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Development of Multimedia Whiteboard Annimation to Improve the Understanding of Writing Scientific Papers of Non-Educational Students

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ABSTRACT

This study aims to develop multimedia with whiteboard animation techniques to improve students' ability to develop scientific papers. The research method used is research and development (R&D). The research and development steps are based on the four-D model, namely the defining stage (define), the design stage (design), the development stage (develop) and the dissemination stage (disseminate). The subjects in this study were Pokjar Cempaka Pati students consisting of 20 students. Data collection in the field was carried out using questionnaires given to non-basic students at the Faculty of Economics who took Scientific Paper courses. The data is analyzed descriptively, that is, it gives meaning to each data collected, and is presented in the form of percentages and graphs. The results showed that (1) based on the assessment of whiteboard animation media validators, it was a range of 82.00% - 96.00% of valid categories, (2) Whiteboard animation media is very effective in increasing understanding in student scientific work courses.

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1. INTRODUCTION

Teaching media is a learning aid that is quite important in tutorial activities. The teaching media encourages the emergence of student activities. Activeness encourages and demands that students express opinions and listen to the opinions of others (Arsyad, 2012). Communication, both in the form of interaction between students and interaction with tutors, is the motor for the emergence of demands for independent learning before the face-to-face process occurs. Students are required to study and search for materials as a capital interaction during tutorials.

Teaching media has a considerable influence in the effective tutorial process. Education experts conclude that through the teaching media tutors can influence the development of interests, attitudes, social, emotions and reasoning. This result will be even more optimal if it is also accompanied by the tutor's skills in managing communication interactions (Usman, 2001). The success of the tutorial depends largely on the smooth interaction of communication both between students and with tutors. Disrupted interactions will result in the appearance of misperceptions and the message received is not entirely what the messenger intended. Tutorials are intended to serve only as a learning aid, as a forum for students to communicate learning difficulties.

Students feel satisfied in obtaining information from the learning media displayed by the teacher, so the satisfaction of the learner will bring a sense of certainty about the benefits of the media they use so that it raises the need for the presence of the media (Purwanto, 2008). The satisfaction of the learner will be suspected by the teacher so that the teacher's need for the presence of the media arises.

The level of dependence is determined by the individual user and the user's activeness. From the user side, the level of dependence is measured by the ability of the media to satisfy the needs of the user. If the media succeeds in satisfying the needs of users, users will become more dependent on the learning media, on the other hand, if the media does not succeed in satisfying user needs, dependence on the media will decrease. The process of creating a sense of dependence starts from the interest of media users. The media displays processes and content that are able to meet the needs of users, both from the aspect of understanding, the aspect of entertainment and the aspect of fullness of information. Cognitive motivation and affective motivation encourage an increase in the level of satisfaction which further drives the level of involvement in the learning process (Daryanto, 2010). The main learning process is the learning process that students must carry out in independent learning. However, in the scientific work course, the tutorial process is the main forum for students to gain field experience from supervisors in making ilmiha works as a final project. Guidance cannot be done piece by piece without an overall picture of the cycle, nor can it be done with the dominance of the tutor during the guidance process without regard to the level of progress of the student's work. The emphasis of the concept without being followed by the student's work process will not produce students' ability to carry out scientific paper writing. Writing scientific papers demands skills, knowledge, attitudes (behavior), and values so as to influence the results obtained (Triyanto, 2010). The results of writing student scientific papers are also influenced by the media used by teachers.

Learning media greatly affects the tutorial process (Indriasih, et al., 2021). The right media is the media used to describe the process as a whole and can also describe each step of the process in detail (UT Cartil writing guide). The guidance of each meeting is formulated specifically and clearly to achieve the main goal, which is that students are able to carry out and compile reports. The media becomes the right solution to visualize the main goals achieved through the goals of each meeting.

