to seek and find a variety of breakthroughs, either in the form of media and methods of learning is one of the supports will be the emergence of many innovations that will brighten. The willingness of teachers to always innovate in the lesson, students will address the saturation in the study.

One of the innovative learning models among different models of learning by Gufran using learning is computers as media in conveying instruction. Computer-based technology to display information to the students through the onscreen display. Various types of computer applications developed based on cognitive theories can be tutorial. Through the use of computers, learning will be centred on students with a high level of activity.

III. METHODOLOGY

This type of research is research development. This research uses research design used as follows:



Description:

E= Classroom experiments

C= Control class

T1= Pre-test in the experimental class

T1= Pre-test in the control group

T2= Post-test in the experimental class

T2= Post-test on the control class

X= Given the treatment

= Not given preferential treatment

The Data were analyzed by t-test for paired data.

The source of the data in this study is the source of data on the implementation of the test is limited. Limited testing is done in primary school 103 presidential instruction of Hasanuddin, Mandai Subdistrict. Research on subject tests tailored to the purpose and scope of the stages of the research. Therefore, the target subject tests in the study 1st grade in lessons of 2013/2014, 1st A grade as class experiments and 1st B grade as the class of the control.

IV. RESEARCH RESULTS

Research hypothesis: there is a difference between the learning outcomes of students using interactive multimedia with students who do not use interactive multimedia.

A. Statistical Hypothesis

For the hypothesis, testing is done using the t-test criteria student as follows: Ho is rejected if $p < \alpha$ or p < 0.05. Ho accepted if $p \ge \alpha$ or $p \ge 0.05$

B. Research on Hypothesis Testing Can Be Seen in the Following Table

The use of interactive multimedia for the reader beginner grade beginning in primary school for the two results, i.e. results of the test on the implementation of pre-test-post-test on the control class and classroom experiments, and control test result of combined classes and class experiments.

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Test results the use of interactive multimedia for the reader beginner grade beginning in elementary school can be seen in Table 1.

No.	T-Test	Sig (2 tailed)	Test results	Conclusion
1.	Smooth pre-test-a smooth post-test	.015	.015 > 0,05	Ho accepted
2.	The pronunciation of the pre-test- Pronunciation post-test	.032	032 > 0,05	Ho accepted
3.	Intonation pre-test -intonation post- test	.000	000 <0,05	Ho is rejected
1.	sound pre- test - sound post-test	.000	000 < 0.05	Ho is rejected

TABLE 1 TE

Based on the table above regarding the significance of the test results (test-t) to find out whether there is a difference between the control and experimental classes (using interactive multimedia) for beginner readers, elaborated as follows:

The significance of the test results (test-t) against the smooth implementation of the pre-and post-test class controls with value p = .015 > 0, 05 mean H0 is received. Statement of H0 is no difference learning outcomes without the use of interactive multimedia for the reader beginner students early in elementary school class Maros. Thus, it can be asserted that there is no significant difference between the results of the study without the use of interactive multimedia for beginner readers.

The significance of the test results (test-t) on aspects of pronunciation on the implementation of the pre-test and posttest controls class with value p = .032 > 0, 05 mean H0 is received. Statement of H0 is no difference learning outcomes without the use of interactive multimedia for the reader beginner students early in elementary school class Maros. Thus, it can be asserted that there is no significant difference between the results of the study without the use of interactive multimedia for beginner readers.

The significance of the test results (t-test) on aspects of the intonation on the implementation of the pre-test and posttest class control with value p = .000 < 0, 05 mean H0 is rejected. There was a difference Ho statement learning outcomes without the use of interactive multimedia for the reader beginner students early in elementary school class in Maros. Thus, it can be asserted that there is a significant difference between the results of the study without the use of interactive multimedia for beginner readers.

The significance of the test results (t-test) on aspects of the implementation of the pre- test and post-test control class with value p = .000 < 0, 05 mean H0 is rejected. There was a difference H0 statement learning outcomes without the use of interactive multimedia for the reader beginner students early in elementary school class in Maros. Thus, it can be asserted that there is a significant difference between the results of the study without the use of interactive multimedia for beginner readers.

Based on the description it can be concluded that in the classroom pre- test and post-test control class, learning outcomes is not effective without the use of interactive multimedia for beginner readers in the early grades in elementary school both in the aspect of Maros Regency fluency, pronunciation, intonation, sound.

While the test results the use of interactive multimedia for the reader beginner classes beginning in the elementary school class in Maros Regency in experiment class can be seen in table 2.

