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Research Article

HOW TO MULTIMEDIA PRACTICES LEARNING COMPUTER AND DATA COMMUNICATIONS IN EDUCATION VOCATION

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ABSTRACT

This study aims to develop an easy-to-use Multimedia for Computer Networking and Data Communication courses. This type of research is development research using Borg and Gall development model. This study was assessed by students using multimedia learning. The results of the assessment of the questionnaire to the observer and participants. The assessment will get responses or opinions from observers and participants to determine the practicality of Multimedia Learning. The results of product practicality data showed that the first design value with an average of 90, while the average value of 95.3, so it can be expressed in the category practical.

Key Words:

Multimedia, Computer Networking, Data Communications, Practical

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INTRODUCTION

Vocational education is a system of higher education directed towards the mastery of certain applied skills. The learning process is mandated in Government Regulation no. 32 the year 2013 is a learning process in vocational education, that learners are given the opportunity to develop the potential and creativity so that it is expected to have skills according to his expertise. Higher Education is an educational institution that is expected to produce graduates with academic ability in the field of scholarship. Therefore, universities should always follow the rapidly developing knowledge and technology to refresh and renew the motivation, attitudes, and outcomes of the learning process taking place in it.

The development of Science and Technology (IPTEK) occurred so rapidly in the field of education. This is due to the human need for fast and accurate information. Various reforms were made to improve the quality of education. To improve the quality of education in need a variety of breakthroughs, both in the learning process and adequate facilities and infrastructure. For that lecturers are required to make innovative learning that encourages students to learn optimally both in individual learning and group learning. One of the effects of technological development that often encountered is the use of multimedia in the learning process.

Multimedia learning is a medium used in the learning process that can help students to be more active in the learning process. Especially at this moment the teacher acts as a facilitator. Teachers are expected to always create and facilitate learning by creating learning media that can generate student interest in learning. The development of computer technology can be used as a tool in the learning process. The use of computers as a medium in the learning process can include information presentation, simulation, and training. The use of computers like this is used to develop the learning process in the form of interactive learning media so as to create a fun learning atmosphere and supported by display images, sound and video that can make students to learn better so as to minimize the saturation and lack of interest in student learning.

So far has been accustomed to using computer applications that's just that in the learning process to compile the material to be taught. Computer applications used such as Microsoft PowerPoint. Yet nowadays there are many applications that can be used to create a better learning media. Even those applications have advantages that are more interesting than Microsoft PowerPoint so it can cause creativity from students and can take advantage of the advancement of the use of computer technology as a medium of learning. Media that previously still has many shortcomings. It is necessary to develop multimedia learning so that the learning process of

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some additional functions such as simulations, learning videos, references used in learning, quiz and evaluation questions containing questions about the material being taught and instructions for using the media.

MATERIALS AND METHODS

Research development of research methods used to produce a specific product and test the validity of the product. Borg and Gall (2003), defines development research as a process used to develop and validate products.

Exposure to procedural steps taken by development in product manufacturing. According to Borg and Gall (2003) explains that research begins with the collection of information including literature review, field observation, and report preparation. Planning includes defining expert meetings, objective statements that define modeling, and possible small-scale trials. The development of early product patterns includes theoretical materials, manuals, and evaluation tools. Field trials through interviews, observations, and questionnaires were then collected and analyzed. Revised main product revision when suggested by previous field test results. The fields are extended to obtain quantitative data. The learning development phase of the learning media adopted from Borg and Gall is simplified into 4 steps, namely: Introduction and Design Phase, Limited Test Stage, Extensive Test Stage, Implementation and Dissemination.

At this stage beginning with a preliminary study by performing needs analysis, needs analysis is the first step in development research. This stage aims to establish and define the basic problems faced in lectures in higher education, so that required a development of multimedia learning. With this analysis will get a picture of facts, expectations and alternative solutions to basic problems, which facilitate the determination to be developed. At this stage the questionnaire to the observer and participants, the stage of multimedia instructional product delivery.

RESULTS

The results of the assessment of the questionnaire to the observer and participants. The assessment will get responses or opinions from observers and participants to determine the practicality of multimedia learning. Questionnaire consists of statements to determine the practicality of multimedia learning and provided an alternative answer to these statements. The assessment will get responses or opinions from observers and participants to determine the practicality of Multimedia Learning.

Based on the questionnaire of the practicality of instructional media filled by students, also concluded that the first design designed is practical.

Table 1 Student Comments on First Design

No	Name	Score	Conclusion
1.	Septiano	87	Practical
2.	Berly Roza	91	Very Practical
3.	Meiriza	92	Very Practical
	Rata – rata	90	Very Practical

The evaluation of the three students above shows the first design is practical. Nevertheless, there are still some things that must be improved so that Multimedia Learning used in learning

activities can help students in understanding the material Computer Network and Data Communications.

The second design result based on the first design can then be validated and tested on six students as a small group. This is done to see the learning multimedia practice, before being tested into the real research subject.

Table 2 Small Group Student's Comment on the Second Design

NO.	Name	Score	Conclusion
1.	Septiano	92	Very Practical
2.	Berly Roza	100	Very Practical
3.	Meiriza	95	Very Practical
4.	Fathur Rahman	92	Very Practical
5.	Dzulfa Rahman	100	Very Practical
6.	Nurzakia Ulfa	93	Very Practical
	Rata – Rata	95,3	Very Practical

The results of the product practicality data show that the first design value with an average of 90, while the average value of 95.3, so it can be expressed in the practical category.

CONCLUSION

This research development produces the product that is Multimedia Research for lecturing Computer Network and data communication is the subject matter of student of Computer Science and Informatics Study Program of FKIP University Bung Hatta which can be used for lecture one semester. Multimedia learning is developed through the literature review stage, field observation and assessment will obtain responses or opinions from observers and participants. Based on the opinions and observations as well as the participants obtained The results of the product practicality data show that the first design value is obtained with an average of 90, while the average value is 95.3, so it can be expressed in the practical category.

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