Journal of Education and Practice
ISSN 2222-1735 (Paper) ISSN 2222-288X (Online)
Vol.8, No.35, 2017

The Development of Procedure Text Learning Media in the Form of Animation for Students of Class VII in SMP/MTS

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Abstract
This study aimed to analyze the suitability of the needs in using procedure text learning media which was available for students of class VII of SMP Negeri 18 Medan, developing procedure text learning media in the form of animation and analyzing the improvement of students' learning outcomes before and after using procedure text learning media in the form of animation referred to the criteria of product quality by Nieveen. According to Nieveen a product is good if it meets three criteria of product quality namely: (1) validity, (2) practicality, and (3) effectiveness. This research referred to the Thiagarajan development model namely the 4-D model (four D models). This study used a one group pretest-posttest design. The findings showed that: (1) procedure text learning media in the form of animation was needed by the students so that the learning situation was more concrete, interesting, and fun, (2) the learning tool produced was procedure text learning media in the form of animation that was packaged in a compact disk and has met the valid criteria from the expert team: the percentage of score from the design experts of learning media reached 92%, learning media experts reached 100%, content expert reached 85%, and linguists reached 98%. The percentage of scores from each of these experts was in a very valid classification. The practicality of learning media was concluded based on students' responses and teachers' responses: students' responses to learning media on experiment II reached an average percentage of 92% on practical criteria, teachers' response to instructional media on experiment I reached 96% on practical criteria. The effectiveness of learning media was concluded based on students' posttest result in experiment I with the percentage of classical completeness was equal to 87.5% at very good criterion or otherwise completed, and (3) The improvement of students' learning outcomes was concluded based on pretest and posttest analyzed using N-Gain and the average value of gain is 0.73 in the high category.
Keywords: learning media, procedure text, animation

1. INTRODUCTION

Creative teachers have many ways to get the message (subject matter) to students so that students can understand the message well. Dedication, creativity, and the ability of the teacher greatly affect the success of the learning process. Regulation of the Ministry of Education and Culture No. 22 of 2016 on Basic and Secondary Education Process Standards contains 14 principles of learning that are used in accordance with the competency standards of graduates and content standards, one of them is the utilization of information and communication technology to improve the efficiency and effectiveness of learning. The reality in the field shows that the utilization of information and communication technology has not been implemented by the teachers well. This is evidenced by the results of preliminary observations made in SMP Negeri 18 Medan that the facilities and infrastructure in that school is very adequate, such as the availability of multiple projectors, laptops, and computer labs, but they are never used for learning media.

Implementation of teaching and learning process is often faced with abstract material and beyond the Students' everyday experience, so that the material becomes difficult to teach by the teacher and difficult to understand by students in depth. Teachers have not used the media that arouse students' interest and curiosity in the subject matter. This is thought to be one cause of the low quality of the process and the learning outcomes.

The procedure text is one of the scopes of Indonesian language material for grade VII students of SMP/MTs based on the 2013 curriculum contained in the syllabus of Indonesian language subjects 2016 edition. The procedure text is the text that contains the steps that must be taken to achieve a certain goal. The procedure text has a structure, such as a list of ingredients and sequence of implementation phases. The list of materials and sequence of implementation phases in text learning procedures should not only be contained in textbooks that result in inability to develop students 'abilities because students' thinking becomes abstract and low. Students should be able to see directly the tools/materials that are prepared, and practice directly each stage of implementation. However, due to the many limitations that exist in the learning process such as limitations of space, times, and availability of materials, make teachers more dominantly using conventional learning process.

This can make the concept of learning on the procedure text relatively abstract.

Professional teachers should be able to use an alternative that can answer this problem, namely by selecting the appropriate learning media for procedure text. Solutions to solve various problems, teachers are required to innovate (renewal) in learning, as an effort to improve the quality of learning in schools. Innovations can be created according to their usage, which creates new things, facilitates education, and leads to progress (Rusdiana, 2014:46). Innovation in education can be either product or system. Daryanto (2016:3) concluded that teacher's role in learning is as facilitator, mediator, and supervisor.