RESULTS IN THE USE OF INTERACTIVE MULTIMEDIA FOR BEGINNER READERS IN EXPERIMENT CLASS OF PRE-TEST AND I No. T-Test Sig (2 tailed) Test Result Description				
140.	1-1050	Sig (2 tailed)	Test Kesult	Description
1.	Fluency of pre-test Fluency of post-	.001	.001 > 0,05	Ho Accepted
	test			
2.	Pronunciation of pre-test	.032	032 > 0,05	Ho Accepted
	Pronunciation of post-test			-
3.	Intonation of pre-test	.000	000 < 0,05	Ho Rejected
	Intonation of post-test			·
4.	Sound of pre-test	.000	000 < 0.05	Ho Rejected
	Sound of post test		,	5

Based on the table above regarding the significance of the test results (t-test) to find out whether there is a difference between the control and experimental classes (using interactive multimedia) for beginner readers, elaborated as follows:

The significance of the test results (t-test) on the smooth implementation of the pre- test and post-test control class with p value = .001 < 0, 05 mean H0 is rejected. There was a difference H0 statement learning outcomes with the use of interactive multimedia for the reader beginner students early in elementary school class in Maros Regency in the experimental class. Thus, it can be asserted that there is a significant difference between the results of the study without the use of interactive multimedia for beginner readers.

The significance of the test results (t-test) on aspects of pronunciation on the implementation of the pre- test and posttest control class with value p = .000 < 0, 05 mean H0 is rejected. There was a difference H0 statement learning outcomes with the use of interactive multimedia for the reader beginner students early in elementary school class in Maros in the experimental class. Thus, it can be asserted that there is a significant difference between the results of the study without the use of interactive multimedia for beginner readers.

The significance of the test results (t-test) aspects of intonation in the implementation of the pre- test and post-test control class with value p=.000 < 0, 05 mean H0 is rejected. There was a difference H0 statement learning outcomes with the use of interactive multimedia for the reader beginner students early in elementary school class in Maros. Thus, it can be asserted that there is a significant difference between the results of the study without the use of interactive multimedia for beginner readers.

The significance of the test results (t-test) against sound on implementation of pre--test and post-test control class with the value p=.000 < 0, 05 mean H0 is rejected. There was a difference Ho statement learning outcomes with the use of interactive multimedia for the reader beginner students early in elementary school class in Maros. Thus, it can be asserted that there is a significant difference between the results of the study without the use of interactive multimedia for beginner readers.

The t-test results in total use of interactive multimedia can be seen in Table 3 below:

TABLE 3. The t-test results from total control class pre-test & post-test.					
1.	Control pre-test	.000	.000 < 0,05	H0 accepted	
	Control post-test				

Based on the table above regarding the significance of the test results of the t-test, shows p = .0000, 05 < mean H0 is accepted. Statement of H0 is no difference interactive multimedia learning outcomes for the reader beginner students early in elementary school class in Maros Regency.

TABLE 4.					
	THE T-TEST RESULTS FROM TOTAL EXPERIMENTAL CLASS PRE-TEST & POST-TEST.				
No.	T-Test	Sig (2 tailed)	Test Result	Description	
1.	Experiment of pre-test Experiment of post-test	.015	.015 > 0,05	H0 rejected	

Based on the table above regarding the significance of the test results (t-test) with a value of p = .015 > 0.05. These results prove that there is a difference between learning outcomes learning using interactive multimedia in learning without the use of interactive multimedia for the reader beginner students early in elementary school class in Maros Regency. So there is a relationship between linear and positive nature variable of Pre-Test and Post-Test. It shows that if there are students who at the time of pre-test value are already good, then after being given the treatment and then given a post-test, its value will be the better.

TABLE 5.
STATISTICS TEST SCORE RESULTS OF STUDENT LEARNING IN THE EXPERIMENTAL CLASS.
Statistics

		Pre-test Experiment	Post-test Experiment
N	Valid	33	33
IN	Missing	0	0
Mean	-	64.9091	84.7879
Media	ın	69.0000	87.0000
Mode		75.00	100.00
Std. Deviation		14.73805	13.01383
Sum		2142.00	2798.00

The table above shows that the score aspects of student teaching outcome 1st grade SD Negeri Hasanuddin as the experimental class on pre-test obtained an average score of 64.90 with the standard deviation of 14.73, while the post-test obtained an average score of 84.78 with the standard deviation of 13.01.

