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E-LEARNING IMPLEMENTATION IN VOCATIONAL TRAINING EDUCATION WITH HANDS-ON LEARNING

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KEYWORDS

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ABSTRACT

This article revied the literature related to e-learning implementation. The purpose of this research is to further explore the use and impact of e-learning. Systematic Literature Review (SLR) is used as a method in this research. The influx of the 4th Industrial Revolution resulted in the loss of some existing work today. This happened in the era of the previous industrial revolution. Nowadays, human activity cannot be separated from digital media. All human activity uses the help of digital technology. Digital technology is a technology that does not use the capabilities of humans that are often called manuals. Improved technological developments in the various areas of life such as finance, business, health, and education have increased. In the field of education also finally develop rapidly in the use of E-Learning adoption. E-Learning has been viewed as a very effective way to improve the quality of teaching and learning in VET schools because of their various forms. The use of e-learning can be in the form of websites or mobile. The use of technology like this in learning makes it easy for teachers and students. In addition to the use of e-learning, these uses have many benefits, such as following the development of education in accordance with the Industrial Revolution of 4.0. It supports environmentally friendly programs because it can reduce the use of paper. The amount of benefits gained from this e-learning use does not cover the likelihood of any other impact in its use.

INTRODUCTION

The influx of the 4th Industrial Revolution resulted in the loss of some existing work today. This happened in the era of the previous industrial revolution. Technology in the second wave Industrial revolution was to a new level, where manpower was replaced by engines (Alvin Toffler, 1981). From here it appears that humans who cannot compete with the machine will lose their job. Similarly, human activity cannot be separated from digital media. All human activity uses digital technology.

Digital technology is a technology that does not use the capabilities of humans that are often called manuals. Digitization tends to be an automatic operating system with a computer-readable format (Aji, 2016). Improved technological developments on various fronts in life such as finance, business, health, and education have increased. In the field of education also finally develop rapidly in the use of E-Learning adoption. The integration of education and technology produces the e-learning that is believed to be a strong medium for learning (Al-Fraihat, Joy, Masa'deh, & Sinclair, 2020).

The combination of the latest technological change with the shift in global economic forces, which accelerates urbanization, as well as demographic changes, pressure on the VET to be more responsive to the needs of the labor and community markets. E-Learning has been viewed as an effective way to improve the quality of teaching and learning in VET schools because of their various forms (Belaya, 2018). Supporting the theory, in an E-

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book, it is said that many organizations and institutions use e-learning because it can be as effective as traditional training at a lower cost (Ghirardini B, 2011). The learning platform implementation for students can be a powerful medium that extends a responsible learning environment outside the classroom (Balasubramanian, Jaykumar, & Fukey, 2014). In addition to the use of e-learning, these uses have many benefits, such as following the development of education in accordance with the Industrial Revolution of 4.0. It supports environmentally friendly programs because it can reduce the use of paper. The amount of benefits gained from this e-learning use does not cover the likelihood of any other impact in its use. This paper is reviewing the use of e-learning in vocational and its impact.

RESEARCH METHODS

Systematic Literature Review (SLR) was chosen as a method for reviewing the library of this article. This article will view various literature related to e-learning implementation. The purpose of the Literature review is to further dig the use and impact of e-learning.

SLR is a method used to combine knowledge to answer research questions (Kitchenham et al., 2009). The SLR in its application has several stages that researchers must implement.

1. Research questions

The first stage is determining the research question. Research questions are used to maintain the reviewer's focus (Wahono, 2015). The research questions that will be discussed in this literature review are (a) How does e-learning use in vocational training education with hands-on learning? (b) How does the effect of e-learning use in vocational training education with hands-on learning?

2. Search process

The second stage is the search process, referring to the title, keyword, abstract. The article search is limited to six scientific databases such as Emerald, Science Direct, Sage Journal, Eric, Elsevier, and Tylor & Francis. The initial keyword used to search for an article is E-learning. The use of e-learning keywords brings up 536,078 articles of total hits from six bases. Emerald 36,000 article, Science Direct 135,108 article, Sage Journal 119,430 article, Eric 8897article, Elsevier 336 article, and Tylor & Francis 236,307 article. The keyword is then changed to e-learning invocations so that the articles are more relevant to the research question.

