IDEAS

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Developing Interactive Multimedia for Teaching Reading Comprehension on Narrative Texts Based on South Sumatera Local Culture

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Abstract

The objectives of this study were to find out the validity, practicality, and effect of interactive multimedia for teaching reading comprehension on narrative texts based on South Sumatera local culture. This reasearch was development research by adapting the ADDIE model consisting of analysis, design, development, implementation, and evaluation. The subjects of this study were 25 fourth-semester students of Tridinanti University. This study found that The interactive multimedia for teaching narrative texts based on South Sumatera local culture were valid in terms of its contents, construct and after evaluated by three experts review. The total average score of the validity was 3.53. It was indicated at high validity level. This media was practical after evaluated in one-to-one evaluation with an average score (3.63) and small group evaluation with an average score (3.78). It was indicated at high practical Level. Moreover, it also had a potential effect after tried out in field test. It was determined by the result of students' achievement in reading comprehension test since 72 % of the students pass.

Keywords: development research; interactive multimedia; narrative texts, South Sumatera local culture

Introduction

In the process of teaching reading at Tridinanti University of Palembang, reading comprehension skills and strategies were still poor and undeveloped. The process of learning focuses on a lecturer-centered, book-centered, and more emphasis on rote memory than other practicable skills. Lecturers who are feeling like spoon feeding their students generally receive higher appreciation than lecturers who are not. The lecturers always give up the stimulating interaction activities such as games, role-plays, video, talk-based communicative activities in class and they are skeptical of the use of games as learning tools, especially in the university level.

To overcome reading comprehension skill, the lecturers can use multimedia to support the process. Thamarana, S. (2017) says that multimedia is an integration of many types of media. Multimedia combines five basic types of media in a learning environment such as text, video, sound, graphics, and animation. One way to develop multimedia to be innovative is by using interactive multimedia. Delliyanis, L. (2012) says that interactive multimedia is the process of empowering the user to control the environment by a computer. Interactive refers to the interaction between the student and the multimedia system in following the computer program so there is feedback. Interactive multimedia has navigation button that can be operated by the student. A student can choose what they want to do for the next process. Therefore, interactive multimedia is needed as the media for teaching reading comprehension.

Furthermore, to promote students' interest in reading comprehension, local culture in reading material is needed. Mukundan, J. (2003) proposes that it is more valuable to develop reading material that suit with students' background knowledge, experience, interest, emotion and culture. Also, Bao, Dat. (2016) says that the learning process should be relevant to the real situation and the culture. Considering the advantages, it is suggested to adapt and develop a local culture in reading material that matches students' interest and fulfills the educational goal.

Therefore, this study intends to conduct a development research to develop interactive multimedia for teaching reading comprehension on narrative texts based on South Sumatera local culture. This study was conducted in English education study program of Tridinanti University due to students' low reading comprehension skill and learning autonomy in this research site.

Method

This study used development research, the research procedure was adapted from ADDIE model consisted of five phases as described in Figure 1.
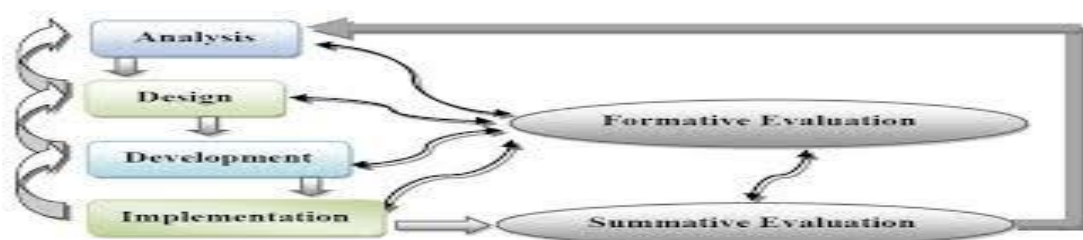

Figure 1: Phases of ADDIE model

Firstly, in analysis phase, the writers conducted students' reading level analysis and Students' need analysis. Second, in design phase, there was a design of content and form of interactive multimedia. Third, in development phase, the writers used storyboard design for interactive multimedia, and finally, in implementation phase, the developed product was revised in self-evaluation and expert review process. The subject of this study was 25 fourth semester students of Tridinanti University of Palembang

Technique for Collecting the Data

For collecting the data, the writers gave questionnaire and reading comprehension test. The questionnaires were given to the experts and students in one-to-one evaluation and small group evaluation to get information about their comments after reviewing and using the developed product using Likert scale. Meanwhile, reading comprehension on the form of multiple choice was made based on the students' need and students' reading level.