Based on the results of a preliminary study conducted on students of the Faculty of Economics at Pokjar Cempaka Pati, it was obtained that students still have difficulty understanding how to write scientific papers. Based on the observation results of 72.5% of students still do not understand how to write ilmia works. On the other hand, in reality in the field, there are still tutors who teach karil courses who do not use the right media. Some tutors still rely on the method of exposure to the core teaching materials and others use projectors to convey the core teaching materials. Karil guidance is carried out individually. Tutors rarely reveal students' individual mistakes in carrying out karil and the corrective steps belong to one class. The tutors have not combined various teaching media to spur active interaction during the tutorial, so it needs an initiation that encourages the tutor to create or use a variety of teaching media. Indriasih (2020) stated that learning media that is interesting, creative and innovative, is very necessary, this is intended so that children are motivated in learning. One of the most suitable media to make it easier for students to understand how to write scientific papers is Whiteboard Annimation, which is a Video-based Animation media. Video animation with the specifications of learning media products based on Video Scribe Whiteboard Annimation is intended to improve students' ability to write scientific papers. Multimedia-based learning media through Video Scribe

Whiteboard Annimation is expected to help tutors and students. So that there is an increase in the ability of students to carry out scientific work making.

2. METHODS

This research method uses the design and approach of research development research and development (R&D). This research was carried out at Pokjar Cempaka Pati in the management department. The subjects of the study were 20 students majoring in management at Pokjar Cempaka Pat. The development research steps refer to the 4-D research and development model which consists of four stages, namely: define, design, develop, disseminate (Thiagarajan, Semmel and Semmel 1974; Sumaji 2015). Data collection through. After obtaining the data, it is further analyzed by qualitatively descriptive and quantitative analysis.

3. FINDINGS AND DISCUSSION

In this study, the development of Blended Learning-oriented Student Worksheets was carried out on the material of building a flat side room. In this development research, the stages of Define, Design, Develop and Disseminate are based on the modification of the 4-D development model from Abbas (2002).

In the define stage, the initial-final analysis stage of the researchers looked for and determined basic problems through observations and interviews of UT students of the Faculty of Economics Pokjar Cempaka Pati. with the aim of being able to establish fundamental problems in developing media. As the initial data that has been obtained is that the media is still not interesting. The next stage in this study is the development stage (Develop), which will be developed by the researcher is media whiteboard annimation. At this stage, another example is obtained: the validity and effect of the Whiteboard Annimation Media.

Validity of Whiteboard Annimation Media

The assessment of the validity of the Whiteboard Annimation media conducted in this study is based on expert perception. This test is performed to test the validity of each statement item in measuring its variables. Validity testing in this study was carried out by correlating the scores of each item statement aimed at the respondents with the total score for all question items in Table 1 Data analysis was used to draw conclusions from the data obtained. Data processing is carried out using percentages (%), the data from this analysis will later be described to provide an overview of research results globally. Based on the data of the questionnaire filled out by the expert in outline can be seen in the

Table 1. Answer Results of User Response Questionnaire Expert Assessment Material / Course Content

No	Topic Literature	Score	Mean	Achievement	Criterion
1	The appropriateness of the topic on the development of whiteboard animation media	141	3,44	85,98%	good
2	The suitability of the material presented on the development of whiteboard animation media	140	3,41	85,37%	good
3	KI KD conformity	138	3,37	84,15%	good
4	Compatibility with K13	138	3,37	84,15%	good
5	Compatibility of the image with the material	141	3,44	85,98%	good
6	Suitability of the scope of the material in the medium of Whiteboard animation	138	3,37	84,15%	good
	Feasibility of material illustration			92,68%	
7	Feasibility of material illustration	152	3,71	87,80%	good
8	Ease of understanding the Language	144	3,51	86,59%	good

9	Evaluation success rate	142	3,46	85,98%	good
10	Attractiveness of the format of writing the content of the material	141	3,44	85,98%	good
	Mean		3,45		good

Source: processed data, 2021.