3. Relevant Articles

The third stage is the selection of articles with relevant studies. The selection of articles can be based on authenticity, not duplicates, and the suitability of researched topics. At this stage, the selection of articles is more detailed by looking at the contents of the article. Total articles obtained from six bases with e-learning keywords reached 8,301 articles. However, it still has to implemented further selection, since there are still many irrelevant articles to choose from as material libraries.

a. Quality Assessment

The fourth stage is the quality assessment of the selected article.

b. Data collection

The fifth stage is the process of extracting the data by classifying the findings of some articles obtained.

c. Data Analysis

The sixth stage is data analysis that has been classified to answer research questions.

d. Deviations

The seventh stage is the deviation in the literature.

RESULTS AND DISCUSSION

Use of E-learning

This article collects data on the use and impact of e-learning in vocational. We review 20 papers from digital databases and other libraries. The Learning Management System (LMS) has become a key thing for delivering and managing e-Learning programs in education, business, governance and vocational learning arrangements(Zaharias & Pappas, 2016). In recent surveys, existing LMS were changed due to user experience issues on nearly 50% of respondents. Four dimensions: Pragmatic quality, authentic learning, motivation and engagement, and autonomy and relevance into a new user experience-oriented evaluation model (UX)(Zaharias & Pappas, 2016). Although the amount of data on the existence of long-term effects of less eLearning courses, E-Learning can still facilitate ongoing vocational education (Kontio et al., 2013).

A patient care education with impaired aggressive and psychological nature is fragmentary. The education of these treatments can be guaranteed quality by using e-learning. Although the data on the impact of the use of e-learning on the staff's professional competence is insufficient. This research shows e-learning can be easily reached. In addition to access to learning tools requires a certain booking. This e-learning is recommended for nursing staff

who pursue vocational education in psychiatric institutions. High-value e-learning, as it is an advanced development with a more flexible learning time schedule and more individualized content(Kontio et al., 2011).

Today, life's knowledge and human skills are shorter than ever. Although humans are always pressed to stay up to date with a variety of education and training that were captured throughout his career. In the era of globalization accompanied by a technological revolution, the title gained within four years is only the beginning of 40 years to pursue education. Today, lifelong learning is a must in the world. Electronic learning often called e-Learning or eLearning is a form of a type of technology that is supported by education/learning (TSL) where teaching media is a computer technology (Kitchenham et al., 2009).

In India e-Learning is potentially a potential, but the adoption for it has been slow so that it will require some effort in marketing as well as great use awareness. E-Learning is a technology that has great potential to spread expanded learning. But the benefits of such technology must also be obtained by residents in rural India. If not acquired, it will be a matter of the cause of the digital divide in India. In the Indian education scenario, eLearning contains the preparation of the content as well as a tool for presentations. This eLearning implementation is to expand education to remote areas into the pros and cons of India. While there are some recommendations made about using e-learning for informal and vocational training in developing countries where the majority of residents live in rural/remote areas, who have received formal education ignoring(Aggarwal, 2009).

A learning Environment process (PLE) was built by several undergraduate students in computer science and electronics programs. This student has experience learning using the Netvibes home page. The student discusses Netvibes that can benefit from the context of the instructional strategy as well as the form of solutions obtained. In addition, there is a student who provides proposals and implements his/her model for effective communication between the Learning Management System (LMS) and PLEs. Where finally, students can argue about the form of learning that is done in using PLE. In addition, they are examined through investigations and discussed. The assumption of most students is PLE is a useful process in learning that supports personal development(Ivanova & Ivanova, 2010).

The emerging computer and Internet technologies can enable hypertext, hypermedia as well as eLearning to become involved in vocational education for training in the area. Hyperlinks have a very important role in hypertexts and also e-Learning systems. This occurs because hypertext, hypermedia as well as eLearning is a dash at each different point for each information. Systems in Hypermedia can also provide a variety of access to each link that includes multimedia applications, such as images, and audio clips. This means that both the user and the developer should understand any information that will be presented in the system, be it hypertext or hypermedia. In addition, systems in eLearning that also use a number of strategies in the readings that are considered precise are important(Verezub & Wang, 2008).

An increase in eLearning emphasis in every sector of education includes a professional vocational education domain. It also offers enormous potential in providing interactive learning with the latest multimedia material with much greater flexibility for access to use. Demand for online learning materials needs to be balanced with intensive attention to the quality and design of materials made. This is because technology can improve capabilities and not just as a transfer of learning content and the same abilities(2-Revell, 2003).