Technique for Analyzing the Data

To determine the validity, practicality, and potential effect of the product, the validity of the product was validated based on experts' judgment. After evaluating the product, the experts gave their comments through a questionnaire given by the writers. Their comments were used as a guide for revision of the developed product. To determine the validity level of the product, the total average score of questionnaires from three experts' judgment were calculated. The developed product was evaluated in the one-to-one evaluation and small group to find out whether developed product was practical or not. The category of the practicality of developed product was determined by the result of the questionnaire in one-to-one evaluation and small group evaluation. Students gave their judgments through a questionnaire. To determine the practicality level of the product, the average score of questionnaires from the students' judgment were calculated. Moreover, the potential effect was determined by the result of reading comprehension test of developed product in the field test. The writers analyze reading comprehension test result using item analysis. Item analysis was intended to assess the quality items of the test as a whole.

Results

Students' Reading Level Analysis

This analysis was taken from reading comprehension test result. There were 25 students as the subject of this research. This analysis is aimed to know students' reading level. For this purpose, Jennings informal reading assessment which was developed by Joyce given to the students which included reading texts at level 6, 7 and 8. The number of questions were 50 multiple choice questions. Each text consisted of three reading stages which are frustration, instructional, and independent. The students reading level analysis was determined by the highest result in instructional stage. As mentioned by Parker and Burns (2014) the instructional level as criterion to target reading intervention. Instructional stage becomes the basis in determining students reading level for reading assessment development.

Table 1. The Distribution of Students' Reading Level

Text Level	Reading Stage					
	Frustrational (Correct number ≤ 6)		Instructional (Correct number 7-8)		Independent (Correct number 9-10)	
	N	%	N	%	N	%

5	10	40%	6	24%	9	36%
6	8	32%	11	44%	6	24%
7	7	28%	13	52%	5	20%
8	9	36%	13	52%	3	12%
9	17	68%	5	32%	0	0 %

*N = Number of student % = Percentage of student

Students' Need Analysis

To get information about students' reading competence, students' interest in reading, the process of teaching and learning, the eagerness of students in reading, students' opinions about types of question, students' opinion toward text difficulty in available reading material, students' knowledge about South Sumatera culture, students' opinions about South Sumatera culture topics in reading materials and students opinion about interactive multimedia as media in teaching. There were 20 questions and there were 10 students who participated in answering the questionnaire. The results: (1) students had difficulty in comprehending the text; (2) students had low reading frequency; (3) students' eagerness in reading was high; (4) students seldom used interactive multimedia as a learning media; (5) students had much information about South Sumatera.

Design Phase

The writers took 20 narrative texts based on South Sumatera local culture. All the texts were calculated automatically in term of their readability levels using Flesh Kincaid online that matched to the students' reading level which was at level 7. To decide which texts to be written as the reading materials and reading comprehension test, the writers took one reading level which was suitable with the students' reading level, two reading levels which above students' reading level, and two reading level which below students' reading level. Therefore, it can be concluded that the readability of the text was at level 7, 8, and 9 since students reading level was at Level 7.

Table 2. The Result Selection of Reading Text Material

No	Title	Reading Level
1	*Si Pahit Lida*	8
2	*Raden Alid and Dayang Bulan*	6.5
3	*Antu Banyu*	9
4	*Serunting Sakti*	7.4
5	*Kelingking Sakti*	8.5
6	*The origin of Palembang Name*	6
7	*Langkuse and Putri Berambut Putih*	9
8	*Putri Serindu*	8.5
9	*Putri Kemarau*	7.9
10	*Raja Empedu*	7.8
11	*Putri Berias*	8.3

12	The origin of Sekayu Name	6
13	Putri Biyuku	9
14	Kemaro Island	7.8
15	Goa Putri	8.3
16	Naga Emas Danau Ranau	7.3
17	Bunga Talang Mamak	5
18	Bagus Kuning	5.8
19	Putri Kembangdadar	7
20	The origin of Pangkalan Balai Name	7.9

Development Phase

In development phase, the materials were transformed into an interactive multimedia. Thus, a storyboard was created to develop the interactive multimedia. The storyboard consisted of: (1) opening slide; (2) log-in; (3) home slide; (4) manual; (5) learning objectives; (6) materials; (7) evaluation; and (8) references. All the paper-based designs consisting the local-content-based narrative texts and the storyboard of interactive multimedia were then transformed into computer-based design by using Microsoft Powerpoint. The program was created and then launched in the form of software of interactive multimedia which was called as Prototype 1.

