ISBN : 978-602-97249-0-5

Proceeding

INTERNATIONAL SEMINAR
VOCATIONAL EDUCATION AND TRAINING

The Challenge for VET in Developing Skills for Today's Workforce

Yogyakarta, 18 May 2010

Graduate School
Yogyakarta State University
Indonesia

International seminar "the challenge for vet in developing skills for today's workforce"

ISBN : 978-602-97249-0-5

E-LEARNING READINESS OF VOCATIONAL SCHOOLS IN ENHANCING GLOBAL WORKFORCE

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Abstract

E-learning readiness is significant to the success of education programmes that utilize Information and Communication Technology (ICT) resources. This paper will discuss and analyze the E-learning readiness of vocational schools (SMK) in Yogyakarta Special Province in enhancing global workfroce.

Data were gathered from sample of vocational schools in Yogyakarta through direct observation of facilities and support infrastructure, in-depth interview, and questionnaire about the understanding of computers, ICT-based instruction and e-learning. Analysis was performed based on three factors: facilities and infrastructure readiness, human resource readiness and learning resources readiness.

The results show 1) Readiness of vocational schools in Yogyakarta in implementing e-learning from the aspect of infrastructure and facilities is sufficient but for complex content needs an upgrading to become higher specification. 2) Concerning aspects of human resources (teachers, students and employees) are sufficient but need to be enhanced in the future. 3) Concerning aspect of learning resources readiness is qualitatively still less sufficient, so it must be enhanced to implement e-learning based instruction.

Keywords : E-learning readiness, human resources, ICT, vocational school.

A. Introduction

The development of information and communication technology (ICT) got positive response from the people in the world. Various community have already implemented the information and communication technology (ICT) in their fields. Business fields have been implemented ICT in their business that was known as e-business or e-commerce, governments have been implemented ICT in their business that was known as e-government. Educational institutional have been implemented ICT in learning process that was known by e-learning (Farhad, 2001).

Ministry of National Education as an organization that works to manage education in Indonesia welcomes the development of ICT and include a curriculum that nuanced of information and communication technology, especially in high school and vocational school. This response indicates that the government consider development of information and communication technology in enhancing global workfroce. This policy aims to enable students to have the ability in recognizing, understanding, and interacting with everyone in the world.

Vocational school as one of the education institutions needs to equip students and graduates with skills appropriate including the competence of ICT. Demands that must be implemented to schools in the implementation process of learning that utilizes information and communication technologies face many obstacles that are not simple. The main problem frequently faced by the schools and teachers is the limited infrastructure, human resources and learning resources.

B. E-Learning-based Instructions

There are many definitions about e-learning, but in this article e-learning define as the delivery of a learning, training or education program by electronic means. E-learning involves the use of a computer or electronic device (e.g. a mobile phone) in some way to provide training, educational or learning material. (Stockley, D, 2006). E-learning can involve a greater variety of equipment than online training or education, for as the name implies, "online" involves using the Internet or an Intranet. Flash Dish, Hard disk, CD-ROM and DVD can be used to store and provide learning materials.

Electronic learning or e-learning is a type of technology supported education/learning (TSL) where the medium of instruction is through computer technology, particularly involving digital technologies (Wikipedia). E-learning has been defined as "pedagogy empowered by digital technology". In some instances, no face to face interaction takes place. E-learning is used interchangeably in a wide variety of contexts. In companies, it refers to the strategies that use the company network to deliver training courses to employees. In the United States, it is defined as a planned teaching/learning experience that uses a wide spectrum of technologies, mainly Internet or computer-based, to reach learners. Lately in most education institutions, e-learning is used to define a specific mode to attend a course or programs of study where the students rarely, if ever, attend face-to-face for on-campus access to educational facilities, because they study online.

In higher education especially, the increasing tendency is to create a virtual learning environment (VLE) (which is sometimes combined with a management information systems (MIS) to create a Managed Learning Information Environment in which all aspects of a course are handled through a consistent user interface standard throughout the institution (Agboola, 2006). A growing number of physical vocational schools, as well as newer online-only schools, have begun to offer a select set of academic degree and certificate programs via the Internet at a wide range of levels and in a wide range of disciplines. While some programs require students to attend some campus classes or orientations, many are delivered completely online. In addition, several educations institutions offer online student support services, such as online advising and registration, e-counseling, online textbook purchase, student governments and student newspapers.

