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Proper Assessment of Learning Materials Based Interactive Multimedia According to Expert Validator of Materials in Class 10th of Tritech Informatika Vocational School Medan, Learning Year 2017/2018, Indonesia

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Abstract *: learning activities include developing teaching materials that are carried out to respond to students so that they are more interested in learning that will be associated with current technological developments. One product of technology that can be used to develop teaching materials for the learning process is interactive multimedia which is a combination of various media in the form of text, graphics, audio, and interactions that are used to convey information messages from sender to receiver equipped with a controller which can be operated by the user. Efforts can be made to make learning effective one of which is the use of multimedia in interactive learning. Learning by using multimedia will be more interesting, more effective, efficient learning time, improve the quality of learning so that the objectives of a learning activity can be achieved. The purpose of this research is to improve learning outcomes, including improving aspects development research related to learning activities including developing teaching materials to respond to students to be more interested in learning that will be associated with current technological developments. This research method is development research (Research and Development) which is a study used to produce certain products and test the effectiveness of these products. The researcher found a method in interactive teaching in using multimedia as an improvement in the quality of students' loyalty in the classroom.*
Keywords *: teaching method; multimedia; learning*

I. Introduction

Efforts to improve learning outcomes continue to be carried out including improving aspects related to learning activities including developing teaching materials carried out to respond to students to be more interested in learning that will be associated with current technological developments. One product of technology that can be used to develop teaching materials for the learning process is interactive multimedia which is a combination of various media in the form of text, graphics, audio, and interactions that are used to convey information messages from sender to receiver equipped with a controller which can be operated by the user. Efforts can be made to make learning effective one of which is the use of multimedia in interactive learning. Learning by using multimedia will be more interesting, more effective, efficient learning time, improve the quality of learning so that the objectives of a learning activity can be achieved. Munadi (2013: 152) states that the advantages possessed by interactive multimedia as learning media include: (1) students are involved auditively, visually, and kinetically; (2) provide an individual climate of affection; (3) Increase learning motivation; (4) Provide feedback; and (5) the use control is entirely with the user.

Tritech Vocational School which will be the target of research is Information Technology Vocational High School. This school has implemented a learning system that utilizes technology as a medium and aids in learning activities, but not all subject teachers

apply the same thing. Indonesian language learning in particular still uses teaching books as a guide and the only source of learning. This is one of the causes of learning activities in Indonesian language subjects tend to be monotonous and boring, because learning activities are still teacher-centered, so there is no interaction with students. The teaching materials that have been available so far are considered not to vary, relying solely on textbooks, newspapers or magazines so as to trigger communication that tends to be in the same direction that makes students inactive and not even critical. This was also explained by Indonesian language subject teachers at Tritech Informatika Vocational School Medan when researchers conducted interviews with Indonesian language subject teachers named Ernatati, S.Pd., and Jayanti Maharani, S.Pd, that the teaching materials used were only books text published by the Ministry of Education and Culture.

The development of science and technology that has been utilized is considered to provide the possibility to develop teaching materials. This teaching material will be a tool or learning aid that is more effective in delivering material and efficient in the use of time and energy. Some of the reasons for the use of interactive multimedia-based teaching materials can improve the effectiveness of the learning process, namely: 1) allowing direct interaction between students and subject matter, (2) the learning process can take place individually according to students' learning abilities, (3) able audio visual to increase interest in learning, (4) able to create a continuous learning process.

II. Literature Review

2.1 The Nature of Teaching Materials

Teaching materials are all forms of material used to help teachers or instructors in carrying out teaching and learning activities in the classroom. The material in question can be written or unwritten material. Ministry of National Education (2008: 6) states, "Teaching materials are all forms of material used to help teachers / instructors in carrying out teaching and learning activities. With teaching materials, it allows students to learn a competency or basic competency in a coherent and systematic manner so that accumulatively able to master all competencies as a whole and integrated (Majid, 2012: 173). Prastowo (2013: 297), revealed that teaching materials are a set of materials that are systematically arranged, both written and not so as to create an environment or atmosphere that allows students to learn. There are also those who argue that teaching materials are information, tools and texts needed by the teacher or instructor for planning and reviewing the implementation of learning.

