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EVALUATION OF DIGITAL SIMULATION LEARNING BASED E-LEARNING IN SMK NEGERI 2 PADANG

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ABSTRACT

Based on the observation that have done at SMK Negeri 2 Padang, there are some problems on implementation of e-learning based Digital Simulation learning. One of which had never done an evaluation on implementation of e-learning based Simulasi Digital learning. This study aimed to evaluate the component of context, input, process, and product on implementation of e-learning based Digital Simulation learning at SMK Negeri 2 Padang. This research was an evaluation study with CIPP evaluation model (Context, Input, Process, Product). The method was used a mixed method by sequential explanatory. Quantitative data have been collected by quesionner and analyzed with descriptive analysis using Achievement Level Respondents (TPR). Qualitative data have been collected by interviewed and observed, and analyzed with data reduction, data display, and make decisions/verification. The result of this reasearch showed that the component of the context, input, process, and product on implementation of learning based Digital Simulation learning at SMK Negeri 2 Padang was at enought category. The component of process and product should be improved to make the implementation of e-learning based Simulasi Digital learning to be more optimal. The recommended is the implementation of e-learning based Digital Simulation learning can proceed with the improvement at each of its components.

Keywords: Evaluation Program, CIPP Model, Mixed Method, E-learning Based Learning.

INTRODUCTION

In order to improve the quality of education has been a lot of effort made by the government, such as the renewal of the curriculum, facilities and infrastructure, improving the quality of teachers and activities that encourage the interest of students to learn. This is particularly important considering the function of education outlined in the Education Act No. 20 (Department of Education, 2003) in Section 3 of Chapter II of the national education system: The national education serves to develop the ability and character development and civilization of the nation's dignity in the context of the intellectual life of the nation, aimed at developing the potential of learners (students) in order to become a man of faith and fear of God Almighty, noble, healthy, knowledgeable, skilled, creative, independent, and become citizens of a democratic and responsible.

Evaluation or assessment of an effort or action to determine the extent to which stated goals are achieved, in other words the purpose is as a tool to determine the success of the learning process that occurs between educators and learners. Evaluation or assessment is carried out to measure the achievement of competence, which includes knowledge (cognitive), skills (psychomotor), and attitude (affective) that must be mastered learners. Law of the Republic of Indonesia No. 20 of 2003 on National Education System states "Evaluation is done in order to control the quality of education nationwide as a form of accountability of education providers to the parties concerned".

Information and Communication Technology is one of applied science has an important role in education. Information and Communication Technology is one field of study in Vocational Technology Education that serves as a support in the learning process. Rusman (2012: 73) "Information and Communication Technologies is a technology used to collect, process, organize, store, and manipulate data in a variety of ways to generate quality information, ie information that is relevant, accurate and timely used to decision-making. "Based on the description can be concluded that the Information and Communication technology is a field of study that uses the technology to be able to perform data processing,

Utilization and development of information and communication technology at this time more rapidly. This can be seen with the increasingly high demand for computerized systems. As with the term e-government in the areas of governance, e-commerce in the field of economics, e-medicine in the field of health, e-community in the field of organization (community) and others. The same thing was also felt in the world of education, namely the emergence of the term e-learning is the development of information and communication technologies

*E-learning*is a term used for learning to use the internet assistance. Rossen and Hartley (2001: 1) defines e-learning as everything was delivered, enabled, or mediated by electronic technology for learning purposes. Then Munir (2009: 170) argues that e-learning is one of the most effective strategies that can reach a very wide area with relatively easy cost.

Vocational School (SMK) is one of formal education which aims to prepare the workforce has the appropriate knowledge and skills with vocational skills program. The main objective, namely SMK requires learners to be able to apply skills already acquired both theory and practice. CMS will also produce workers who are experts in their field and is supported by a satisfactory learning outcomes. SMK plays a strategic role for the supply of skilled labor nationally. Based on the explanation of the Law of the Republic of Indonesia No. 20 of 2003 on National Education System Article 15 explains that "vocational education is secondary education that prepares students primarily to work in a certain competence". Furthermore, the Government Regulation No.

