The Shifting on the Pedagogical Conceptual Model of M-Learning

Dwi Sulisworo

Physics Education Department, Ahmad Dahlan University, Indonesia
dsw_uad@yahoo.com

Abstract
The rapid development in information technology has influenced the current learning strategies. The teacher ability in selecting and using technology will determine the learning success. Nowadays, there is a shifting on learning in which learning becomes more personal. The affects of this shifting engage the different roles of teachers, students, and school. The aim of this research is to figure out the new pedagogical model of learning due to the information technology. The research methodology is the literature study using latest information related to learning shifts caused by information technology. Furthermore, the analysis of this research is a qualitative descriptive approach. The results of this study indicate that mobile learning becomes more personal called personalized learning. The implication of this model is that teachers, students and schools will have different roles. More focus on individual learning will change significantly on instructional design.

Keywords: *mobile learning; e-learning; education technology; distance learning; constructivism, personalized learning.*

1. INTRODUCTION

Wireless and mobile technology has developed very rapidly in recent years. This technology is becoming increasingly high- ability with a cheaper price. In the previous research (Sulisworo, 2012) stated that digital mobile technology has provided new opportunities for the availability of different new learning forms; included in the relationship between teachers, learners and learning objects. Considering the current technological developments and also the latest results of research on motivation to learn, the appreciation to the learning interest and attitude are to be more vary related to the media facilitated learning and learning resources. Learning is much more easy and diverse (Sulisworo, 2014). Inability of teachers, students, and learning interaction adjustment will make ineffective on learning result (Sulisworo, The Paradox on IT Literacy and Science's Learning Achievement in Secondary School, 2013).

M -learning with this changing environment needs to be seen again how the pedagogic models that can be used to guide the development of the learning system. Information technology and mobile communications are essential to allow the formation of a new social structure in learning (Sulisworo, 2014). Therefore, problems can be identified as a pedagogical model that is suitable for m-learning which more personal. Using this model, it can develop a various strategies and approach of mobile learning which can drive learning success (Sulisworo, 2013).

2. METHODOLOGY

Depending on the purpose of the study several strategies are available, each having distinct characteristics. For this research purpose, the strategy that be conducted as follow: Obtain access to source, List materials using selection criteria, Evaluate relevance and Evaluate validity, Perform check for "completeness". Basically, the method is descriptive qualitative method.

3. RESULT AND DISCUSSION

From the previous research (Sulisworo, 2012), there are many aspect to be considered on the model development. The first is the mobile technology trends. Mobile devices are generally small, portable and compact (Attewell & Savill-Smith, 2004) (Kukulska-

Hulme, 2007) (Traxler, 2007). This device is more suitable for pocket or purse. Mobile devices are relatively cheaper, lighter, and can be used for a long time due to efficient electricity or can use disposable batteries or recharge (Chen, Chen, Hwang, & Yang, 2010) (Cobcroft, 2006). The smaller screen sizes on mobile devices are acceptable because the emergence of various mobile devices that also provides a wide screen for user convenience (Cobcroft, 2006). Some of these devices have good audio that allows students to repeat the subject matter instead of reading material on the screen (Sangrà & González-Sanmamed, 2010). In new developments, this tool is increasingly adapt to the various user needs that can be utilized in the e-learning and also enable to send much amount of and quickly information; something unavailable on the conventional computer (Cobcroft, 2006) (Farajollahi & Moenikia, 2011) (Sangrà & González-Sanmamed, 2010).

The second is the constructivism as a learning paradigm on m-learning. It is clear that the theory behind the second form of study used is the same; integration of technology in learning can improve the learning experience. M-learning gave opportunities for learner to stay involved in their learning environment while this cannot be obtained through static technology devices such as desktop computers (Traxler, 2007).

Now, we have been facing change in the philosophy of teaching and learning, moving away from a teacher-centered to student-centered approach (Cobcroft, 2006) (Farajollahi & Moenikia, 2011) (Sangrà & González-Sanmamed, 2010). Two paradigm shifts i.e. human-centered computing and learner-centered education are studied extensively; and mobile technology gives more possibilities to improve the quality of learning in many aspects (Ally, 2009) (Casey & Evans, 2011) (Chelliah & Clarke, 2011). The capability of students to actively construct knowledge, rather than the more passive in response to a tutorial action is very important in new learning approach (Chelliah & Clarke, 2011) (Chu & Kennedy, 2011). Constructivism learning approach encourages learning to make explicit the thinking explicit, making reasoning, fostering effective problem solving & planning skills, learning to learn from errors, and developing reflective meta cognitive skills (Crampton, Ragusa, & Cavanagh, 2012) (Chu & Kennedy, 2011). The common understanding of constructivism was that by actively trying to create something concrete (physical or computational) to solve the problem (Harris, 2008) (Cobcroft, 2006) (Chelliah & Clarke, 2011). The articulation and reflection on their thinking whether it worked or needed revision is common in the constructivism approach (Sulisworo, 2012). Teacher and students should engage in an active dialogue (Chu & Kennedy, 2011) (Chelliah & Clarke, 2011). Effective methods for structuring knowledge should result on simplifying, generating new propositions and increasing the manipulation of information (Ally, 2009) (Cobcroft, 2006).

There are three main principles in the instructional approach i.e. instruction must to be concerned with the experiences and the context that make the student willing and able to learn (readiness), instructions must be structured so that it can be easily captured by the student, and instructions should be designed to facilitate extrapolation and to fill the gaps (Chelliah & Clarke, 2011) (Chu & Kennedy, 2011) (Cobcroft, 2006) (Crampton, Ragusa, & Cavanagh, 2012).