Teaching materials are a set of learning tools or tools that contain learning materials, methods, boundaries, and ways of evaluating systematically and interestingly designed in order to achieve the expected goals, namely achieving competence or sub-competence in all its complexity (Widodo and Jasmadi in Lestari, 2013: 1). Another opinion describing the material or learning material is basically the "content" of the curriculum, which is in the form of subjects or fields of study with topics / subtopics and details (Ruhimat, 2011: 152) Based on some understanding of teaching materials can be concluded that teaching materials are a set subject matter or a set of tools and materials systematically compiled by the teacher and used in learning activities so as to create an environment or atmosphere that allows students to learn and be able to achieve predetermined goals.

2.2 Definition of Media

The word media comes from Latin *medius* which literally means 'middle', 'intermediary' or 'introduction'. In Arabic the media is an intermediary or delivery message from the sender to the recipient of the message. Gerlach & Ely (1971) in Azhar Arsyad (2015) said that media when understood broadly is human, material, or event that builds conditions that make students able to obtain knowledge, skills, or attitudes. Teachers, textbooks, and school environments are media. More specifically, the notion of media in the teaching and learning process tends to be interpreted as graphical, photographic, or electronic tools to capture, process, and reconstruct visual or verbal information.

Learning media is everything that can be used to convey messages or information in the teaching and learning process so that it can stimulate the attention and interest of students in learning. Learning technologies are studies and ethical practices to facilitate learning and improve performance by creating, using, and managing appropriate technological processes and resources. Learning resources are understood as devices, materials, equipment, arrangements, and people where learners can interact with the surrounding environment which aims to facilitate learning and improve performance (Januszeswki and Molenda, in Azhar Arsyad: 2015).

2.3 Understanding of Multimedia

Multimedia comes from Latin, which is from the word "multi" which means a lot; various and "medium" which means something that is used to convey or bring something. Some definitions of multimedia according to some experts include:

1. In accordance with the opinion of Vaughan (1994: 4) in Azhar Arsyad (2015: 3) multimedia is "various combinations of text, graphics, sounds, animations, and videos that are conveyed using computers or other electronic devices".
2. Multimedia refers to a combination / synchronization of media flow (any synchronized media stream) ". An example of multimedia is moving images that are synchronous with sound (including television broadcasts and modern films) (Green & Brown, 2002: 2) in Azhar Arsyad (2015).
3. Heinich, Molenda, Russell & Smaldino (1999: 229) in Azhar Arsyad (2015) argues, "multimedia refers to various combinations of two or more media formats that are integrated into the form of information or instruction programs".

Based on these opinions, it can be concluded that multimedia is a combination of various media in the form of text, graphics, audio, and interaction and is used to convey messages or information from the sender to the recipient of the message or information.

2.4 Negotiation Text

Negotiation is a form of social interaction that functions to reach agreement between parties who have different interests. In negotiations, the parties try to resolve the differences with dialogue. Negotiations are carried out because interested parties need to agree on issues that require joint settlement. Another definition of negotiation according to E. Kosasih (2014: 85) is:

1. Negotiation is a process of joint decision-making between several parties that have different interests.
2. Negotiation is a way of making decisions that can be agreed upon by two or more parties to satisfy the satisfaction of interested parties.

III. Research Methodology

This type of research is development research (Research and Development) which is a study used to produce certain products and test the effectiveness of these products. This research develops Indonesian language teaching materials in interactive multimedia-based negotiating text material for grade X SMK level. This research and development refers to the theory of teaching material development proposed by Borg and Gall (in Sugiyono, 2015: 35) in the book Research Methods and Development (Research and Development).

Agreeing with Sugiyono, Sukmadinata (2012: 164), reveals that R & D is a strategy or research method that is powerful enough to improve practice and a process or steps to develop a new product or perfect an existing product that can be accounted for. The steps of the research and development process indicate a cycle, which begins with the need, problems that require solving using a particular product. Development research is also widely used to develop teaching materials, learning media and learning management.