One of the schools that implement e-learning-based learning is SMK N 2 Padang. SMK Negeri 2 Padang has (7) Competence of expertise, namely Computer Engineering and Networks, and Software Engineering, Marketing, Accounting, Administras Offices, Banking, and Business Travel. Each department has implemented an e-learning-based learning in learning Digital Simulation. Preparations made by the school prior to implementing the Digital Simulation-based learning e-learning that educators prepare materials, modules, and other things related to learning in softcopy, and provide guidance to students regarding e-learning-based learning. The

use of e-learning in the learning of the Digital Simulation not only for students but also for teachers. All learners and educators related to Digital Simulation subjects at SMK Negeri 2 Padang registered as a member in the e-learning system. Activities that can be done by learners in accessing the e-learning-based learning that is downloading learning materials, daily exam questions, take the quiz online, upload the assigned tasks, and exchange ideas with fellow members of other e-learning as well as with the teacher. Meanwhile, educators are also required to upload all learning materials, learning modules, tasks, daily exam questions, and quiz questions in e-learning. Then,

Based on an initial interview that I did with one of the teachers at SMK Negeri 2 Padang on March 1, 2018 envisaged that the Digital Simulation-based learning e-learning has not been used optimally. In terms of the use of e-learning activities based learning e-learning has not been undone by optimally can be seen from the limited activities conducted by educators and students in the use of e-leaning. In terms of the needs of the implementation, there are still unmet needs to the fullest. For example, in terms of educators, SMK Negeri 2 Padang has (5) Digital Simulation teachers for all kopetesi keahlain or majors. Of (5) Those teachers in Engineering Program Information and Computer only 2 educators active in the utilization of e-learning-based learning. This is because the training will be learning-based e-learning is not provided by the school both to educators and learners. The next phenomenon encountered during observation, is a discrepancy background educator who teaches Digital Simulation. Of course, it is also more or less will disrupt the implementation of the Digital Simulation-Driven Learning E-learning. is a discrepancy background educator who teaches Digital Simulation. Of course, it is also more or less will disrupt the implementation of the Digital Simulation-Driven Learning E-learning. is a discrepancy background educator who teaches Digital Simulation. Of course, it is also more or less will disrupt the implementation of the Digital Simulation-Driven Learning E-learning.

In addition to teachers, is no less important aspect in the implementation of the Digital Simulation-based learning e-learning is the availability of facilities and infrastructure support. SMK N 2 Padang, still have barriers to learning implementation

Digital Simulation berbbasis e-learning in the field of infrastructure. The obstacles include: not all schools have the infrastructure to support the implementation of e-learning (eg, wired LAN / Wifi throughout classrooms) optimally, so learning can only be implemented in Labor.

From the introduction above, the identification of the problem in this research is diantaranyaa are: not optimal implementation based learning e-learning in SMK N 2 Padang, the lack of training on learning-based e-learning provided by the school to educators and learners, yet suitability background education rear educators pembelajaaran program, the low participation of the learner to use e-learning-based learning, and the use of e-learning-based learning continued despite the evaluation has not been done.

METHOD

This research is an evaluation research with the model Context, Input, Process, Product (CIPP). In this case the researchers are evaluating the implementation of the Digital Simulation-based learning e-learning in SMK N 2 Padang in terms of (a) Context, (b) input, (c) Process, and (d) Product. This study is expected to find a picture of the implementation of the Digital Simulation-based learning implementation of e-learning in SMK N 2 Padang. The research was conducted at the class XI SMK Negeri 2 Padang of the month October 2018 until the month of January 2019.

The method used in this research is the Mixed Method with quantitative and qualitative approaches in order of proof (sequential explanatory). A quantitative approach in this study using statistical processing numbers and qualitative approaches to uncover phenomena and removed from the facts fairly, instead of the controlled conditions or manipulation. To corroborate the description of the quantitative data used qualitative data obtained from the results of documentation, interviews, and observations to the research subjects. The following Figure Method Mixed Methods Design, Sequential explanatory approach, Creswell (2012).
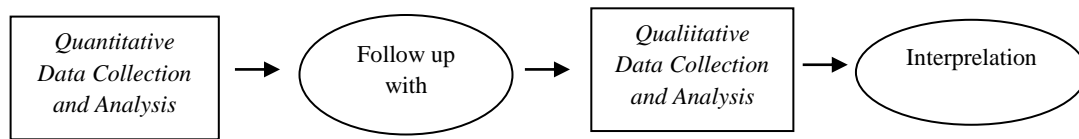
Figure 1. Explanatory Sequential Design

RESULTS AND DISCUSSION

Valid questionnaires were used in this study consisted of 80 items in which each statement items relating to represent the indicators in the implementation of the Digital Simulation-based learning e-learning. Quantitative data is collected through a questionnaire consisting of 80 items of statements that have been tested for validity and reliability. Furthermore, the questionnaire was given to 70 learners in grade XI SMK Negeri 2 Padang. Qualitative data collected from interviews with the Principal, Vice Principal and Educators

Component-based learning context of the implementation of e-learning at SMK Negeri 2 Padang divided into three indicators / sub-indicators in terms of the purpose of the implementation of e-learning-based learning, learning implementation environment based e-learning and the need for the implementation of e-learning-based learning. Based on a questionnaire distributed to 70 learners dengan16 point statement, obtained by the score acquisition average of three indicators / sub-indicators related to the context of the implementation of component-based e-learning instructional obtained at 4.08 to the 81.51% level of achievement and belonging to in both categories. It can be concluded that the components of the context needs to be improved and optimized for the purpose and environmental indicators,