Now, social media is becoming the center of information gathering, as well as being shared, and dissemination also in the business world. It can open new opportunities. In addition, it can also expose a new range of risks. Social Media that as users will be seen more professionally when in the use of companies using various types of skills. This can be a search system, a selection, evaluation steps, administrative completeness, creation innovation, as well as a form of publication for information(Schmidt et al., 2014).

In New South Wales (NSW) There is an educational institution namely the Western Institute of technical and Advanced Education (WITAFE). The often-known vocational education and training programs of VET/vocational education and Training are there. The Program will be delivered to students within a secluded guesthouse as well as an Aboriginal community whose distance is far away through interactive e-learning distance (IDL). It provides satellites powered by two-way voice broadband, and one-way video as well as Internet access for school and educational schools. The average parent accesses this type of VET course by using all the equipment that has been given to their child. Where their children were students from The School of the air. In addition, it can also access the VET with community-owned facilities in the remote Aboriginal community. Providing lessons through satellites to isolated students, TAFE NSW can help fight any injustice in the difference in distance. In addition, TAFE NSW minimizes the technological gaps in rural education and can help with renewal in rural areas(Twyford, Crump, & Anderson, 2009).

Elearning in the webform

The use of e-learning also became an ordinary thing in post-graduate education. A Dementia study program that provides a basis for reflections on the use of his learning approach supported the utilization of web-based learning.

Students enrolled in this program are used in different health and social care settings and also have varied roles, but all students still have a desire to grow and thrive in the effort to increase knowledge and skills in a field that is currently limited to professional development(Innes, Mackay, & McCabe, 2006).

Continuing education and vocational training (CVET) strategies for companies, especially for small and medium enterprises that are often called SMEs, this at fails in efforts to support many long-term lives for students with special needs. WEB 2.0 and 3.0 applications that underlie e-learning as well as mentoring through social networks prove to be very useful in most academic contexts. In addition, it can be used to improve any existing knowledge. Efficiency at CVET at SMEs can also be used to gather everyone with special needs that are willing to work(Hamburg & Hall, 2013).

There is some evidence to demonstrate that it has not been carried out ongoing learning from the formal implementation of eLearning. The use of CVET is often adopted by various individuals on informal learning in most SMEs, or assistance for social integration(Hamburg & Hall, 2013). In addition, there is also a final report of the study on the use of e-Learning in sustainable vocational training at work, with emphasis on small and medium enterprises (DG EAC 21/02)(Daelen, 2005). Both studies show that CVET relates to SMEs.

The Blended Learning concept combines self-reliance learning with a web-based eLearning platform as well as classroom instruction in a face-to-face workshop. This can show the possibility of an adaptation between individual knowledge and skills that can be independently controlled in the learning of abstract content. Such exercises can enable a practical application with a typical training method. Generally, many people think the application is quite complex. This can guarantee a correct understanding. Teaching groups in a class with participants as managers allows adaptation to the needs of individual training. Integration in vocational training becomes a facilitated job-based application. The app promotes ideas in the field of lifelong learning (Gröschl, Götz, Loderer, Bills, & Hausotte, 2015).

E-Learning technology, especially the web, has a significant impact on all aspects of society. It includes training education with institutions that invest very high in technologies such as Learning Management Systems (LMS) and e-Portfolios. And newer there is currently WEB 2.0 technology with forms such as blogs, wikis, and forums. The advantages offered on this technology give the meaning that online learning or eLearning is currently supplementing and in some cases, it is possible to replace the traditional approach (meet up face) for teaching and learning(Connolly, Gould, Baxter, & Hainey, 2011). In addition to Connolly's research, Thomas also stated that eLearning can fit the nature of vocational training that focuses on skills competency(Connolly et al., 2011).

Elearning in the form of mobile

This mobile knowledge management system aims to capture and integrate student feedback and create frameworks for the optimal virtual learning environment. The challenges and limitations implied by the Mobile world in terms of handheld devices and mobile user interface design(Stănescu, Ştefan, Roceanu, Stefan, & Hamza-Lup, 2009).

Science management and technology learning face new challenges in recent years. The challenge was due to a rapid change in the field of the business environment and technological advancement. Work and role never remain silent in a rapidly changing business environment. The slow process that is in the creation of formal learning materials vocational training across the organization can create barriers to adoption and the use of learning technology. Mobile devices become stronger and increasingly used in parallel with a PC or notebook. People who spend a lot of time on business travel are also very often using it. Knowledge of eLearning tools management should also be available for mobile devices and not just an integrated Web application that is widely used on the Internet platform(Müller & Faltin, 2011).