This research was conducted at Tritech Informatika Vocational School Medan which was addressed at Jalan Bhayangkara No. 484, Indra Kasih Village, Medan Tembung Subdistrict. The reason for choosing this school is Tritech Informatika Vocational School Medan is one of the technology-based Vocational Schools that has very adequate facilities for conducting research using interactive multimedia as teaching material. Each class is facilitated by one type of LED television monitor unit that can be connected using an HDMI cable for students. Other facilities are a laboratory for multimedia majors and laboratories for computer network engineering majors that can be used as a means of supporting learning. The school program that applies one student one laptop (one student one laptop) is very possible to use interactive multimedia as a learning medium that can support student learning outcomes. As far as the knowledge of researchers is at this school has also not been conducted research on the same problem. This research was conducted from March to April 2018.

The development of interactive multimedia-based teaching materials on negotiating text material has been validated by 2 material experts, namely the lecturer of the Postgraduate of Medan State University and an Indonesian language subject teacher. The purpose of material expert validation is so that the content of the material in the teaching material is in accordance with the students' needs and the clarity of the delivery on the material concept.

The validation stage is carried out by the validator by reviewing the teaching materials that have been designed. Instrument validation sheet for learning material experts consists of indicators of designation, namely the suitability of the material with SK and KI, the accuracy of the material, the updating of the material, and encourage curiosity. The validator scores each indicator, then fills out the improvement notes or general comments to revise the improvement of the teaching material to be tested on the field.

Based on the results assessment of the material expert validation base on the proper aspects of the contents were obtained the result is 98.3% with a very good category for interactive multimedia-based teaching materials on negotiating text material. Based on the results obtained from expert validation, it can be concluded that interactive multimedia-based teaching material on this negotiating text material is "feasible" used in learning Indonesian, especially in negotiating text material. Data from the material validation of the experts on the feasibility aspects are as follows:

Table 1. Obtained Assessment Results by Material Expert Validators on Aspects of The Proper content

Aspect	Sub-Component	Assessment Indicator	Total Score of Percentage	Category
Content	Material appropriateness of competency standards and content.	1. Completeness of Material	100 %	very well
		2. Graduation Material	100 %	very well
		3. Depth of material	80 %	very well
	Material Accuracy	4. Accuracy Fact and Data	100 %	very well
		5. Accuracy Concept and Definition.	100 %	very well
		6. Accuracy example and case	100 %	very well
		7. Accuracy picture, diagram, table, and ilustration.	100 %	very well
		8. Accuracy the terminology	100 %	very well
	Material Update	9. Accuracy Material with the development of linguistic.	100 %	very well
		10. Example and case happen in daily activities.	100 %	very well
	Encouraging Curiosity	11. Encouraging Curiosity	100 %	very well
		12. creating the ability in asking question.	100 %	very well
	Total		**98.3 %**	**very well**

The results of the instrument analysis of the validation sheet can be seen in the following percentage score table.

Table 2. Percentage of Assessment Results on Aspects of Proper Content

No	Assessment Indicator	Score of Percentage	Category
1	Accuracy material competancy standards and contents	93,3 %	very well
2	Accuracy material	100 %	very well
3	Material Update	100 %	very well
4	Encouraging Curiosity	100 %	very well

Based on the table above, it can be seen that the average percentage score for each assessment indicator is 93.3% for the suitability of the material with competency standards and contents, 100% for material updates, and 100% to encourage curiosity. Based on the

results of the material expert's assessment it can be concluded that the feasibility aspect of the contents of the topic is very good.