Digital Simulation-based learning implementation of e-learning aims to facilitate educators and learners in the learning process, helping learners to acquire learning resources, and increase the knowledge of teachers and students about the world of technology and communication. Based on the above it can be concluded that the implementation of e-learning-based learning is essentially beneficial for students and educators. Interest-based learning implementation of e-learning can be achieved when the needs of educators and learners will be met and the implementation of the

school environment also supports implemnetasi based learning e-learning. Context components that have been evaluated and obtained quite necessary improvement and optimization in every element of its components.

Input component in the implementation of e-learning-based learning at SMK Negeri 2 Padang divided into four indicators / sub-indicators in terms of educators, learners, infrastructure, and cost. Based on a questionnaire distributed to 70 students with the 24-point statement, the result for the indicator amounted to 4.11 educator with the achievement level of 82.17% and are included in both categories. This means that educators in the implementation of the Digital Simulation-based learning e-learning already mamiliki ability to operate a computer, internet access, upload material to e-learning, and provides guidance to learners in the use of e-learning.

Results of interviews about educators in the implementation of e-learning-based learning can be concluded that not all educators who teach simulation digital educational background is in electrical engineering and computer electronics engineering. Both of these majors have a linear science and knowledge with computer science. Educators have good ability in operating a computer and access the Internet site and its services

Results for indicators of students gained an average of 4.13 with the achievement level of 82.67% and are included in both categories. This means that learners in learning implementation digital simulation based e-learning already have a good basic skills to perform a search on the Internet, understanding of information technology, keep up with technology, and is able to operate a computer.

Results for the infrastructure indicator gained an average of 4.00 with the achievement level of 79.90% and are included in the category enough. This means that in the implementation of infrastructure-based digital simulation learning e-learning available enough that schools have access to the Internet, computers, LCD / infokus, and electrical power to operate the computer.

Results of interviews about the infrastructure in the implementation of e-learning-based learning can be concluded that the infrastructure facilities provided are complete enough, such as computers, the Internet, speakers, and LCD / infokus. It's

just that there are still some problems and obstacles, such as the computers were broken, the Internet is not good, and power outages.

Results of interviews about the cost indicators in the implementation of e-learning-based learning can be concluded that the absence of costs incurred by the school in the implementation of e-learning-based learning. This is because the school is still using the LMS (Learning Management System) that is free is Edmodo. The average score of the acquisition of the four indicators / sub-indicators related input components based learning implementation of e-learning obtained at 4.08 to the 81.58% level of achievement and are included in both categories. It can be concluded that the component inputs need to be improved and optimized for educators and infrastructure indicators in the implementation of e-learning-based learning in the future. This is because the indicator educators and infrastructure still does not meet the standards set.

1. Component process

The process component in the implementation of learning based on e-learning in SMK Negeri 2 Padang divided into six indicators / sub-indicators in terms of the implementation of learning-based e-learning, human resource training, the use of e-learning in the assessment of learning outcomes, utilization of facilities in implementation based learning e -learning, barriers to implementation, and solutions. Based on a questionnaire distributed to 70 students with 34 point statement, obtained by the score of an average recovery of the six indicators / sub-indicators related component of the implementation process of e-learning-based learning gained by 3.90 by 78.07% and the level of achievement included into the category enough. It can be concluded that the components of the process need to be improved for indicators implementation, human resource training.

2. Component Results

Results for the results and impact indicators gained an average of 3.99 with the achievement level of 79.71% and are included in the category enough. This means that the results and impact given in the implementation of e-learning-based learning is good enough. This is evident from the increased knowledge of learners in using online media, learners become more active in the learning process, using computer technology in the learning process, and learners receive daily routine technological innovation.

The results of the interview on the results and impact can be concluded that students become more open to technological developments. Learners have the motivation and responsibility that the higher the learning process especially digital simulation. Improve learning outcomes. The mindset of educators and students to be changed. However, the negative impact is also felt that the learners who abuse the internet site when learners accessing the internet. In addition, it is also supported by the presence of the study of students who are under the KKM.

CONCLUSION

Based on the analysis and discussion, the evaluation study on the implementation of e-learning-based learning model with Context, Input, Process, Product (CIPP) can be deduced as follows.

