

Whiteboard Animation Media Development with Smart Paedagogy Approach in Educational Policy Courses

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Abstract—Learning education policy courses in the education management master's program have not used the smart paedagogy approach, even though smart paedagogy is expected students to be able to apply it in learning at school later, then in classroom learning has not been used animation whiteboard media, which directly makes graduate students happy to see shows which is made attractive and attractive. The procedure for developing learning devices using models developed by Borg and Gall which includes 10 stages, namely (1) Research and information collecting, (2) Planning, (3) Develop preliminary form of product, (4) Preliminary field testing, (5) Play product revision, (6) Main field testing, (7) Operational product revision, (8) Operational field testing, (9) Final product revision, (10) Dissemination and implementation. Borg & Gall (1983) states that development research procedures basically consist of two main objectives, namely: (1) developing products, and (2) testing the effectiveness of the product in achieving its objectives. In this year's study, the stages were only done at the Main Product Revision stage, while Year 2 was carried out until the 10th step, namely desiminate and implementation in several campuses in Semarang City. From the results of validation and assessment seen from the aspect of material, design and media average rating is 89.16%, all aspects are in the range of 81% - 100% so it is said to be valid because it puts it in a very good criteria position. In the analysis process, then the overall analysis in the validator's assessment is obtained percentage calculation data 87.82% after being converted to scale tables, the achievement percentage of 87.82 is in good qualification, so that the Media Whiteboard can be said to be valid or feasible to use in lectures.

Keywords—*Development, Whiteboard Animation, Educational Policy Course.*

I. THE BACKGROUND OF RESEARCH

The development of learning media is very rapid in the last 10 years, this is very challenging for the world of education in Indonesia, especially universities in using it in lectures, one of the renewable media such as interactive whiteboard has not been used generally in universities in Indonesia, animation whiteboard is a large touch screen panel that can function as a regular whiteboard or as a computer projector screen that can

control images on a computer by touching the panel surface without using a mouse or keyboard. This technology allows users to write or draw on its surface directly and save it to the computer [1].

Based on interviews with some lecturers at the State University of Malang and ITS in the department of learning technology and Informatics Engineering obtained data that the majority of universities are still reluctant to use interactive whiteboard media because the price is still quite expensive range of 80 million. However, if viewed functionality for the world of education is very important. Based on relevant studies conducted by Steve Kennewel and Alex Morgan (2003), 95% of students and teachers observed in the UK stated that interactive whiteboards can add value to learning, although 76% feel that with this whiteboard animation will increase their preparation time, like how to learn operate it effectively.

II. LITERATURE REVIEW

A. Theory Underlying the Development of Interactive Whiteboards

There are several learning theories that are used as the basis for the development of Whiteboard Animation, namely: (1) Behavioristic Theory; "*Behavioristic learning theory is a theory that was initiated by Gagne about various and different human behaviors produced from learning*".(2) Cognitivism Theory; "*Cognitivism seeing learning is an internal process that sees memory, motivation, thinking reflection, and meta-cognition*".(3) Constructivism Theory; "*Constructivism sees students building their knowledge from their own learning experiences*".

B. Relevant Research Results

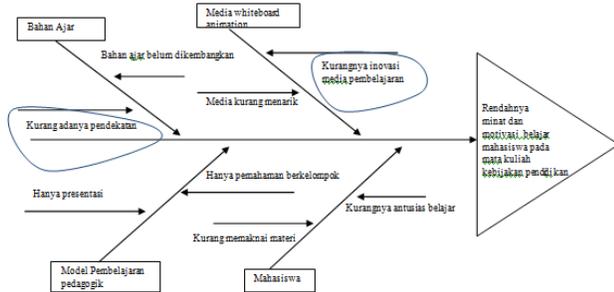
These relevant studies related to the research that researchers will do are:

1. Research conducted by [1]: about The Interactive whiteboard As A Force For Pedagogic Change: The Experience of Five Elementary Schools in An English

Education Authority. Information Technology in Childhood Education. Norfolk, Vermont, AACE. which shows that elementary school children are greatly helped by their pedagogical ability with interactive whiteboard media.

2. Research conducted by [2] about "Student Teachers' Experiences and Attitudes Towards Using Interactive whiteboards in the Teaching and Learning of Young Children." Department of Education, Swansea University of Wales. which shows that the children of Wales are very happy if the teacher uses interactive whiteboard in their learning, this is because the object of image, sound and others can be directly practiced by students.
3. Research conducted by [3] about. "Can the Interactive Whiteboard Help to Provide" Dialogic Space 'for Children' Collaborative Activity? ". shows that students at school are very happy with interactive whiteboard because students can collaborate in delivering their ideas and ideas directly in front of the class.

The differences in this study with the relevant research above can be shown through the following fishbone:



This study will develop interactive interactive whiteboard media to improve student psychomotor skills.

III. OBJECTIVES AND BENEFITS OF RESEARCH

A. Research purposes

Based on the description on the background and formulation of the problem, the objectives of this research can be formulated as follows:

1. To find out the development of animation whiteboard media with a smart pedagogy approach in educational policy courses that can attract students' interest and motivation to learn.
2. To find out the use of animation whiteboard media with a smart pedagogy approach that takes place effectively and practically.
3. Specifically what is to be achieved in this research and development is to produce animation whiteboard

media that can improve the smart pedagogic skills of students.