One of the learning media in accordance with the development of technology and can be used in the learning process is animation. In accordance with Aksoy's findings (2012) in the Journal of Scientific Research entitled The Effects of Animation Technique on the 7th Grade Science and Technology Course states that the animation media is more effective than traditional teaching media in improving student learning outcomes. Meanwhile, Balazinski & Przybylo (2005) in the Journal of Manufacturing Systems entitled Teaching Manufacturing Pro-cesses Using Computer Animation, said that the use of animation media in learning can reduce the learning process time and test results increased by 15%. This opinion reinforces the assumption that the learning process by using animated learning media can facilitate students to understand the material delivered through the media that can improve student learning outcomes. Development of learning tools is expected to help in achieving the learning objectives. Therefore, the resulting product should refer to the three product quality criteria by Nieveen (1999) that is the validity, practicality, and effectiveness to make the product worthy of use.

The objectives of this research are: (1) to analyze suitability of requirement in using available learning media of procedure text for VII students of SMP Negeri 18 Medan, (2) developing a valid animated learning media, practical and effective on the procedure text for students of class VII SMP Negeri 18 Medan, and (3) to analyze the improvement of student learning outcomes by using learning media of procedure text in the form of animation.

2. REVIEW OF LITERATURE

2.1 Learning Media

To make sure that the message can be received by students well without any misunderstanding, it is necessary to use the means that can help the process of conveying the message well to the students. Means of conveying this message is called learning media. All forms of media used for teaching are called learning media. Schram (in Susilana & Riyana, 2009:6) argues that learning media is a messenger technology that can be utilized for learning purposes. Thus, the learning media is an extension of the teacher.

The benchmark or requirement as a consideration of the selection of learning media becomes a very fundamental thing to note, because good planning will get good results. Wiarto (2016:46-47) argued that the media to be selected in the learning process must also meet the requirements of visible, interesting, simple, useful, accurate, legitimate, structure (visuals).

Learning media that will be developed in this study based on several criteria of media selection is an animated learning media. Animation is selected based on observation and analysis of needs that have been done. Mayer and Morneo (2002:88) suggests that animation is a form of pictorial presentation of the most interesting, which is a simulation of moving images that describe the movement of an object. Based on these opinions can be concluded that the animation is a kind of illusion of movement of images or objects that are stationary and arranged regularly according to a predetermined groove. Therefore, the animation media can show the sequence from time to time like a time process.

2.2 Procedure Text

Mahsun (2014:30) states, " the procedure/landing text is one of a kind of text that includes the factual genre of procedural subgenre. The social purpose of this text is to direct or teach about the steps that have been determined". In line with that statement, Priyatni (2014:87) concludes that the text that gives instructions for conducting or using something with sequential steps is called a procedure text. Then, the Ministry of Education and Culture (2016:88) concludes that the purpose of the text of the procedure is to explain the activities to be done so that the reader/viewer can accurately follow a process of making something, doing a job, or using a tool.

Based on some opinions above, it can be concluded that the text of the procedure is a text that contains the steps that must be passed to make something, do a job, or use a tool to achieve the desired goal. These steps cannot be done randomly. Goals will be achieved if the students follow the step by step sequently.

One of the advantages of animation is its ability to explain events systematically in each change of time. This is helpful in explaining the procedure and sequence of events. So it can be interpreted that the media animation is a media that can be used in the learning process. Lee & Owens (2004:127) in his research states that the use of animation is very good and effective to attract the attention of learners in learning situations both the beginning and the end of the series of lessons. Therefore, the learning media in the form of animation is expected

to support the achievement of learning objectives. Xiao (2013:288) in the International Journal of Information and Education Technology states that the use of animated learning media in the learning approach in the classroom can stimulate student interest in learning, fostering realistic, memorable, and interactive feelings. These criteria make this media worthy of use in teaching activities. In line with the above opinion Kim, et al. (2007:261) in the Journal Compilation entitled The Effect Of Animation states, "Animated graphics are more likely to increase emotional interest than static graphics because animation may induce higher arousal levels".