E-learning can also refer to educational web sites such as those offering learning scenarios, worksheets and interactive exercises for children (Alan, 2006). The term is also used extensively in the business sector where it generally refers to cost-effective online training. The recent trend in the e-learning sector is screen casting. There are many screencasting tools available but the latest buzz is all about the web based screencasting tools which allow the users to create screencasts directly from their browser and make the video available online so that the viewers can stream the video directly. The advantage of such tools is that it gives the presenter the ability to show his ideas and flow of thoughts rather than simply explain them, which may be more confusing when delivered via simple text instructions. With the combination of video and audio, the expert can mimic the one on one experience of the classroom and deliver clear, complete instructions. From the learners point of view this provides the ability to pause and rewind and gives the learner the advantage to move at their own pace, something a classroom cannot always offer

C. Conceptual Framework

E-learning readiness assessment allows one to design comprehensive e-learning strategies and effectively implement ICT goals. In this paper, “e-learning readiness” is defined as the capacity to pursue opportunities facilitated by the use of e-learning resources such as the internet (Kaur, et al., 2004). An e-learning readiness assessment therefore calibrates the degree of ability and the capacity to pursue knowledge in a

specific context. Because different groups of people, or different nations and populations, have different ways of responding to knowledge-oriented initiatives, e-learning readiness studies have to take into account the particular influences that are brought to bear upon each situation, institution or learning programme. For this reason, this paper focuses on the capacity of Vocational School receivers and enablers to engage in e-learning pathways designed and implemented for the purpose of knowledge construction within e-learning educational programmes.

E-learning readiness will be measured and analyze on three factor that influenced to successfully implemented e-learning systems (Ali, et al, 2007). Three factors will be measured include:

1. Technology Readiness

The readiness of facilities and infrastructure is a form of school readiness preparation resource-based learning technology to make e-learning. The components of infrastructure include :

a. Hardware

Hardware readiness can be seen from the number and quality of the tools and peripherals of computer systems that supported e-learning. The hardware readiness included :

- Server
- Database Server.
- Client Computer
- Hub/Switch
- Communication technology

b. Software

Development of e-learning systems require software and hardware. Because e-learning system to be developed is based on the network so that the necessary application software covering:

- Operating System Software
- Web Server
- Database Server
- Web Viewer,
- Web Browser
- Learning Management System (LMS)

2. Human Resources Readiness

Human resources are the backbone of the success of e-learning based instruction. The readiness of human resources can be measured from the knowledge and skills to use ICT tools in learning process. There are three element of human resources that must be considered in e-learning systems, they are:

a. Teachers
b. Students
c. Technicians

3. Learning Resources Readiness

Learning Resources are material that will be learn by students in learning process. In most traditional learning processes, learning resources are still using books, modules, teaching materials printed on paper. Learning resources in e-learning can not use conventional learning resources, but must use digital learning resources. Learning resources that used in e-learning include:

a. Printed Learning Material

   Learning or Teaching materials in printed form on paper is one source of learning processes, commonly used in the present study. In the process of teachers learning to read books and teaching materials in teachers' attention, reading, doing assignments, summarize, evaluate the material being taught. In e-learning based instruction, learning materials like these can be used as a complement to the document that is uploaded on the e-learning.

b. Digital Interactive Learing Media

   Along with the development of multimedia technology, today many developed multimedia-based interactive learning media. Instructional media is usually packed in the form of CD learning and can be run with either the computer or on a personal computer connected to the internet network. Interactive learning media typically uses an interesting display with animation techniques to explain the material that is abstract, such as electric fields, magnetic fields, electromagnetic induction, circulatory systems, gasoline engines work, and others.

c. Digital Learning Material

   Learning materials that can be uploaded on the Internet and e-learning is the material in digital format. Since many existing digital file format to be agreed

using the file format where that communication between teachers and students become better. Generally to reduce the size of digital files used in data compression formats Zip, Rar or any other compression formats.