1. Component context (Context)

Destinations learning implementation Simulated Digital-based e-learning in SMK N 2 Padang has been reached, that is easier for educators to provide learning, making learning more effective and efficient, to train students to be able to learn independently, and improve the insight and knowledge of learners although not all the goal is reached to the maximum. The implementation process of learning ditital Simulation-based e-learning environment is an environment in terms of SMK Negeri 2 Padang quite good for giving support and support the implementation of e-learning-based learning. The level of demand for the implementation of the Digital Simulation-Based Learning e-learning is quite enough in terms of computers, the Internet or other means so that the necessary improvements to support the implementation of e-learning-based learning. So, component context for indicators and environmental objectives in the implementation of e-learning based learning classified in both categories and for the indicator needs belonging to the category enough. Components are classified as good context needs to be improved and a context component that is quite necessary repair in the implementation of the Digital Simulation learning e-learning so that implementation can run very well for the future.

2. Component inputs (Input)

Digital Simulation learning implementation process based on e-learning in terms of educators is quite good. Digital Simulation Educators who teach at SMK Negeri 2 Padang has an educational background in computer science, electrical engineering and electronics engineering. Digital Simulation learning implementation process based on e-learning in terms of the students quite well. Learners keep up with technology, motivated and active in the learning process, to understand the information technology, and is able to operate a computer. However there are some students who lack the ability to operate a computer.

3. Components of the process (Process)

Digital Simulation learning implementation process based on e-learning in terms of the implementation of e-learning-based learning quite enough. This is due to several factors, one of which is the Internet that has not been good. Digital Simulation learning implementation process based on e-learning in terms of human resources training in the implementation of e-learning-based learning quite enough. Schools have not been training for educators and learners regarding e-learning-based learning. Digital Simulation learning implementation process based on e-learning in terms of the use of e-learning in the assessment of learning outcomes is quite. Educators assessing assignments, quizzes, and daily tests given to students online. But for the final assessment is still done manually. Digital Simulation learning implementation process based on e-learning in terms of the utilization of the fairly. This is because there still are in a state facility is not good so used interchangeably.

Digital Simulation learning implementation process based on e-learning in terms of the barriers quite enough. Obstacles encountered include internet network that has not been good, wifi range is still limited, and the limited facilities available in LMS used (Edmodo). Digital Simulation learning implementation process based on e-learning in terms of the solution is fair. However, the solution provided by schools have not solved all the obstacles encountered. So, component learning process on the implementation of the Digital Simulation-based e-learning classified in the category enough and needs to be improved in the future for the implementation of e-learning-based learning better.

4. Yield components (Product)

Digital Simulation learning implementation process based on e-learning in terms of outcomes and impact quite enough. Participants have the responsibility and motivation of higher learning. In addition, the students also get to know about the development of technology and information is one of the things that affect life in the present.

REFERENCES

Anwar, Saifuddin. 2012. Scale Preparation of Psychology. Reader Student: Yogyakarta.

Djudju Sudjana. 2008. Evaluation of School Education Program. Bandung: Youth Rosdakarya.

Eko Putro Widoyoko. 2010. Learning Program Evaluation: A Practical Guide For Prospective Teachers and Educators. Yogyakarta: Library Learning.

Farida Joseph Tayibnapis. 2000. Evaluation Program. Jakarta: Rineka Reserved.

Ganefri and Hendra Hidayat. 2013. Vocational Education Curriculum perspective. Padang: Electrical Engineering FT UNP.

Government Regulation No. 17 Year 2010 on the Management and Delivery of Education. Jakarta: Ministry of Education.

Lativa Mursyida. 2014. "Evaluation of the Implementation of Learning Pemog raman Java-based e-learning in SMK 2 Subdistrict Guguak District Fifty Cities". Thesis, unpublished. Padang: Graduate Faculty of Engineering-UNP.

Munir. 2009. *Pembelajaran Jarak Jauh Berbasis Teknologi Informasi dan Komunikasi.* Bandung: Alfabeta.

Nana Sudjana. 2005. Teaching and Learning Outcomes Assessment. Bandung: PT. Teens Rosdikarya.

National Education Minister Regulation No. 22 Taahun 2006. In the Content Standards Curriculum Structure of Vocational Education. Jakarta: Ministry of Education.

Peraturan Government of the Republic of Indonesia Number 23 Year 2013 on the National Education Standards. Jakarta: Ministry of Education.

Peraturan Minister of National Education Standards No. 16, 2007. Academic Qualifications and Competencies Teacher. Jakarta: Ministry of Education.

Riduwan. 2009. Fundamentals of Statistics. Bandung: Alfabeta.

Rosen, Elisabeth dan Hartley, Darn. 2001. *Basic of Elearning*. United State of America: ASTD Press.

Rusman, dkk. 2012. *Pembelajaran Berbasis Teknologi Informasi dan Komunikasi: Mengembangkan Profesionalitas Guru*. Jakarta: Rajawali Pers.

Rusman (2012: 73). Curriculum Evaluation. Bandung: Rosda paper.