THE IMPLEMENTATION OF ONLINE TECHNOLOGY TO PROMOTE AN EFFECTIVE TEACHING AND LEARNING AT UNIVERSITY LEVEL

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Abstrak

Isu ataupun permasalahan yang berkenaan dengan kualitas pengajaran dan pembelajaran pada tingkat Universitas telah lama muncul dari tahun ke tahun. Para pelaku pendidik, Instruktur, bahkan staf administrasi Universitas telah berupaya menemukan cara ataupun alternatif dalam upaya meningkatkan kualitas pengajaran dan pembelajaran yang efektif. Salah satu dari bentuk upaya tersebut adalah dengan penerapan Tekhnologi melalui sistem on-line yang dapat membantu para pelaku pendidik dalam hal ini tenaga pengajar serta mahasiswa dalam meningkatkan mutu pengajaran dan pembelajaran yg berbasis Tekhnologi .

Tulisan ini mencoba untuk membuka wawasan tentang penggunaan Tekhnologi serta manfaat yg bisa didapatkan sebagai bagian media yg inovatif dalam menciptakan pembelajaran yang berkualitas pada tingkat universitas. Alasan yg mendasar adalah penggunaan tekhnologi yg dapat mempermudah para pendidik dalam mentransfer ilmu di berbagai hal. Diantara nya adalah dalam sistem penilaian hasil kerja mahasiswa, merancang serta mengembangkan materi ajar. Sistem ini tentu saja juga dapat mempermudah mahasiswa dalam menciptakan pembelajar yg lebih aktif. Namun dalam implementasinya tentu saja penggunaan sistem ini sering mengalami hambatan dan permasalahan. Untuk itu dibutuhkan penelitian lanjut guna mendapatkan solusi yang tepat.

Kata Kunci : Teknologi, Promosi, Belajar dan Mengajar

Introduction

The quality of teaching and learning at university has been an issue in education world for decades. One major factor is might caused by teaching and learning process in this institution run ineffectively. To solve this problem, instructors, administrators and other related practitioners in education have tried to look for possible ways to help institution to improve the quality of teaching and learning more effectively.

In this matter, the existence of technology system in the world has made important changes in many aspects of education. On-line technology, as a part of technology development is currently introduced to enhance effective teaching and learning. This system provides numbers of software based applications for instructors to improve their teaching skill. This approach also offers positive effects on the way student learn.

The aim of this paper reviews the literature on the effective use of on-line system to foster teaching and learning process at universities. This technological network gives some benefits on teachers to improve the way they transform their knowledge, assess student's work, and improve their subject courses. This sophisticated system also allows student to alter their attitude on learning more actively.

However, there are some questions appear in the process of this review that have to be first answered before analyzing the effective use of on-line technology at universities. These questions might be formulated: how can this system encourage effective teaching and learning at universities ? and is On-line technology the only appropriate system to improve the quality of education? Thus, the points of this inquiry and other challenges or problems on the implementation of on-line technology, are described in the discussion.

The scope of this literature review is limited to the discussion of the effective use of on-line technology and its beneficial uses for students and instructors. Thease themes constitute the following literature review.

The Effectiveness of On-Line Technology System

Technological networks have become available for universities because of the technology development. This result in several changes on the way teachers teach, students learn and school systems are conducted. In this matter, on-line technology, as a part of the network system, plays a significant role to support the quality of education since it facilitates continual interaction among students and instructors.

On-line system offers an easier ways for students to control their own learning. As it is stated by Kosakowski (1998, p. 2) on-line technology can create a constructivist approach to make students think critically, analytically, and work collaboratively. The author claims that using on-line technology appropriately results in improving student's writing skill, encouraging students to become independent learners and self-starter and developing student's critical thinking skill.

Importantly, the article written by McGuire ((2005) emphasizes the use of on-line technology to provide sophisticated software system, eVIVA, for instructions to improve formative assessment. The author (2005, p. 267) claims that the role of human assessor is vital and a technology is introduced to make that contribution light, viable, and appropriate. However, Roschelle, et al,

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(2000) point out that on-line technology may not work alone to improve an effective teaching and learning. According to the authors (2000, p. 78) the successful implementation of this system is always integrated with the improving curriculum, teacher personal development, and other fundamental aspects of education

Concerning this view, I am largely in agreement with Roschelle ,at.al (2000).

I perceive that on-line technology is useful to provide many benefits on the way teacher improve teaching and learning, but this system has to be integrated with other fundamental aspects of institutional structures.

The Beneficial Uses of On-Line Based System on Instructors

On-line based system offers benefits for instructors to create more effective teaching and learning at university. Instructors can access numbers of web sites which are designed to help them to improve teaching and learning effectively. World Wide Web for example, a kind of on-line system, offers numerous contributions to instructors to improve their teaching skill.

In their article Seal and Przasnyski (2000) investigate the effective use of web system to enable instructors to inform general course outlines, distribute the class notes, study guidance and supplementary materials for students. The authors (2000.p, 34) argue that that using a web base system, instructors can obtain systematic feedback from students on lecture notes. Instructors can then take appropriate actions to help students with their learning difficulties during the course.