The third is the interaction between m-learning components. The m-learning component includes the device, learner, and social aspects (Ally, 2009). The attributes of the device usability and social technology intersections describe the affordances of mobile technology (Cobcroft, 2006). The intersection labeled interaction learning contains instructional and learning theories with an emphasis on social constructivism (Chen, Chen, Hwang, & Yang, 2010). All three aspects overlap at the primary intersection. Hypothetically, the primary intersection, a convergence of all three aspects, defines an ideal mobile learning situation. The aspects should be take into account are: (1) device aspect that refers to the physical, technical, and functional characteristics of a mobile device (Attewell & Savill-Smith, 2004) (Chen, Chen, Hwang, & Yang, 2010) (Sulisworo, 2012) (Cobcroft, 2006) (Crampton, Ragusa, & Cavanagh, 2012) (Sangrà & González-Sanmamed, 2010); (2) learner aspect

including an individual's cognitive abilities, memory, prior knowledge, emotions, and possible motivations. This aspect describes how learners use what they already know and how they encode, store, and transfer information (Casey & Evans, 2011) (Chelliah & Clarke, 2011) (Kukulska-Hulme, 2007); (3) social aspect that related to and describes the processes of social interaction and cooperation (Casey & Evans, 2011) while a person joins a new community, he must share his own habit and culture and learn those of the new community (Sangrà & González-Sanmamed, 2010) (Kukulska-Hulme, 2007).

Effective mobile learning provides an enhanced cognitive environment in which distance learners can interact with teachers, course materials, physical and virtual environments, and each other. Educators need to respond with more flexible methods of knowledge management in order to prepare learners to navigate within an information rich world. Because the mobile learning process is defined by social, cognitive, environmental, and technological factors, mobile learning can help learners gain immediate and ongoing access to information, peers, and experts who can help them determine the relevance and importance of information found on both the internet and in their real-world environments. The pedagogical conceptual model of m-learning (Sulisworo, 2012) can be figured out as shown by figure 1.

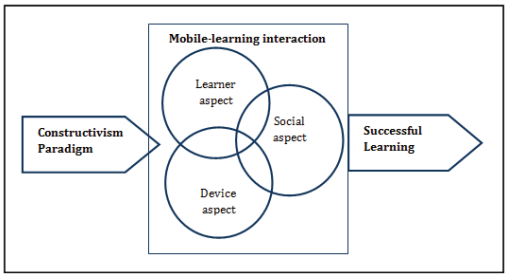

Figure 1. The model of the M-learning elements interaction

On the further research (Sulisworo, 2013), the learning environment has been shifted. This shifting especially occurred on several major trends, namely (1) the occurrence of virtualization, (2) theme -based learning, and (3) personalized learning.

The shifting to theme based learning supported by many and varied learning resources. This allows the development of learning based on a theme as the focus of the study (Sulisworo, 2013). This focus can improve motivation and interest in learning in a particular subject matter.

Information technology has facilitated the variety new learning approach allowing a student to develop naturally great driven by their own interests. They can find a wide range of knowledge through independent thought and experience in the real world. Therefore, learning becomes more personalized.

In a personalized learning environment there are a few things that need attention, especially in autonomous learning and the ability to manage individual (self - regulated learning) (Sulisworo, 2013).

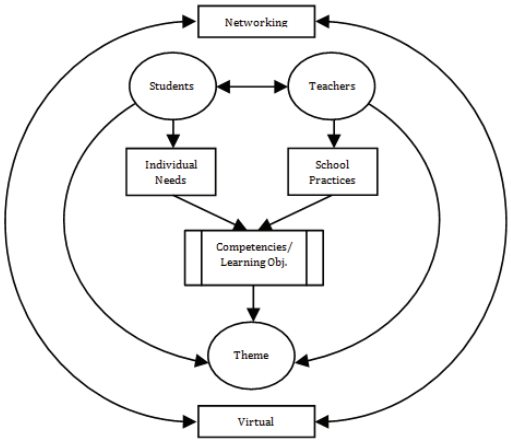

Figure 2. New learning environment on PLE

Two things into something significantly enhanced bullet. It should also be noted that an increase in responsibility and control that exist in students is not always the same as the increase in their motivation. Their active role in navigating on the virtual world to make decisions about how to look for, where to look, what to selected content related to the business and improve their understanding of the specific competencies.

Based on the further research, it can be modeled the new learning environment as shown by figure 2. Conditions change in the learning environment that encourages the emergence of a more personalized learning approach known as personalized learning environment. With this approach to learning, it is possible to determine the individual 's own purposes and in designing good learning associated with learning, learning targets, learning resources, peer learning, teaching materials, and a variety of other elements to build a more convenient learning interactions and build motivation (Sulisworo, 2013).

Based on the analysis, the new m-learning pedagogical model will divide into two aspects, i.e. the m-learning interaction and m-learning environment. The interaction is the intersection between networking activity, the based learning, and individual need and interest. The learning environment will be virtual, more personalized and using constructivism paradigm. This model is shown by figure 3.

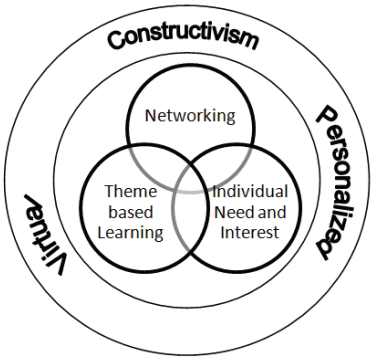

Figure 3. The new of m-learning pedagogical model

4. CONCLUSION

The learning success criteria will shift due to the rapid increase on information technology. Both, the changing of learning environment and learning interaction between m-learning components will affect the strategy and approach of learning to facilitate student. This implication should be considered by the school management decision making.

In the future learning become a personalized with learning peer from another country and also in many level of expertise. It mean learning is virtually a networking activity.

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