3. METHODOLOGY

3.1 Research Design

This research was a type of research development (Research & Development*)*. In this study, the learning media to be developed is in the form of animation which is designed using adobe flash professional program cs6 which according to the students' needs. The final product would be evaluated based on the aspect of product quality specified. Thus, the product result which was developed in this research was a valid, practical and effective learning media.

3.2 Research Location and Time

This research was conducted at SMP Negeri 18 Medan, Jalan Kemuning Raya 131, Helvetia Sub-district, Medan Helvetia Sub-district. This research was conducted in the odd semester of academic year 2017/2018.

3.3 Subjects and Objects of the Research

Subjects in this study were students of class VII of SMP Negeri 18 Medan, validators of learning media, and teachers of Indonesian language subjects at SMP Negeri 18 Medan. The object of this research was learning media of procedure text in animated form.

3.4 Research procedure

The design of learning media referred to the tutorial model. Rusman (2012:302) says that tutorials in computer-based learning program is shown as a substitute for the learning source that has been derived from the teacher, where the learning process is given through text, graphics, animation, audio that appears on the monitor that provides the arrangement of materials, practice and problem solving. Problem solving in this case namely if the student's response was correct, the computer would continue to move on to the next lesson. If the student's response was wrong, the computer would repeat the previous lesson or moved on to one part depending on the mistake made by the user (the student). The storyboard design that would be developed was presented in the following chart.