To support their argument, the authors exemplify the use of on-line technology in their project at College Business Administrator (CBA). In their survey, the authors investigate and analyze the effectiveness of systematic feedback provided in web system to help instructors to create better learning environment and to identify particular areas of student's learning difficulties.

From their result finding, Seal and Przasnyski (2000.p,37) presume that feedback in this way is benefit for three reasons; firstly, this electronic format enables instructors to concentrate on giving the appropriate response to the students and improve the course materials. Secondly, since the feedback is in electronic form, it provides quick access for future reference. Student's responses can be accessed easily and it is useful for instructors to evaluate their own teaching improvement from semester to semester. Lastly, feedback is benefit for fostering interrelationships between students and instructors.

Similarly, Owston (1997) highlights that web site system enables instructors to make learning more accessible. The author (1997, p. 27) argues that web base technology offers interactive multimedia learning, simplified access to and searching of database, graphical screen layout which are all created accessibility leaning process. To support his argument, Owston exemplifies some formal and informal institutions in London and England that have made use of the web system of it functioned effectively.

From these perspectives, I partly disagree with the point of views of these three authors. For the first reason, I will argue that, web system often creates several problematic issues on learning. There are some limited download of literature resources on web which are influenced on student's learning achievement. It sometimes creates serious problems for students who conduct their course project because they have limited accesses on supplementary resources in web site. Second reason is that technical problem in software and hardware system often appears that make this system run ineffectively. So I might suggest that, this web system is obviously important for instructors to improve their teaching skill, but well maintained of this software system is importantly conducted and professional technical supports are crucially required to keep this system run efficiently to create an effective teaching and learning.

In addition, McGuire (2005) indicates that online technology helps instructors in assessment processes. The author (2005, p.265) states that any assessment tools and processes are used to give students an opportunity to reflect on their work and give them meaningful feedback from their instructors. To support this view, the author conducts research to examine the effectiveness of eVIVA, a digital software system which is designed to help instructors to evaluate students' work. The author provides responses to the use of technology through this software to support the assessment process at his project at Ultralab Anglia Polytechnic University. She offers insights into ways how eVIVA might be conducted to encourage teachers to actively construct their knowledge assessing students' work. McGuire (2005.p, 267) perceives that this new digital technology can enhance the reflection and dialogue both students and instructors about the learning process. Having some comments from instructors through voice recording file, students can then feel confident to improve their work.

In her article, the author also provides information about the important of eVIVA on her research project. From her research finding, the author concludes that eVIVA is useful to increase students' motivation and self esteem. Students might be more independent learners by taking responsibility for their own learning, and interrelationship among students and instructors can be improved. (2005, p. 270)

Admittedly, I do not in the agreement with the author's ideas. My arguments against the author is that although eVIVA system offers systematic ways for instructors in assessing students' learning, it often brings problems for students who have limited experiences in operating this system that can potentially influence on their learning achievement and motivation. Students who have never experienced anything about this system obviously find serious barriers in learning.

The limitation of the article written by McGuire is addressed only in the discussion of

the aspect of cognitive skill to help teachers to assess student's work. Social and emotional aspects which are regarded as fundamental aspects to improve an effective teaching and learning processes are not taken into consideration in the discussion. Furthermore, McGuire's paper is largely based on her personal experiences on implementing eVIVA system on his project. Formal studies to prove the effectiveness of using this on line system seems do not draw upon.

The Benefits Uses of On-Line Technology on Students

The existence of online technology in education has become a powerful element to help student to be more active to improve their skill and knowledge.

This network system enables students to improve the skills of communicating, problem solving, critical thinking, and analyzing information.

Regarding these perspectives, Roschelle, et.al (2000) try to explore the ways on how on-line system can be used to improve students learning method. In their article, the authors begin with the discussion of using technology to enhance how students learn. The authors (2000, p. 79) say that students can learn through active engagement by constructing actively their knowledge and experiences as well as interacting with their friends and instructors. According to them using on-line technology to engage students in learning can be conducted through numbers of computer based applications. Students might construct their presentation in desk top publishing that reflects on their understanding of various subjects. The authors (2000, p. 80) also claim that on-line technology provides a broad range of collaborative activities by structuring group project that encourage the degree to which classroom are socially active and productive to expand student's understanding of the course material. The authors perceive that students who are actively participating in on-line connected learning network might experience better in increasing motivation, better understanding of concepts and able to solve difficult questions.

Similarly, Owston (1997) emphasizes the use of on-line technology to improve students' written expression skill. The author believes that when students have to write to their real audience they will be more conscious of the three language elements, vocabulary, syntax and grammar. Email reply, electronic reply form or internet news group readers are part of online technology that enables students to improve their written communication skills as well.

The view I am putting forward here is largely in agreement with Roschelle, et, at. I assume that student engagement in learning process is similar to active learning. Students are not only engaged in learning but they also have to be engaged with direct experience of something new. In this case, it might be presumed that on-line base system may facilitate students to become active engaged learners.