Based on table 1 above, a minimum score of 3.41 was obtained on the questionnaire from the KD KI Suitability question. The highest questionnaire score was 3.71 on questions Material was able to provide motivation. The average of the 10 (ten) questionnaire questions is 3.45, so the Whiteboard Annimation media developed is in the good category. From figure 4.1 above the scatter it can be seen that the results are in the range of 84.00% - 93.00% indicating that respondents' perceptions of the Material Expert Assessment Response / Course Content are valid

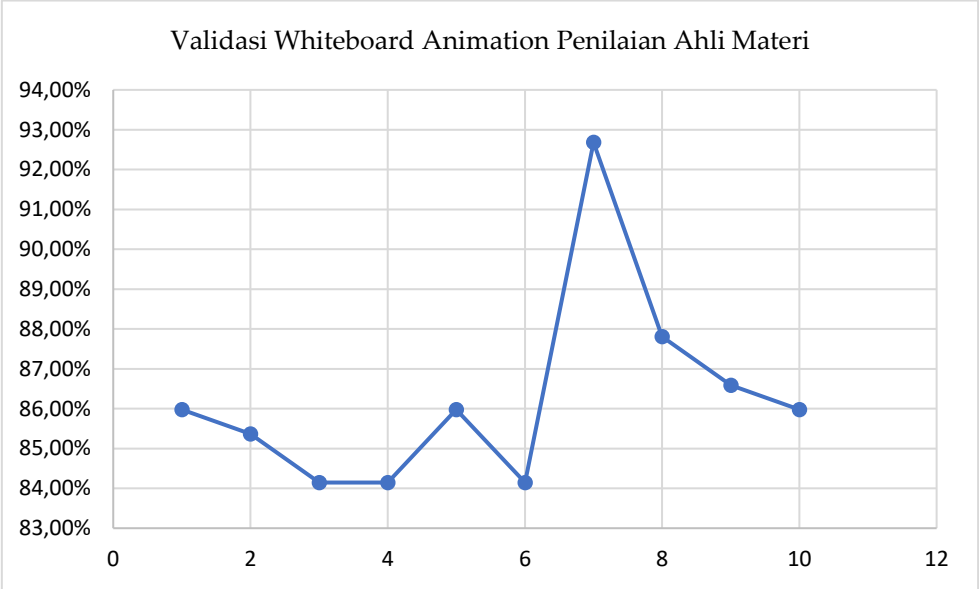

Figure 1. User Answer Diagram Expert Assessment Material/Course Content

Field Trials of Video scribe Learning Media MK Scientific work

Field Trials of Video scribe Learning Media MK Scientific work were small in students as respondents. This test is performed to test the validity of each statement item in measuring its variables. Field testing in this study was carried out by correlating the scores of each item statement addressed to respondents with the total score for all question items in Table 2. Data analysis is used to draw conclusions from the data obtained. Data processing is carried out using percentages (%), the data from this analysis will later be described to provide an overview of research results globally. Based on the data of the questionnaire filled out by students, the outline of several experiments can be described in Table 2.

Table 2. Trial Response Questionnaire Answer Results

No	Question	Score	Mean	Achievement	Criterion
1	This teaching media can make it easier for you to compile a scientific work	140	3,41	85,37%	good
2	The use of this media can encourage you to compile scientific works	150	3,66	91,46%	good
3	You can easily understand the subject matter in this medium	144	3,51	87,80%	good
4	There is a suitability of the material presented in the development of this teaching media to compile scientific papers	142	3,46	86,59%	good

No	Question	Score	Mean	Achievement	Criterion
5	Illustration of images / videos in teaching media can clarify the material	141	3,44	85,98%	good
6	The appearance of this medium is attractive and easy to understand	141	3,44	85,98%	good
7	This media makes it easier to understand the material of scientific work	143	3,49	87,20%	good
8	The language used in this teaching media is easy to understand	136	3,32	82,93%	good
9	This medium helps me in compiling scientific papers	158	3,85	96,34%	good
10	This teaching medium, sngat clear because there are writings, images and sounds	146	3,56	89,02%	good
			3,51		

Source: processed data, 2021

Based on table 2 above, a minimum score of 3.32 was obtained on the questionnaire from the questions the language used in this teaching media is easy to understand. The highest questionnaire score was 3.85 on the question This medium helped me in compiling scientific papers. The average of the 10 (ten) questionnaire questions is 3.51, so the Whiteboard Annimation media developed is in the good category. From figure 2 above the scatter it can be seen that the result is a range of 82.00% - 96.00% indicating that the perception of the user (student) is valid.