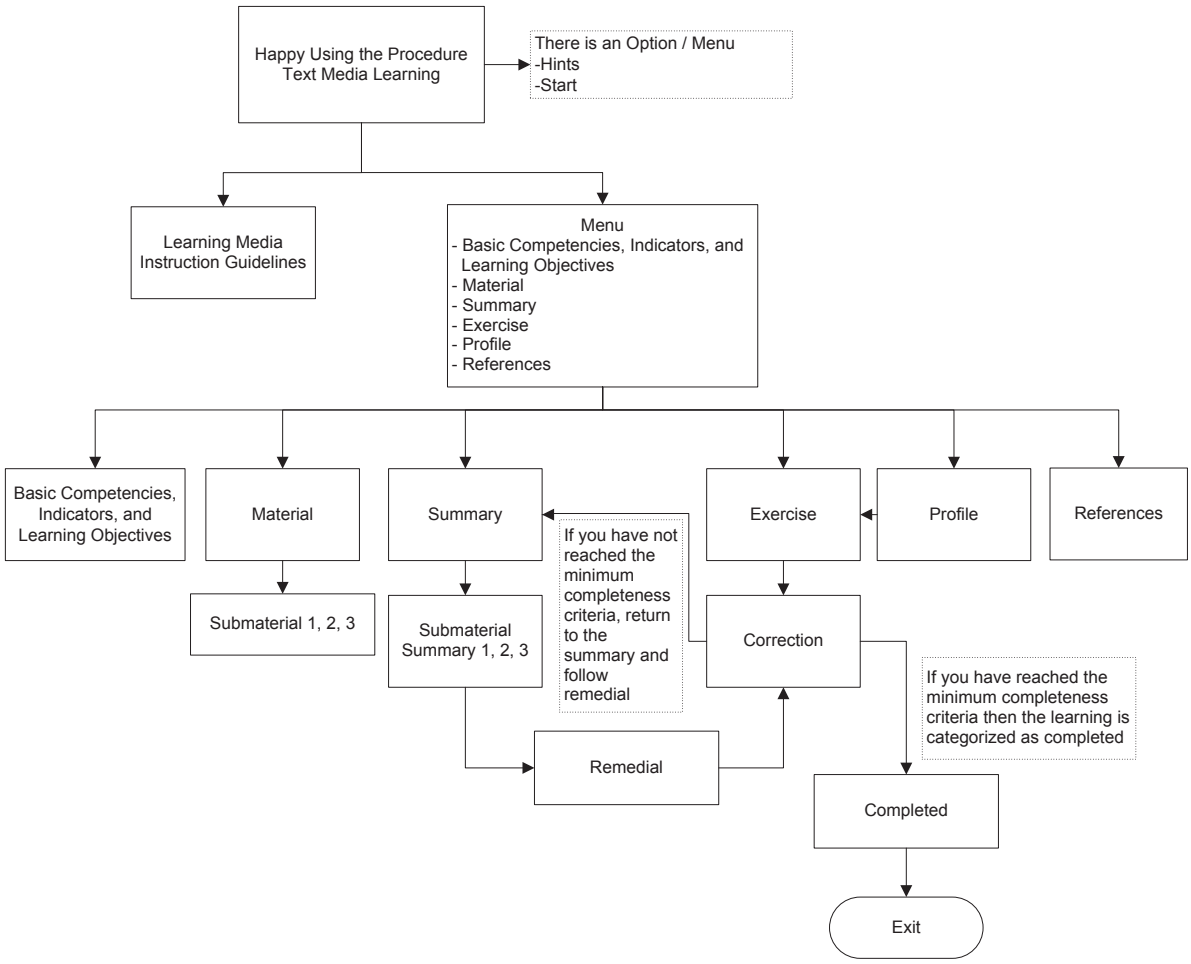

Chart 1. Storyboard Tutorial Developed Model

The final product would be evaluated based on the aspect of product quality specified. The result of the product developed in this research was a valid, practical and effective learning media. The design of the experiment in this study used the design of one group pretest-posttest design. The development model used in this study followed the flow of Sivasailam, Thiagarajan, Dorothy S. Semmel and Melvyn I Semmel (1974) namely: (1) define, (2) planning, (3) development stage, and (4) dispersion stage (disseminate).

In the early stages, the product developed was then validated through the validator. Further valid products woud be applied to the learning to see the effectiveness of the product. In addition to Valid and effective, developed media must also have a practical value, in accordance with what was needed during the learning takes place, teachers who play a role in learning really know what was needed by students, and vice versa the response given students must be in accordance with what they needed.

3.5 Technique of Data collection

This study used two types of data collection techniques, namely test and non-test techniques. The test technique was done to collect and capture learning result data. Non test technique in this research was a questionnaire spread out to obtain product data results from Indonesian language learning experts, linguists, designers of learning media, media experts, learners, and teachers.

3.6 Technique of Data analysis

The process of data analysis was done by examining all data that has been collected from various sources. The data collected in this study was data from the validators of learning media, data from teachers, and data from students.

3.6.1 The Needs analysis

Needs analysis was done by giving a questionnaire that consists of several questions to students and teachers. Data obtained from the results of needs analysis was used as a basis to explore what problems arised in the process of learning materials of procedure text.

3.6.2 The Worthiness of Learning Media

The resulting product should referred to the three product quality criteria by Nieveen namely the validity, practicality, and effectiveness of the product could be said to be suitable for use in learning.

3.6.2.1 Validated analysis of animated learning media

Expert validation questionnaires would be analyzed using the percentage of learning media scores developed. The formula used to calculate the percentage of expert validation questionnaires is:

$$P = \frac{f}{N} x100\% \qquad \text{(Sugiyono, 2013:141)}$$

Annotation:
P : Percentage score
f : number of scores obtained
N : maximum number of scores

Table 1. Classification of Media Learning Validity

Level of Achievement	Classification of Validation
81,26% < P ≤ 100%	Very valid
62,26% < P ≤ 81,25%	Valid
43,76% < P ≤ 62,25%	Less valid
25% < P ≤ 43,75%	Not valid

(Source: Sudjana 2007:91)