On-Line Technology Application and Its Challenges

The use of on-line technology at universities focuses on assisting students to obtain their learning achievement and help instructors to improve their teaching skills and knowledge. Although the existence of new technology can improve the quality of education, it still has more challenges on its implementation.

The article written by Roschelle et.al (2000) illustrates on how on-line technology might influence student's attitudes to learning, and highlights some challenging on the implementation of this system at institutions. The authors begin their article by explaining the effective use of on-line technology as a learning tool in improving education. They claim that on-line technology can support four fundamental characteristics of effective learning which are involved active engagement, group participation, frequent interaction and feedback, connection to the real world context.

(2000, p. 79)

It is interesting to note that, Roschelle,et,al. introduce numbers of software applications and their features, such as SimCalc, where students can learn basics skill of calculus and designing graph. Globe Program, is useful to improve student's knowledge in science. CSILE System, is designed to help student to get community data base to share their finding when they conduct a research.

Furthermore, the authors also note some barriers or challenges on the implementation of on-line technology. They indicate (2000, p. 90-91) that the effective use of on-line technology has to be effectively supported by technology accesses and technical supports, strong collaboration among instructors and instructional vision and its rational link to technology uses. Importantly, the use of on-line technology requires skillful instructors who can operate this system in teaching and learning. The authors presume that instructors who success in using on-line system often makes substantial changes in their teaching style, however, making such changes is difficult without appropriate support from university and other educational aspects that can encourage the successful implementation of this system.

In this mater, I might agree with the authors. I would say that the use of on-line system at universities requires qualified instructors who are able to operate this system accurately. To obtain this skill, instructors have to learn more how to use this digital system and improve their knowledge in computer skills. Creating substantial changes on the style of teaching are obviously the results of using on-line technology successfully. Thus, to make these significant changes,

instructors should have great supports and commitment from administrations.

In contrast, Wedman and Diggs (2001) claim that barriers or challenges on using on-line technology at universities might be identified by implementing a model of performance pyramid to create continual support for instructors to be involved in the process of incorporating technology system in their teaching. In their article, the authors describe this performance pyramid as six building blocks which are involved, (1) expectation and feedback, (2) tools; environment proves (3) rewards, recognition and incentives, (4) motivation and self concept, (5) performance capacity and (6) knowledge and skill (2001, p, 423).

To support their argument, the authors have conducted survey studies to analyze the effective use of this model to create technology-enhanced learning environment in Teacher Education Program at University of Missouri. From the result of their survey, Wedman and Diggs (2001, p, 426) conclude that there are several factors identified as barrier in implementing on-line technology at university. These factors include, expectations, feedback, tools/processes/facilities, rewards or incentives and knowledge and skills.

Furthermore, in their article, the authors also present systematic actions to help instructors with these technology barriers in teaching. They suggest that expectations in terms of on-line technology utilization are needed along with systematic feedback to provide college instructors with the information to improve their instructional practice. Incentives and reward related to technology use are needed for teacher development. Effective approaches for colleges and institutional development related to the technology skill and knowledge are urgently required (2001, p, 428). From the actions suggested, Wedman and Diggs believe that significant process in implementing on-line technology has been made to lead instructors to the technology-enhanced learning environment.

Similarly, the article written by Wilson, Stacey (2003) illustrates some approaches that can assist instructors to be successfully integrated with on-line technology into their teaching method. The authors (2003, p. 544) emphasize that competent online instructors should have major roles of content facilitator, technologist, designer, administrator, advisor or counselor, assessor and researcher. They assume these main task areas are regarded as a competency framework to provide and build instructors' skill and knowledge to teach effectively using on line technology.

Along the views of the authors mention here , I might suggest that the effective use of on-line technology has to be integrated with some other components in education such as curriculum policies, assessment and evaluation, clear goals on instructional practices which all these aspect are crucially important to engage college instructors in on-line learning environment.

Conclusion and Implications for Further Research

On-line technology has made important changes to improve the quality of education. The existence of this sophisticated system offers more benefits to help instructors to improve their teaching skill in many teaching aspects such as the way instructors transform their knowledge, assessing student's work, designing course materials and making these course subjects more accessible.

This system is also useful to encourage students to improve their learning method. Using software applications in on-line technology system, students might construct their knowledge in many skills. This also helps students to create collaborative activities that can bring positive effects on their learning motivation. Moreover, the effective use of software application in the system leads students to improve their written communication skill as well.

The implementation of this system at universities has resulted in valuable contributions for institutions to improve the quality of teaching and learning. Even though there are still some challenges on its application, appropriate ways to cope with these challenges have to be found to improve instructors' competencies to use this system in order to create an effective teaching and learning.

To sum up, I would say, this literature review summarizes some aspects of the effective use of on-line technology to promote effective teaching and learning at Universities. However, the implementation of this technique still experiences more challenges and problems. Thus, formative evaluation of online technology effectiveness and formal studies on the appropriate uses f this system are still importantly needed for further research.

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