V. DISCUSSION AND CONCLUSION

The results of calculations on the IBM SPSS statistic 20 gained control class the results of significance test (t-test) with p=.000 < 0, 05 means H0 is accepted. H0 statement is no difference in the results of an interactive multimedia learning for new reader's grade students beginning in elementary school Maros. While in the experimental class, the results of significance test (t-test) with p = .015 > 0, 05. H0 refused and H1 accepted. These results prove that there are differences in learning outcomes between the classes that implement the use of interactive multimedia learning with a class that does not employ the interactive multimedia.

Based on the results of the research that the researcher did, then it can put forth a summary of the test results of the significance of that class of experiments it was found that the overall results obtained good fluency, pronunciation, intonation, sound is value smaller than 0.05 meaning Ho is rejected, this proves that there is a difference learning

outcomes between learning to use interactive multimedia for the reader beginner students early in elementary school class in Maros Regency. Thus the use of interactive multimedia for the reader beginner grade beginning in elementary school effective in Maros Regency well seen from the aspect of fluency, pronunciation, intonation and sound.

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Irlidiya, was born in 1973, 21st February in Ujung Pandang, South Sulawesi. She graduate her elementary school in SDN Ladange Kecamatan Camba , Maros Regency in 1986, her junior high school in SMPN Ladange in 1989, and then she continued her senior high school in SPGN 1 in Ujung pandang and graduated in 1991. She start her carrier as a teacher in elementary school in SDN No, Parasangan Beru in 1995.

She finished her undergraduate in study program of Indonesia Education, Language and Literature in STKIP Yapim Maros in 2004. And then she continued a graduate program, study program of Indonesia Language in State University of Makassar, in 2006 and graduated in 2008. She registered as lecturer in STKIP Yapim Maros in 2007. She follow Sandwich Like Program in 2012 in Flinders University, South Australia.



Achmad Tolla, was born on March 21, 1949 in Leling-Mamuju, Indonesia. He is a lecturer at the Faculty of Languages and literature at State University of Makassar.

He graduated in elementary school in Mamuju in 1965. He graduated Junior High School in Mamuju in 1968. And then he continued his Senior high School in Mamuju and graduated in 1970, Bachelor's degree (S1) in Education of language and Literature of IKIP Ujung Ppandang in 1980, Master (S2) in Indonesian Language Education, post graduate IKIP Malang in 1991, and Postgraduate Degree (S3) in Indonesian Language Education, UM Malang in 1996.

Prof. Dr. Achmad Tolla, M.Pd has some scientific publications, namely: (1) Shifting of languages as the result of a merging of different ethnic, in 2007,(2) Language shift in environmental migrants in Luwuk, 2004, ment of communicative language Indonesia test device for primary school Pupils in the city of Makassar in 2003

and (3) The development of communicative language Indonesia test device for primary school Pupils in the city of Makassar, in 2003. He has been the Chairman of the Indonesian Language Education Program studies S-2 and S-3 since 2009-present.



Nurdin Noni, was born in 1962, 22 December in Barru, South Sulawesi. He graduated his elementary school in 1975 in SDN Lompengen. And then he graduated his junior high school in MTs Muahmmadiyah in 1979. And then he graduated his Senior high school in Muhammadiyah Barru in 1982. He assumed his educational bachelor in 1987, English Department. And then he continued his education in Postgraduate Program, study program of English in 1991 and graduated in 1994 in State University of Makassar. In 1994, he continued his education in English Department, doctoral program in Hasanuddin University and assumed tittle of Doctoral in 2004. He assumed as Head of ICT, State University of Makassar. He has been assumed as Asistant President IV nd present he assumed as Assistant President II in State University of Makassar. He has been entitled "*Teknologi Informasi dan Komunikasi*" in 2010 and scientific research entitled "*The walkany and metablich lawasat dary adapted and any adapted 2014 programing CMSTEA*."

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Anshari, was born in 1964, 29 April in Enrekang, South Sulawesi, Indonesia. He graduated his undergraduate in IKIP Ujung Pandang in 1988. He assumed his magister title in the field of Humanities in Hasanuddin University in 1999. He graaduated his doctoral program in State University of Malang in 2007.

He started his carreer as a lecturer in Faculty of Language and Literature in IKIP ujung Pandang since in 1989. He lecturing in Postgraduate program in State University of Makassar since in 2007 until present. He assumed his Professor in 2010. Present he active as writer in some print media in Makassar, as well as speaker in various of training of learning activity. Present he is a head of "*Tidang Sipulung*" Magazine in 2009-present.

He has been published book entitled "Budi Bahasa" in 2007 and scientific research entitled "Representasi Bahasa sebagai sistem makna sosial, politik, dan historis; riset pengembangan dan implementasi teori linguistik Gramscian, Penelitian RUKK- Menristek".