3.6.2.2 Practical analysis of learning media in animation form

Practicality of the media was measured by questionnaire responses from students and questionnaire response from the teacher. Subjects who tested the truth (validator) on the practicality of this learning media were students and teachers. Data obtained through questionnaires were analyzed based on the percentage of students and teachers who gave answers for each category questioned in the questionnaire by using the following formula.

$$A = \frac{TSEV}{S-max} \text{ x } 100\% \qquad \text{(Akbar and Sriwiyana, 2010:208)}$$

Annotation:
A : *Applying*
TSEV : Total empirical score validator
S-max : Maximum score expected

Table 2. Product Experiment Conversion Rates

Level of Achievement	Category	Description
86%-100%	Very practical	Can be used without revision
70% - 85%	Quite practical	Can be used with small revisions
60% - 69%	Not practical	Can not be used
00% - 59%	Very impractical	Prohibited to use

(Source: Akbar and Sriwiyana, 2010:147)

3.6.2.3 Analysis of the effectiveness of animated learning media

The effectiveness of learning media in the form of animation designed using adobe flas program professional cs6 analyzed from student learning result test consist of 20 multiple choice questions. To see the effectiveness of learning media in the form of animation then the following effectiveness calculation formula was used.

$$KB = \frac{T}{Tt} x\ 100\% \qquad \text{(Trianto, 2010:241)}$$

Annotation:
KB : Percentage mastery learning
T : Number of scores obtained by students
Tt : Total score

Completeness of learning students in a class or percentage of classical completeness (PKK) was obtained by calculating the percentage of total students who completed individually. A class was said to be complete learning if PKK ≥ 85% (Department of education and culture in Trianto, 2010: 241). The percentage of classical mastery can be calculated by the formula:

$$PKK = \frac{\text{Number of students who have completed the study}}{\text{Total number of students}} \text{ x } 100\%$$

3.6.3 Analysis of Improved Learning Outcomes

The Improved learning outcomes that occurred before and after learning by learning media of procedure text in the form of animation can be calculated by the formula N-Gain (Normalized-Gain).

$$\text{N-Gain} = \frac{S_{postest} - S_{pretest}}{S_{maksimum} - S_{pretest}}$$ (Hake in Meltzer, 2002:1260)

Annotation:
$S_{postest}$: final test score,
$S_{maksimum}$: maximum score
$S_{pretest}$: initial test score

A criterion for N-Gain score by Hake is categorized into three levels, as shown in the following table.

Table 3. N-Gain Score Criteria

Limitations	Category
g > 0,7	High
0,3< g <0,7	Medium
g < 0,3	Low

4. FINDINGS

4.1 Needs Analysis

The results of the analysis of the needs of students and teachers were obtained by distributing questionnaire needs analysis to all students of class VII-8 and 2 Indonesian language teachers by first explaining and demonstrating the overview of learning media in the form of an animated procedure text. Based on the results of questionnaires analysis of students' needs, it could be concluded that 95% of students argued that the procedure text was not easy to understand just by using textbook learning media, 100% of students enjoyed learning by using learning media in accordance with the development of science and technology, 95% of students were not easy to imagine the process stages or steps on the procedure text by using a textbook, 100% of students felt Indonesian language learning in the classroom using the textbook learning media was not fun, 100% of students loved and were interested in viewing animations, 87.5% of students had seen the procedure text material visualized / displayed through animation, 97.5% of students preferred learning to use animated media instead of only using textbooks.

Based on the results of questionnaire analysis of teachers' needs, it could be concluded that 100% of teachers stated that the procedure text was not easy to understand just by using textbook learning media, 100% of teachers loved to teach by using learning media in accordance with the development of science and technology, 100% of teachers found it difficult to imagine step processes or steps on the procedure text using textbooks, 100% of teachers felt Indonesian language learning in the classroom using learning media textbook was not fun, 100% of teachers never tought using animated media, 100% of teachers liked and interested in viewing animations, 50% of teachers had seen procedure text material visualized/served through animation, 100% of teachers were in need of learning media in the form of animation in teaching. Result of analysis of students and teachers' analysis based on direct observation and the result of questionnaire, and the need analysis was given to students and teachers, then it was concluded that development of learning media of text of procedure in the form of animation was very appropriate in overcoming some problems that exist.