B. Benefits of research

1. Graduate School Program in UK students, especially lecturers in the Education Policy course to use whiteboard animation to improve students' smart pedagogy skills.
2. Undergraduate lecturers widely use teaching and learning which is more interesting, one of them is by using media whiteboard animation with the smart pedagogy approach.

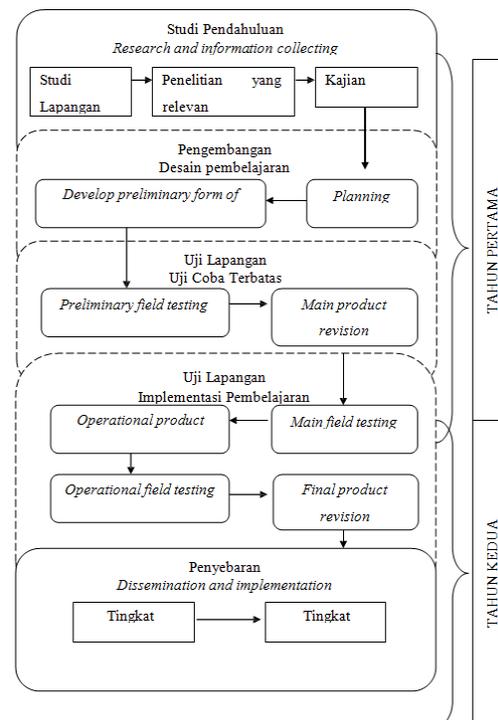
IV. RESEARCH METHODS

A. Types of Research

This research includes types of R & D (research and development) or types of development research. The development carried out was the Development of Interactive Whiteboard with the smart pedagogy model in education policy courses. The procedure for developing learning devices using Modification models developed by Borg and Gall which includes 10 stages, namely (1) Research and information collecting, (2) Planning, (3) Develop preliminary form of product, (4) Preliminary field testing, (5) Main product revision, (6) Main field testing, (7) Operational product revision, (8) Operational field testing, (9) Final product revision, (10) Dissemination and implementation.

B. Development Procedure

The research procedure which adopted 10 stages of Borg and Gall development can be seen in Figure 4.1 below.



C. Method of collecting data

Data collected in the development of whiteboard animation in the form of quantitative data as the main data and qualitative data in the form of suggestions and input from respondents as additional data. The data gives an overview of the feasibility of the product being developed

1. Data from material experts

In the form of product quality in terms of material content, namely: conformity with the syllabus, relevance to the ability of students, clarity of learning topics, material content, material coverage, suitability of evaluation design, relevance of images, videos, and illustrations with material, ease of use, and ease of understanding the material.

2. Data from media experts

In the form of product quality in terms of media aspects, namely: interaction with users, the use of text format languages, color usage, image quality, sound / music quality, video and illustration quality, use of animation, order of presentation, and whiteboard animation display.

D. Data analysis technique

In the data analysis phase, the data in the form of learning media assessment obtained from media validity by some experts and the results of pedagogical abilities of students analyzed for product improvement. The data in the form of the results of the researcher checklist that was obtained at the implementation stage (pretest and posttest that had been answered by the child) were analyzed to determine the effectiveness of the product.

E. Validation and assessment results

Validation and assessment results from system experts for each aspect are presented in the table. The following is a descriptive presentation of the results of expert validation assessment on Whiteboard Media:

No.	Validator			appropriateness
	1	2	3	
1	84,21	94,11	84,00	89,16
	Average			89,16

From the above table, it can be seen for the aspect of media assessment (89.16%). All aspects are in the range of 81% - 100% so that it can be said to be valid because it has placed in a very good criteria position. In the analysis process, then the overall analysis in the assessment by the validator is obtained as follows:

Number of all validation scores

$$\text{Percentage} = \frac{\sum (\text{number of validation scores})}{n \times \text{highest value} \times \text{number of validations}} \times 100\%$$

$$\sum (\text{number of validation scores}) : 80 + 80 + 42 = 202$$

$$n (\text{number of validation questions}): 46$$

$$\text{highest score} : 5$$

$$\text{number of validations} : 1$$

$$80 + 80 + 42$$

$$\text{Percentage} = \frac{202}{46 \times 5 \times 1} \times 100\%$$

$$\text{Percentage} = 87.82\%$$

Based on the results of the calculation of the percentage can be seen that the percentage results are 87.82% after being converted to a scale table, the percentage of achievement 87.82 is in good qualification, so that the Media Whiteboard can be said to be valid or feasible to use in lectures.

V. CONCLUSION

1. Produced whiteboard animation media products with a smart pedagogy approach that is appropriate for use in educational policy courses according to material experts, media experts and learning design experts.
2. Produced a prototype or media product of whiteboard animation with a smart pedagogy approach that has been improved according to input and advice from material experts, media experts and learning design experts.

REFERENCES

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