Implementation phase

Self Evaluation

After doing self evaluation, the writers found some errors in hyperlink, an openning page was less interactive, and the choice of theme and music was not match. From the findings, the writers revised the product and ready for having experts validation. The product that revised in self evaluation was called Prototype 2

Expert Validation

To know the validity of developed product. Three experts were involved to evaluate the content and construct of developed reading material and reading comprehension test. After reviewing the product, the three experts stated that the product was valid with some corrections. The writers, then, changed the developed product as corrected. Meanwhile, the result of expert reviews showed that the prototype of the product was categorized as having high validity as indicated by the average score of questionnaires on content and construct which was 3.53.

Table 3. The Recapitulation of Expert Review

No	Text	Content	Instructional Design	Media	Average Score
1	Si Pahit Lida	3.54	3.57	3.54	3.56
2	Raden Alid and Dayang Bulan	3.55	3.68	3.64	3.56
3	Antu Banyu	3.53	3.69	3.65	3.56
4	Serunting Sakti	2.58	2.55	2.52	2.55
5	Kelingking Sakti	3.65	3.64	3.65	3.65
6	The origin of Palembang Name	3.32	3.35	3.35	3.34

7	Langkuse and Putri Berambut Putih	3.56	3.54	3.56	3.55
8	Putri Serindu	3.41	3.45	3.46	3.44
9	Putri Kemarau	3.33	3.34	3.47	3.35
10	Raja Empedu	3.43	3.44	3.47	3.45
11	Putri Berias	3.34	3.35	3.38	3.36
12	The origin of Sekayu Name	3.65	3.65	3.69	3.66
13	Putri Biyuku	3.56	3.54	3.55	3.55
14	Kemaro Island	3.24	3.25	3.23	3.24
15	Goa Putri	3.56	3.46	3.45	3.49
16	Naga Emas Danau Ranau	3..43	3..48	3..45	3.45
17	Bunga Talang Mamak	3.23	3.26	3.78	3.42
18	Bagus Kuning	3.54	3.57	3.80	3.64
19	Putri Kembangdadar	3.41	3.48	3.73	3.54
20	The origin of Pangkalan Balai Name	3.42	3.45	3.78	3.36
TOTAL AVERAGE					3.53
REMARK					**Very High Valid**

Based on the information in Table 3, it can be concluded that the total average score of product had very high validity. To sum up, interactive multimedia for teaching narrative texts based on South Sumatera local culture was valid with **very high validity**. The product that revised in expert review was called Prototype 3.

One to One Evaluation

In this phase, 50 questionnaire in every text had given to three students in one-to-one evaluation to determine the practicality of developed product. The result can be seen in Table 4 below.

Table 4. The Recapitulation of One to One Evaluation

No		Student 1	Student 2	Student 3	Average Score
1	Si Pahit Lida	3.60	3.70	3.60	3.63
2	Raden Alid and Dayang Bulan	3.67	3.73	3.67	3.69
3	Antu Banyu	3.54	3.43	3.41	3.46
4	Serunting Sakti	3.47	3.62	3.72	3.60
5	Kelingking Sakti	3.55	3.52	3.43	3.50
6	The origin of Palembang Name	3.50	3.53	3.56	3.53
7	Langkuse and Putri Berambut Putih	3.56	3.53	3.58	3.55
8	Putri Serindu	3.64	3.63	3.78	3.68
9	Putri Kemarau	3.73	3.75	3.73	3.73

10	Raja Empedu	3.43	3.45	3.44	3.44
11	Putri Berias	3.42	3.45	3.44	3.43
12	The origin of Sekayu Name	3.46	3.46	3.43	3.45
13	Putri Biyuku	3.65	3.67	3.64	3.65
14	Kemaro Island	3.43	3.43	3.45	3.43
15	Goa Putri	3.53	3.35	3.36	3.41
16	Naga Emas Danau Ranau	3.65	3.68	3.69	3.67
17	Bunga Talang Mamak	3.56	3.57	3.54	3.55
18	Bagus Kuning	3.52	3.57	3.55	3.54
19	Putri Kembang dadar	3.32	3.37	3.34	3.34
20	The origin of Pangkalan Balai Name	3.43	3.47	3.44	3.44
TOTAL AVERAGE					**3.63**
REMARK					**Very High Practical**

The obtained score of practicality in one to one evaluation was 3.63 which was very high practical. The one to one evaluation was also intended to get comment toward the developed product, such as (1) the students are able to use the depeloved product independently at home; (2) the developed product gave much information about culture in South Sumatera. Then, the product that revised in one to one evaluation stage was called as Prototype 4.

