

DEVELOPMENT OF INTERACTIVE MULTIMEDIA CD OF INSTRUCTIONAL MEDIA ON BUILDING CONSTRUCTION

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ABSTRACT: This development reaserch was designed to develop an instructional media in this case interactive multimedia CD on Building Construction. This interactive multimedia CD instructional media was designed to increase motivation of students in so that students can understand learning material in building constructional subject, and to increase learning outcomes on building construction subject. This reaserch was using Research and Development (R and D) method of research, and *Four-D (Define, Design, Develop, and Disseminate)*. The data was primer data that had been collected from media expert, teacher, and students. Data analysis technique that used in this reaserch was descriptive analysis data technique by describing validity, practicality and effectivity of interactive multimedia CD instructional media. Based on the research results in this research concluded that this interactive multimedia CD instructional media is valid, practical, and effective and is recommended to be used as instructional media on Building Construction Subject.

Keywords: Interactive Multimedia CD, Validity, Practicality, Effectiveness

1. INTRODUCTION

Efforts to produce education in accordance with the functions and objectives of the national education system, are needed to improve educational programs. One of the existing educational programs is vocational education that serves to prepare each individual learner to become a professional workforce, ready in continuing education to a higher level, and can adapt to any changes in the environment so that it is expected to improve the welfare of individuals, society, nation and state. Vocational High School (Vocational School) is one of the vocational education institutions that contribute to the achievement of national education goals that have the task of preparing students by providing knowledge and skills to be able to work in accordance with competence and skill program, have high adaptability and competitiveness to enter the world of work.

Vocational Secondary School (SMK) Negeri 2 Payakumbuh is one of the institutions that play a role to prepare learners have skills according to their respective fields. SMK Negeri 2 Payakumbuh is one of vocational schools in Payakumbuh. SMK Negeri 2 Payakumbuh has several majors, one of which is the Department of Building Engineering program in Construction and Concrete Construction Engineering (TKBB). At the Department of Building Engineering students are required to be proficient in the field of building. To achieve these goals is supported by several subjects, one of which is the subject of Building Construction.

Subject Building Construction is a subject that studies about materials and work related to the construction of a building. The materials contained in this lesson include the nature and characteristics

of wood, type and classification of concrete stones, type and classification of steel, type and classification of mortar materials, the execution of wall works, various connections and wood links, type of foundation and soil bearing capacity, design of plumbing systems and distribution networks, as well as other materials related to building construction. Therefore, it is needed learning media that can support students' understanding and mastery of building construction lesson materials.

Brown in Iswidayati (2010: 2) says that "Learning media used in learning activities can affect the effectiveness of learning". The effectiveness of a communication process can be identified from how the message conveyed by the communicator can be accepted by the communicant. Furthermore it is said also that "In the process of learning teachers are required to be effective communicators, so that messages or materials delivered to the communicant or learners can be received effectively as well". From the above opinion can be concluded that the teacher is required to be an effective communicator while the learning media itself can affect the effectiveness of learning.

One of the learning media that can be used by communicators or teachers in the delivery of learning materials is the media-based visualization animation learning, the media presentation that contains interactive animation that can make students or communicant more interested in learning.

2. RESEARCH METHODOLOGY

This research uses research and development method (Research and Development). The development model used in this research is Four D



(4D) model. According to Thiagarajan et al (1974), this 4D model consists of 4 development stages: define, design, develop, and disseminate or be adapted into 4-D models, defining, designing, developing, and deploying

The first stage is the determination stage (define) which consists of front end analysis, student analysis, concept analysis, and the formulation of learning objectives. The second stage is the development stage which contains the formation of benchmark reference test, media selection, format selection and design of prototype. While the third step is the stage of product validation, practicality, and effectiveness test. The subject of the experiment in the development of interactive learning media is the students of class X TKBB Building Skill Program SMKN 2 Payakumbuh. The last stage is to deploy (Disseminate) in the form of media dissemination stage of interactive multimedia CD developed

The research instrument used to measure the validity and the practice of learning media of interactive multimedia CD developed in the form of validation sheet and questionnaire of practice. The validated component of instructional media is in accordance with didactic requirements, construction terms, and technical requirements (Anggaryani (2006: 97-98)). Practicality data is derived from teacher and student responses. Meanwhile, to measure the effectiveness of learning media model of interactive multimedia CD used instrument test student learning outcomes. Data obtained then analyzed to determine the validity, practicality and effectiveness of learning media interactive multimedia CD developed.

3. RESULTS AND DISCUSSION

3.1 Validity Test Results

Validity test aims to determine the level of prevalence of learning media developed. The retrieval of validity data is done by using validation sheet. Interactive multimedia learning media CD validated by two material experts who are expert teachers of Building Construction in SMKN 2 Payakumbuh and two lecturers of media experts who are lecturer of Postgraduate Faculty of Engineering State University of Padang. Based on validation test results obtained average media validation test score of 87.83%, so it can be concluded the results of validation of learning media interactive multimedia CD entry in the category of "Very Valid".

3.2 Practicality Test Results

Practicality is related to the ease of use of learning media developed interactive multimedia CDs. Practicality data obtained through a questionnaire filled by two practitioners (Teacher

Building Construction Lessons) and also a questionnaire filled by students who use interactive learning media CD multimedia. The result of the assessment on the practicality based on the teacher's response obtained the average value of teacher's questionnaire response about media practice that is 88.57%, so it can be concluded the teacher questionnaire response data to the media practicality goes into the category of "Very Practical". Initial test of learning media of interactive multimedia CD is done to small group consist of 9 students. The result of questionnaire result of small group student response about media practicability is obtained by average value that is 89,54%, so it can be concluded the questionnaire data of small group student response to the practice of the media is included in the category of "Very Practical".

Learning media product that has been tested in small group which is very practical, then done trial of media practicality toward big group or trial to all students of class X TKBB SMKN 2 Payakumbuh. The result of questionnaire of student response of big group about media practicality is 90,74%, so it can be concluded the questionnaire data of student's response to the media practicality goes into the category of "Very Practical".

3.4 Effectiveness Test Results

Assessment of the effectiveness of learning media development of interactive multimedia CD on the subjects of Building Construction is done by conducting test of learning outcomes conducted at the beginning and end of learning. The value of pretest test is taken before learning using interactive multimedia CD learning media. For the final test (posttest) is done after 3 meetings after using the interactive multimedia CD. Both of these test results were then compared to see the effectiveness of the interactive multimedia learning media that was applied. Based on the pretest or preliminary test, the data of complete student (> KKM that is 75) are 14 people (58,33%) and the unfinished student is 10 people (41,67%). After done posttest, hence got complete student data (> KKM that is 75) counted 23 person (95,83%) and student which not yet complete is 1 person (4,17%). Based on these results can be seen there is an increase in learning outcome as much as 37.50%, so it can be concluded the level of effectiveness of learning media interactive multimedia CD is very good.

4. CONCLUSION

Based on the results of research development of learning media interactive multimedia CD has been done, then obtained the following conclusions.

Learning media product interactive multimedia CD generated in the form (file, image, video, sound) learning media of Building Construction.



Learning media Interactive multimedia CD has been assessed by validators from various studies with very valid categories.

Practicality of media in learning seen from the implementation of the use of learning media as a whole goes well. It is seen from the response of teachers / practitioners and the results of student responses that show the learning media developed including the category very practical.

The effectiveness of media developed against students seen from the results of student learning after learning by using interactive multimedia CD media.

Based on the results of learning obtained by students showed that the effectiveness of learning

media interactive multimedia CD in terms of learning outcomes is very good.

5. REFERENCES

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