4.2 Worthiness of Learning Media

The resulting product should refer to the three product quality criteria by Nieveen namely the validity, practicality, and effectiveness so that the product could be said to be suitable for use in learning.

The validity of learning media was seen from the results of the experts team validation to the learning media on procedure text in the form of animation. The team of experts consisted of design experts of learning media, learning media experts, content experts, and linguists. Validation results could be seen in the table below.

Table 4. Percentage of Expert Team Validation Scores

No	Validator	Percentage of Validation I	Percentage of Validation II	Average Validation II	Classification
1	Design Expert	64%	92%	94%	Very Valid
2	Media Expert	76%	100%		
3	Content Expert	71%	85%		
4	Linguist	75%	98%		

The result of score percentage from the design expert of learning media on validation II was 92%, score percentage from media expert was 100%, score percentage from content expert was 85%, and score percentage from linguist was 98%. The average percentage of all expert teams was 94%. Therefore, the learning media was classified as very valid. The percentage comparison on validation I with percentage of validation II from each expert more clearly could be seen in the following diagram.

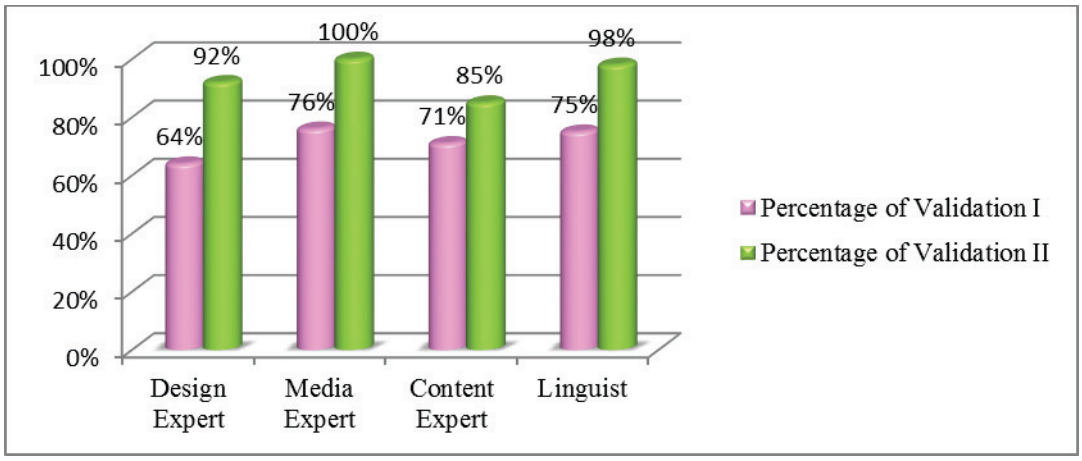

Figure 1. Comparison Diagram of Percentage Validation I and II

Comparison of validation I and validation II results from each expert could be seen clearly in the diagram above. The result of score percentage from the learning media design expert on validation I was 64%, while in validation II reached 92%, the score percentage from media expert on validation I was 76%, while in the validation II reached 100%, the percentage score from content expert on validation I was 71%, while in validation II reached 85%, and the score percentage from the linguist on validation I was 75%, while in validation II reached 98%. The average percentage from all expert teams was 94%. It is concluded that learning media was classified as very valid and feasible to be tested in field without revision.

Practicality of learning media was seen from result of questionnaire analysis from students and teachers' response. The result of questionnaire analysis from students in experiment I obtained the average percentage of 85% of the total students. Learning media in the form of an animated text procedure developed was quite practical, but there were still some aspects that had not been practical namely on aspects of quality content and evaluation. The results of questionnaire responses from students in experiment II were done because there were still errors in the learning media that must be revised. In Test II the average percentage was 92% of the total number of 40 students. The percentage averages were classified under practical criteria. All aspects were categorized as practical because all students provided the assessment with a practical category on every aspect of learning media.