Skill and mobile-based content tagging, by location, learning content management is presented as two possible trends for personalized learning to accelerate the competency time in the global economy that needs to Overcoming demographics and up-skilling challenges(Cardinali, 2006).

Facility Management (FM) for the last twenty years has entered into programs at universities in many countries. It is also a part of the various activities that exist in the training. During this time learning is centered on teachers who sometimes provide project-based work. The traditional form of learning is only partially supported by the eLearning platform. Large e-learning requests exist for knowledge transfer. In addition to this use of digital media will also become more common for various ages, it is not fixed only the young generation alone. The form of learning that is packaged into a game will be very interesting in knowledge transfer and acquisition. Games that will look serious by collaborating on every side of the game element are fun. This makes it a serious student-learning character despite using modern teaching methods. A number of such serious gaming applications have improved over the last few years, such as health care courses, military training as well as education. Until now there is still no comparison to FM(May, Holzer, & Otto, 2012).

Changes in the same field of education as economic changes may occur. The changes caused by electronic networks make the economy that initially real encounters become unreal anymore, this is often called e-Business. The same is also the case for learning. Learning is initially facing to face to distance learning. This learning requires no circumstances, where the teacher and the student are in one place and one time. This is called e-learning. Vocational learning will probably change that way. However, the existing eLearning cannot replace the vocational training instruments, but it is more towards complementing the quality of learning(Revermann, Georgieff, & Kimpeler, 2009).

eLearning that complements the quality of vocational training learning expected a few years ago is only partially fulfilled on the basis of the analysis of the current potential experience. This is because building an e-learning content needs a variety of preparation and representation. In addition, quality evaluation is also a determining factor for facilitators and learners. There is still great potential for development in these e-learning fields. eLearning can only last a long time in daily operational life. This existence will occur when e-learning guarantees acceptance in implementation. In addition, eLearning courses should also give you care as desired. The main requirement to achieve existence is by making the same learning process as in the working world in more detail. The next requirement is the assurance of the quality of the instruments in the e-learning content during the manufacturing process and product. E-learning is able to develop its potential for vocational and training even though it is not fully qualified(Revermann et al., 2009).

Now culture awareness is becoming increasingly important in the work for every vocational teacher. Teachers involvement in intercultural learning experiences in the form of highly multicultural online courses is one of the ways to develop these skills. The design and implementation of this online course are challenging. The challenge is a significant cultural difference per country in attitudes, expectations, and technical skills(Sousa, Väljataga, & Laanpere, 2010).

It's not easy to integrate generic competencies into e-Learning environments. The process requires a more sophisticated assessment tool. Because judgment with traditional exams alone is not enough. This requirement is fulfilled with the development of portfolio assessment. At the same time integrate elements of self-reflection and feedback. Portfolios are deemed appropriate to stimulate creativity, collaborative ability, and scientific learning strategies to regulate the direction of a generic competency(Krämer & Seeber, 2009). The majority of students have a positive attitude towards e-Learning (Awg, Hj, & Mohamad, 2010).

Educational technology of e-learning is needed anywhere. One of those Indians who needed the technology to assist its inhabitants in reducing the illiteracy of India spread over 22 Indian languages. In addition, the population of computer literacy in vocational training and school education from K1 to K12 to technical education is also provided. E-learning is a whole unit to handle any content that varies from different languages with very varied contexts (Chimalakonda & Nori, 2012).

The Project "supports vocational teachers and trainers in eLearning" (E-VET2EDU) into a two-year term international project. The project gets funding from the European Union, which has developed the steering wheel of online courses. This online course is fully open (Vettel) with a choice of 9 different languages. This online course aims to train vocational trainers in using eLearning course facilities. Some of the project's main objectives include not only the development of course materials and the multilingual learning environment associated with the course but the increasing knowledge of VET, the student experience, facilitator and coordinator The course is very important(Gutiérrez, Sánchez, Castañeda, & Prendes, 2017).

CONCLUSION

Education e-Learning needs to be continuously developed because it has a lot of positive impacts. So has been widely implemented in learning. Good e-learning technology is a web, and mobile learning has a significant impact on all aspects of society including education and training(Stănescu et al., 2009)(Müller & Faltin, 2011)(Connolly et al., 2011).

How Indonesia implements vocational training as it is in Connolly's research, Thomas declares eLearning in accordance with skills competency needs such as the nature of vocational training in education should be examined again(Connolly et al., 2011).

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