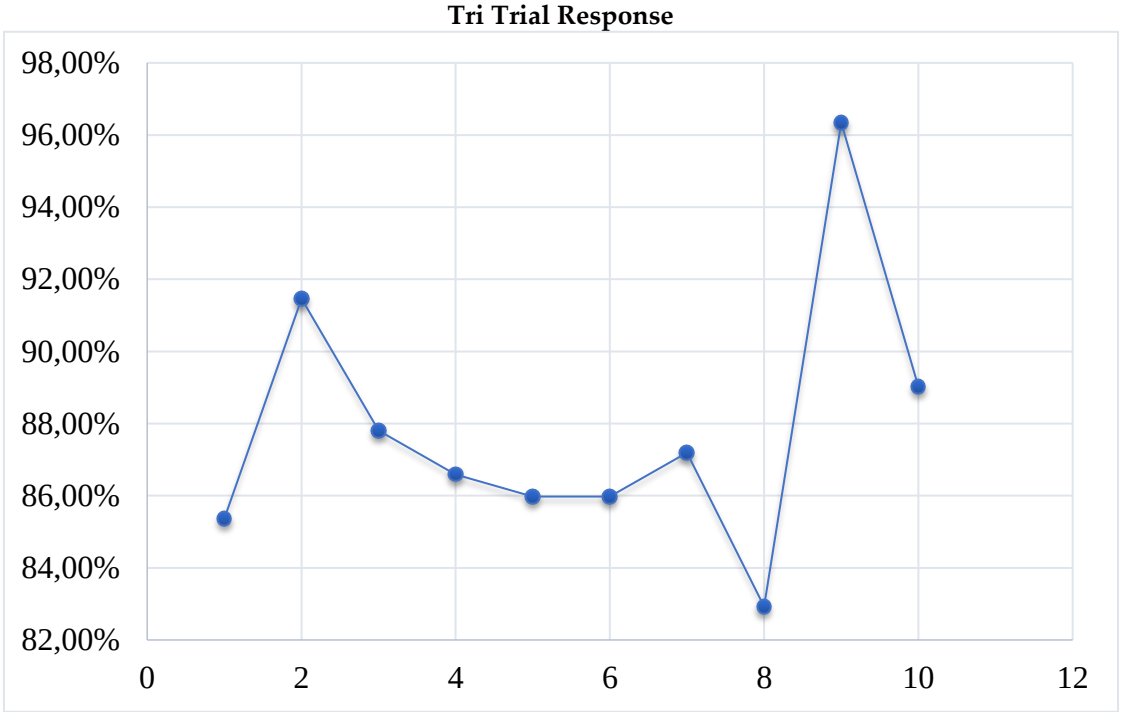

Figure 2. Trial Response Response Diagram

Effectiveness of Whiteboard Annimation Media

The assessment of the effectiveness of the Whiteboard Annimation media conducted in this study was based on student perceptions. This test is performed to test the validity of each statement item in measuring its variables. Validity testing in this study was carried out by correlating the scores of each item statement addressed to the respondents with the total score for all question items in Table 3. Data analysis is used to draw conclusions from the data obtained. Data processing is carried out using

percentages (%), the data from this analysis will later be described to provide an overview of research results globally. Based on the data of the questionnaire filled out by students in outline of several experiments, it can be explained as below Table 3.