Small group evaluation
To determine the practicality of the developed product, one questionnaire in every text had given to five students in small group evaluation. The obtained score of practicality in small group evaluation was 3.78 which was very high practical. The small group evaluation was also intended to get comments toward developed product, such as (1) the students felt fascinating to learn developed product because it was very attractive; (2) The students' eagerness in learning developed product was high. The product that revised in one to one evaluation stage was called as Prototype 5.

Field Test
In field test, a real class of the fourth semester students of Tridinanti University of Palembang consisting 25 students were involved, however, the students participating in one-to-one and small group evaluation were not involved anymore. In this phase, the students were individually given developed reading comprehension test consisting 50 multiple-choice questions. The students' score in the field test was used to measure the effctiveness, the validity, the reliability, the

difficulty index and discrimination index of developed reading comprehension test. As the findings, reading comprehension test could be categorized as effective because there were 18 students (72%) out of 25 students in reading comprehension test reached average category which was between 75 and 85.

Table 4. The Recapitulation of Validity, Practicality, and Potential Effect

Validity			Practicality		Potential Effect
Content	Construct	Media	One to One	Small Group	Field Test
3.47	3.73	3.53	3.63	3.78	72 %
Very High Valid (3.53)			Very High Practical (3.71)		Had Potential Effect

Discussion

The developed product was interactive multimedia for teaching narratives texts based on South Sumatera local culture to Tridinanti University of Palembang. Development research was applied in this study. The procedures of this study consisted of five phases: analysis, design, development, implementation, and evaluation. In this study, formative evaluation model proposed by Tessmer (1993) was also used in the evaluation phase to improve the quality of the intervention. There are three main criteria for quality of the intervention, i.e.: validity, practicality, and potential effect. Before the product was created, the writers did some analysis. This analysis was aimed to identify the target needs of student in learning product. Reiser and Dempsey (2007) state that target needs cover three aspects which are: necessities, lacks, and wants. It means the teacher should make some consideration before designing of interactive multimedia to facilitate them in achieving the learning goal. After gaining information and collecting the content, the writers used them to make some plan or strategy regarding to the multimedia project.

Taylor (2004) points out that the objective of the designing phase is to clearly provide the information resources and guidance during the developing phase. It can also provide what objective of the students will accomplish while using the multimedia program. The teacher also made a lesson plan as a guidance of teaching in the class. It is line with Kanellopoulou and Darra (2018) insist that lesson plan identifies the process needed to meet the learning objective, the materials equipment needed, and the activity. Interactive multimedia was transformed into computer-based material. UNESCO (2012) insists that the teacher need to initiate to use technology in learning. Interactive multimedia were needed as a media for teaching and learning process in the class. The use of technology gives benefit to students in the process of teaching. It proven by Jenson and Droumeva (2017) which showed that the use of ICT gives students positive attitude to improve their ability in the process of teaching. The implementation of ICT must be supported by the

adequate facilities in the school.

The implementation of ICT will not run well if there is no contribution from the school. Hollands and Escueta (2019) point out that the importance of providing educational technology tools at school as the facilitation of teaching process. When the product was implemented in the class, the developed product was very high valid after being evaluated in the expert review phase in terms of its content, instructional design, and media. Moreover, the developed local content-based reading comprehension was effective to be used as reading assessment as supported by the research done by Monica, S., & Vianty, M. (2019) . It was caused by the development of the product was on the basis of the target needs.

Conclusion

Conclusion

Based on the findings of the study, it was found that there were three conclusions written about findings which were described below: 1. The interactive multimedia for teaching narrative texts based on South Sumatera local culture were valid in terms of its contents, construct and after evaluated by three experts review. The total average score of the validity was 3.67. It was indicated at high validity level. 2. The interactive multimedia for teaching narrative texts based on South Sumatera local culture was practical after evaluated in one-to-one evaluation with an average score (3.69) and small group evaluation with an average score (3.74). It was indicated at high practical Level. 3. The interactive multimedia for teaching narrative texts based on South Sumatera local culture had a potential effect after tried out in field test. It was determined by the result of students' achievement in reading comprehension test since 72 % of the students pass.

Suggestion

First, lectures are suggested to find an appropriate strategy for teaching reading. The lecturers should also use ICT-based learning and participate actively in introducing local culture to the students which can be done by giving them local culture topic as the instructional material. Second, the students are expected to expand their reading frequency and reading competence. They should also read and learn more about culture in South Sumatera culture so they can learn English and their own culture together.

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