Teachers to the learning media developed were very important to know the practicality of learning media when it was used in the learning process. The results of teacher response analysis could be seen in the following table.

Table 5. Results of Teacher Response Questionnaire Analysis in Experiment I

No	Aspect	Score
1	Addressing the limited experience of the students	4
2	Overcoming classroom boundaries	4
3	Allowing the interaction between participants and their environment	3
4	Adding a basic concept that is true, real, and right	4
5	Controlling the speed of student learning	4
6	Providing a thorough experience from concrete to abstract	4
Total		**23**
Percentage		**96%**

Teacher responses to learning media developed reached 96% of the six aspects of assessment given to teachers. It was concluded that learning media had practical categories.

The effectiveness of learning media was seen from students' learning outcomes. Students' learning outcomes on experiment I by using animated learning media in the learning process were analyzed by giving 20 multiple choice questions as test instrument. These multiple-choice questions were posttest whose entire questions were valid. The results of the effectiveness analysis of student learning outcomes in experiment I stated that the percentage of classical mastery (PKK) students was 87.5%. This PKK was obtained from posttest result of student learning after using learning media on procedure text in the form of animation. From the results of the effectiveness analysis of student learning outcomes on experiment I, it could be concluded that the students of class VII-8 learning had been completed because PKK ≥ 85%.

4.3 The Improvement of Learning Outcomes

The improvement of students' learning outcomes in experiment I was analyzed by using multiple choice instruments with 20 questions. Multiple choice questions were given to students before using procedure text

animated learnig media. This test instrument was called the pretest. The same questions were given to students after using animated learning media. This test instrument was called the posttest. The improement of student learning outcomes were then analyzed using N-Gain obtained from the pretest and posttest scores. From the calculation of the improvement in student learning outcomes by using Microsoft Office Excel 2007, then the average N-Gain was 0.73. The average was categorized high because if the gain was greater than 0.7 (g> 0.7) then it was categorized as high.

5. CONCLUSION

The development of procedure text learning media in the form of animation designed using adobe flash professional cs6 with the 4-D model (define, design, develop, and disseminate) from Thiagarajan has resulted a procedure text learning mediia in the form of a valid, effective animation to improve student learning outcomes. The conclusion of the research result of development of procedure text in animated learning media mentioned earlier can be described below.

Result of analysis of students and teachers' need based on direct observation and need analysis questionanaire given to student was 100% students felt that studying Indonesian language in class using texbook learning media was not fun, 100% of students loved and were interested in viewing animations, 97.5% of students preferred learning to use animated media instead of using textbooks. It was concluded that animated learning media on procedure text was needed by the students so that the learning situation was more concrete, interesting, and fun. 100% of teachers also gave a statement that teachers were in need of learning media in the form of animation in teaching.

The learning media in the form of an animated procedure text designed using adobe flash professional cs6 had met the three product quality criterias proposed by Nieveen namely valid, practical, and effective. Valid criteria were seen from the assessment given by the expert team in validating the learning media. The result of score percentage from the design expert of learning media was 92%, score percentage from media expert was 100%, and score percentage from the content expert was 85%, and score percentage from linguists was 98%. The average percentage from all expert teams was 94%. Therefore, the learning media is classified as very valid. Practical criteria is seen from the analysis of the percentage of student responses and teacher responses that have met the practical criteria because the percentage of all aspects of assessment for students and teachers' response reached more than 80%. Effective criteria was seen from student posttest result that classical mastery percentage (PKK) of student obtained 87.5%, it could be concluded that the students of grade VII-8 had completed the study because PKK ≥ 85%.

Procedure text learning media in the form of animation could improve student learning outcomes. This could be seen from the average N-Gain which obtained 0.73. The average was categorized as high because if N-Gain was greater than 0.7 (g> 0.7) it was categorized as high.

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