Table 3. User Response Questionnaire Answer Results (Students)

No	Question	Score	Mean	Achievement	Criterion
Whiteboard Annimation Questionnaire Validation of Media Design Test					
1	Media appeal to students	143	3,49	87,20%	good
2	Clarity of view	151	3,68	92,07%	good
3	Conformity of the image/video to the Material	154	3,76	93,90%	good
4	Clarity of image illustrations to the material	154	3,76	93,90%	good
5	Video scribe media is able to provide convenience in understanding students	148	3,61	90,24%	good
6	Image/video layouts have been systematically arranged	150	3,66	91,46%	good
7	Conformity of the font to the understanding of the student	144	3,51	87,80%	good
8	Consistent time duration conformity	139	3,39	84,76%	good
9	Order pictures according to the content of the material	149	3,63	90,85%	good
10	Suitability of evaluation instruments	143	3,49	87,20%	good
Whiteboard Annimation Questionnaire Validation of TTM Media Test					
1	Material disclosure	142	3,46	86,59%	good
2	Ease of use of the media	152	3,71	92,68%	baik
3	Image suitability Basic competencies	145	3,54	88,41%	baik
4	Compatibility of the image with the material	151	3,68	92,07%	baik
5	kesesuaian contoh dengan materi	151	3,68	92,07%	baik
6	Front's conformity to student understanding	145	3,54	88,41%	baik
7	The suitability of the preparation of the media	151	3,68	92,07%	baik
8	The suitability of the example of the image in understanding the material	146	3,56	89,02%	baik
9	Language level of understanding	151	3,68	92,07%	baik
10	Evaluation success rate	144	3,51	87,80%	Baik
	Mean		3,60		baik

Source: processed data, 2021

Based on table 3 above, a minimum score of 3.46 was obtained on the questionnaire from the Kemenarikan material question. The highest questionnaire score was 3.76 on two questions of conformity of images/videos to Material and Clarity of image illustrations to material. The average of the 20 (twenty) questionnaire questions is 3.60, so the Whiteboard Annimation media developed is in the good category. From figure 3 above the scatter it can be seen that the result is a range of 84.00% - 94.00% indicating that the perception of the user (student) is valid.

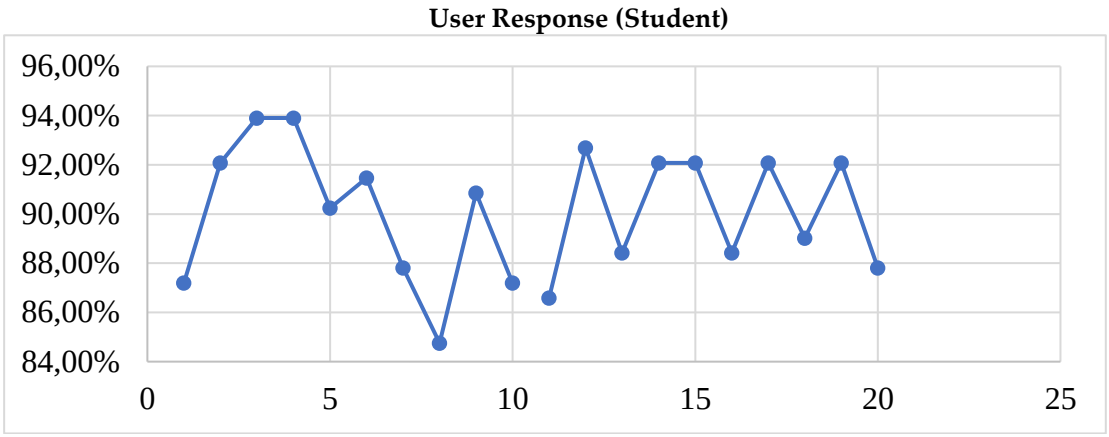

Figure 3. User Response Diagram (College Student)

4. CONCLUSION

Based on the results of research and discussion on the development of Whiteboard Annimation media for students of the Faculty of Economics at Pokjar Cempaka Pati, it is concluded that (1) Development of Media Whiteboard Student Annimation That The Results Are In the Range of 84.00% - 93.00% shows that respondents' perceptions of the Material Expert Assessment Response / Course Content are valid, (2) The development of the student's Whiteboard Annimation media can be known that the results are in the range of 84.00% - 94.00% shows that the respondents' perceptions of the Material Expert Assessment Response / Course Content are valid, (2) The development of the student's Whiteboard Annimation media can be seen that the results are in the range of 84.00% - 94.00% shows that the perception of the user (student) category is effective.

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