D. Method

Method is the steps being taken to achieve the goals set. E-learning readiness of vocational school in Yogyakarta will use qualitative and descriptive approach. Measurement the e-learning readiness of vocational school in Yogyakarta use observation to the supporting infrastructure, depth interview to human resources (teachers, students and technicians), and questionnaire about the computer knowledge, e-learning knowledge and skill in ICT based instruction. The choice of sample was determined by taking five random of vocational school in Yogyakarta.

Data Analysis Technique

Methods and instruments that were used to collect data conducted in the following ways :

- Concerning the readiness of facilities and physical infrastructure, was done by direct observation.
- Concerning the readiness of human resources, was done by in-depth interview and questionnaire to the teachers, students and technician.
- Concerning the readiness of learning sources, was done by portfolio.

Instruments that used to measure the readiness of human resources that was done by questionnaire with likert scale. For the purposes of quantitative analysis, the respective answers are given scores as follows:

Criteria	Score
• Very god	4
• God	3
• Enough	2
• Bad	1
• Very Bad	0

E. Result

1. Technology and Infrastructure Readiness

   Based on observations of the infrastructure in vocational schools in Yogyakarta were obtained the following data:

No.	Aspect	Explanation
1.	Computer laboratory availability	Sufficient with the amount over two or more
2.	Number of computer in laboratory	Sufficient with the amount per lab ranges 10-20
3.	Computer Specification	Enough (Equal with P2, P3, P4, Core2Duo)
4.	Computer Network	Sufficient
5.	Internet Access	Enough
6.	Original and Legal Software availability	Very Less sufficient
7.	Utility open source software	Very limited

2. Human Resources Readiness

a. Teachers

No.	Aspect	Score	Percentage	Explanation
1.	Knowledge of computer	3,12	78 %	Good
2.	Skills using ICT in learning	2,97	74 %	Good
3.	E-learning Knowledge	3,02	75 %	Good
4.	Skills of communicating with the ICT and E-learning	2,60	65 %	Less sufficient

b. Students

No.	Aspect	Score	Percentage	Explanation
1.	Knowledge of computer	3,02	75 %	Good
2.	Skills using ICT in learning processes	2,62	65 %	Less sufficient
3.	E-learning Knowledge	3,05	76 %	Good
4.	Skills of communicating with the ICT and E-learning	2,24	56 %	Less sufficient

c. Technicians

No.	Aspect	Score	Percentage	Explanation
1.	Knowledge of computer	3,42	86 %	Very Good
2.	E-learning Knowledge	2,68	57 %	Less sufficient
3.	Skill in Admin E-Learning	2,34	58 %	Less sufficient

3. Learning Resources Readiness

No.	Aspect	Explanation
1.	Teaching material availability (printed)	Good
2.	Learning media availability	Less sufficient
3.	Digital teaching material availability	Less sufficient

a. Discussion

Based on the data can be analyzed that e-learning readiness in vocational school in Yogyakarta, in implementing e-learning can be specified:

- Technology Readiness such as the availability of laboratories, computers, computer specification, computer networks and internet access were enough, but need to utilize open source software. Categories sufficient means to implement e-learning based instruction could be done with a simple item that is good considering the limited quality of computers and bandwidth for Internet access. As one possible solution is to design e-learning for local purposes in the school who can access e-learning. With this restriction the implementation of e-learning can be enhanced with interactive instructional media content with a good multimedia animation.
- Human resources readiness can be analyzed from the knowledge and skills of teachers, students and technicians. Similarly, to the knowledge about e-learning, although limited in terms of theory. But for its utilization is still less both teachers and students. While readiness technician to support the learning e-learning is still less.
- Learning Resources can be said that the vocational schools in Yogyakarta are still not ready to implement e-learning based instruction. Some are already there who are ready but if viewed as a whole will generate on average a low.

F. Conclusion

1. Technology and infrastructure readiness is sufficient, but for complex learning content still needs improvement and upgrading of existing facilities and infrastructure.
2. Human resources readiness (teachers, students and technicians) in terms of general knowledge of computers and ICT is good enough, but still lack the skills to implementing e-learning, so the human resources should be increased with sort training.
3. Learning resources readiness is still less sufficient, so to implement e-learning must be produce learning resources in digital format.

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