Furthermore, the assessment of the material expert validator is related to aspects of language feasibility. The percentage obtained from the results of the material expert's assessment related to the feasibility aspect of the language is 82.9 with a very good category. The following is the presentation of the assessment related to the language feasibility aspects by material experts:

Table 3. Results of Assessment Results by Material Expert Validators on Aspects of Language

No.	Sub-component	Assessment Indicator	Total Score of Percentage	Category
1	Clearly	Appropriate the structure of sentences	80	very well
		The effective structure	100	very well
		Standard terminology	100	very well
2	Communicative	Understanding a message and an information	100	very well
3	Dialogue and interactive	The ability for giving a motivation to students	100	very well
		the ability to persuade the student to think critically	80	very well
4	Appropriating with Students' development knowledge	Appropriating with Students' development knowledge	80	very well
		Appropriating students emotionally	80	very well
5	Appropriating with language	Appropriating the spelling and the structure	100	very well
		Total	**91.1 %**	**very well**

Assessment of the properness aspects of language consists of assessment indicators, namely: straightforward, communicative, dialogic and interactive, conformity with the development of students, conformity with the rules of language. Below is a presentation of the percentage of the results of the assessment on each indicator:

Table 4. Percentage of Assessment Results by Material Validators on Aspects properness of Language

No.	Assessment Indicator	Average score of percentage	Category
1	Accuracy material competancy standards and contents	93.3	very well
2	Accuracy material	100	very well
3	Material Update	90	very well
4	Encouraging Curiosity	80	very well
5	Accuracy material	100	very well
Total		**92.66**	**very well**

Based on the table above, it can be seen that the average score of each assessment indicator is 93.3 for straightforward language, 100 for communicative language, 90 for dialogical language, 80 for language compatibility with student development, 100 for language compatibility with development, and 100 for the use of terms, symbols or icons. It can be concluded that the aspect of content eligibility based on the results of the assessment by material experts is very good category.

Material experts provide scores in the form of assessment and give advice to researchers. Suggestions given in the form of suggestions submitted directly or delivered in writing, are expected with the advice given can be used as a reference for improvement of interactive multimedia-based negotiating text teaching materials developed. The following is a suggestion from the expert validator that the material will be presented in the following table**.**

Table 5. Suggestions from Material Experts

No	Sugestions
1	Material must be expanded again
2	Add References
3	See the selection of words
4	See the spelling and structure
5	Examples of texts presented should be events in everyday life

For individual trials, this was carried out three students in 10th in Tritech Infromatika Vocational School, Medan. This trial aims are to identify deficiency product and student responses to the products developed. The results of the trial data can be seen in the following table.

Table 6. Results of Individual Trial Response Analysis

No	Assessment Indicator	Respondent			Total Score	Average	Criteria
		1	2	3			
Quality of Material Learning							
1	Appropriate Material	4	5	4	13	86 %	very well
2	Appropriate the procedure of teaching	4	4	4	12	80 %	very well

3	The easiness of understanding sentencess in the text	4	3	4	11	73 %	very well
4	The easiness of understanding in learning	4	4	4	12	80 %	very well
5	The accuracy of the order of presentation	4	4	4	12	80 %	very well
6	Exercise Sufficiency	4	4	4	12	80 %	very well
7	Feedback clarity	4	4	4	12	80 %	very well
8	Help learning with the program	4	4	4	12	80 %	very well
Technical / Display Quality							
9	The beauty of the screen	4	4	3	11	73 %	very well
10	Text readability	4	3	4	11	73 %	very well
11	Picture quality	4	4	4	12	80 %	very well
12	Color composition	4	4	4	12	80 %	very well
13	Navigation	4	4	4	12	80 %	very well
14	Interaction	4	4	4	12	80 %	very well
Average					**166**	**78,9 %**	**very well**

The conclusion from the results of individual test assessments, namely interactive multimedia developed including the criteria for "Good" with an average percentage of 78.9%. Results The average percentage obtained based on the assessment aspects in the form of learning material quality averaged 77.6% and the technical quality / display of interactive multimedia-based teaching materials gained an average of 78.9% with good criteria.

Whereas for the Phase III trial, an individual scale test was conducted involving respondents of 9 students, namely 3 high achievers, 3 moderate achievers, 3 low achievers. The data from the results of this small group trial are intended to find out the weaknesses and barriers experienced when these interactive multimedia-based teaching materials products are used. The test results can be seen in the following table.

Tabel 7. Results of Small Group Trial Response Analysis

No	**Assessment Indicator**	**Respondent**									**Total of Score**	**Average**	**Criteria**
		1	2	3	4	5	6	7	8	9			
Quality of Material Learning													
1	Appropriate material	5	4	4	4	5	5	4	4	5	40	89 %	very well
2	Procedure clearly in learning	5	5	5	4	5	4	5	5	5	43	96 %	very well

3	The easiness of under-standing sentences in text	5	5	4	5	4	5	4	5	4	42	93 %	very well
4	the easiness of understanding in learning	5	5	5	4	4	4	5	4	4	40	89 %	very well
5	The appropriateness in ordering presentation.	5	5	4	5	5	4	5	5	5	43	96 %	very well
6	Exercise Sufficiency	5	5	4	5	4	5	4	5	4	41	91 %	very well
7	Feedback clarity	4	5	4	4	4	4	5	4	5	39	87 %	very well
8	Help learning with the program	3	4	4	5	4	5	4	5	4	38	84 %	very well
Technical / Display Quality													
9	The beauty of the screen	4	5	4	5	5	4	4	5	3	39	87 %	very well
10	Text readability	5	5	4	5	4	3	5	4	5	40	89 %	very well
11	Picture quality	4	5	4	5	4	5	5	4	4	40	89 %	very well
12	Color composition	5	4	4	4	5	4	4	5	5	40	89 %	very well
13	Navigation	5	4	5	4	4	5	3	4	4	38	84 %	very well
14	Interaction	5	5	4	4	3	3	4	4	5	42	93 %	very well
Average											**565**	**89 %**	**very well**

The results of the small group trials in the table above, namely the students' perceptions of teaching materials that have been developed showed an average percentage of 89% with the criteria of "Very Good". The results of this trial were obtained after an improvement or revision of individual trials.

This phase IV trial was tested on a limited scale involving 34 respondents of class 10th Tritech Informatics Vocational High School students, Medan. The data from the small group trial are intended to find out some of the weaknesses and obstacles experienced when this interactive multimedia-based learning product is used.

Table 8. Results of Field Trial Response Analysis

No	**Assessment Indicator**	**Respondent**					**Total of Score**	**Average**	**Criteria**
		1	2	3	4	5			
The quality of Material Learning									
1	Appropriate material					34	170	89 %	very well
2	Procedure clearly in learning					34	170	96 %	very well

3	The easiness of understanding sentences in text					34	170	93 %	very well
4	the easiness of understanding in learning					34	170	89 %	very well
5	The appropriateness in ordering presentation.					34	170	96 %	very well
6	Exercise Sufficiency				4	30	166	91 %	very well
7	Feedback clarity				2	32	164	87 %	very well
8	Help learning with the program				3	31	167	84 %	very well
Technical/ Display Quality									
9	The beauty of the screen				4	30	166	87 %	very well
10	Text readability					34	170	89 %	very well
11	Picture quality					34	170	89 %	very well
12	Color composition					34	170	89 %	very well
13	Navigation					34	170	84 %	very well
14	Interaction					34	170	93 %	very well
Average total							**2363**	**99,28 %**	**very well**

The results of the field trials in the table above, namely students' perceptions of interactive multimedia-based teaching materials developed showed an average percentage of 99.28% with the criteria of "very good". The results of this trial were obtained after an improvement or revision of the small group trial.

V. Conclusion

The results of the development of interactive multimedia-based teaching materials in the negotiating text in this study are interactive CDs. Teaching materials developed have carried out feasibility tests by experts, both material experts and design experts. Validation results by material experts were stated to be "very good" with all aspects of assessment, validation by design experts was stated to be "very good" with all aspects of assessment and response of language teachers getting very good titles. The results of individual trial results are declared "good". The acquisition of the results of a small group trial was declared "very good". The results of the field trials were declared "very good". The results obtained from expert validation and the results of the trial state that interactive multimedia-based negotiating text teaching materials should be developed in class X students at Tritech Informatics Vocational School Medan.

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