Learning Quality Innovation through Integration of Pedagogical Skill and Adaptive Technology

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Abstract: This paper aims to explore the modern learning environment (MLE) which may emerge from the secondary education into the tertiary education. This integration usually derives from enhancing the pedagogical skill and adaptive technology to strengthen the teaching and learning process. Literature review from referred books and journals was conducted with thematic analysis. The investigation was employed in depth analysis from referred books, journals and conferences using the keywords of pedagogical skill and adaptive technology and modern learning environment. The multiple finding from met-synthesis was conducted by searching for the information which is organised using substantive keywords. The findings reveal that the role of MLE can be divided into attempting to perform learning quality, integrating the learning with continuous process, making easy in getting the sources, creating flexibility in learning. This study is expected to contribute the way of maintaining inside factor within the human being which is significantly necessary to make effort in assisting spirit performance in teaching process. To assist students across learning environment by pedagogical skills with encouraging higher teaching and learning, making convince into the pedagogy might be necessary a way to promote a range of pedagogical skills continuing integration with technological tools. In addition, using experience to boost the abstract ideas acquired in certain subjects as the source of knowledge itself can become a particular principle for the enhancement of learning in higher education.

Index Terms: learning quality, innovation, pedagogical skill, adaptive technology, 21 century learning, modern learning environment, openness in education, access to resources, flexibility in learning.

I. INTRODUCTION

In the last few decades, the emergence of technological tool with the necessary benefits like flexibility, openness and access to resources has been existed in supporting strengths-based teaching and learning (Keppell, Souter, & Riddle, 2012). It aims to give the value with the experiences in creating the typical connections beyond the teaching and learning boundary (Anderson, 2008). As a result, to assist students across reaching academic knowledge, the role of modern learning environment (MLE) has the chance to integrate between pedagogical skill and adaptive technology. It can also be engaged into the digital era (Beetham & Sharpe, 2013) to encourage higher teaching and learning to make convince which is necessary as a way to maintain the motivational intention of constructivism and relevance to emphasise students’ learning experience. Thus, this paper attempts to critically explore the role of MLE in supporting the 21 century learning. This study begins with elucidating the conceptual framework on literature review on 21 century learning and MLE.

A. Towards Modern Learning Environment

Modern Learning Environment (MLE) has been introduced as the learning model supported with environmental section into the modern path. It covers the pedagogical and technological approach in creating classroom model more convenient. Designed to the teaching and learning process to support educational model, MLE is a kind of educational model that is the teaching and learning environment that can be engaged into the digital era (Beetham & Sharpe, 2013) to encourage higher teaching and learning to make convince which is necessary as a way to maintain the motivational intention of constructivism and relevance to emphasise students’ learning experience. Thus, this paper attempts to critically explore the role of MLE in supporting the 21 century learning. This study begins with elucidating the conceptual framework on literature review on 21 century learning and MLE.
B. About 21st Century Learning

The learning framework of 21st century was developed as an attempt to illustrate the skills and knowledge which students should possess to enable them get success in their life in terms of work, learning and citizenship (Garrison, 2011; Trilling & Fadel, 2009). To support the systems necessary for 21st century learning outcomes, it has been used into the series of higher-order skills, abilities, and learning dispositions (McPhail & Rata, 2016). This is part of a growing movement focusing on the skills required for students to master in preparation for success in a rapidly changing, digital society (Beetham & Sharpe, 2013). Many of these skills are also associated with deeper learning, which is based on mastering skills such as analytic reasoning, complex problem solving, and teamwork with learning preferences (Othman et al, 2016). These skills differ from traditional academic skills in that they are not primarily content knowledge-based. The figure below illustrates that the student outcomes and support systems should be involved with learning and innovation skills.

The skill of learning and facilitated support has to be prepared well together with making learning environment in 21st century. During the latter decades of the 20th century and into the 21st century, society has undergone an accelerating pace of change in economy and technology. Its effects on the workplace, and thus on the demands on the educational system preparing students for the workforce, have been significant in several ways.

C. Between Pedagogical Skill and Adaptive Technology

Recognised as the learner-centred teaching practices, pedagogical skill can be actively engaged to the planning and making decisions related to the practice to help teachers to ensure learning opportunities among the students. Among the knowledge, experience, situation, environment, and learning goals, the pedagogical skills are essential for classroom management (Brown, 2007) with referring to instructional design model which has analysis, design, development, implementation, and evaluation (Koehler & Mishra, 2009). It ensures that learners with different learning styles can be taught and can learn similarly within the same lesson or activity. With regard to the instructional design models, adaptive technology can be also engaged to continue to influence pedagogy on the learning style which has the relevance among instructive strategies. Being personally meaningful into the instructor governed by the correlation with referring to the first phase of the project highlighted that the more students were involved as active participants in their own learning (Huda et al, 2017; Mishra & Koehler, 2007). As a result, the way to conduct in the classroom with adaptive technology can be employed into the classroom management strategies. It can be considered as the reflection to encourage the students’ learning to be active participants in the culture and activities. Moreover, they can also utilise the educational technology in the classroom. In this view, having good pedagogical skills is essential for classroom and behaviour management.

II. METHODOLOGY

The methodology used in this study is an empirical literature review critically on proposing the model framework of understanding the role of MLE as the integration between pedagogical skill and adaptive technology. The strategy and application in the technological tool associated with skills will be constructed from recent reviews on technological strategy and application among the students. The investigation will be conducted using keywords of modern learning environment in terms of pedagogical basis and technological adoption. This derives from searching for peer-reviewed journals and books. After removing duplicates and articles beyond the scope of this study, such articles will be selected for reviews. In particular, employing meta-synthesis will be used to integrate, evaluate and interpret the findings of multiple types of research from recently grounded theory. Those ideas will be combined to identify their common core elements and themes. Then, key elements into interpretations and conceptualizations of the role of MLE by integrating pedagogical skill and adaptive technology will be analysed and synthesized. In particular, this profound discussion at a conceptual level will be transformed into technical requirements and specifications.

III. ANALYSIS AND DISCUSSION

A. Understanding the Role of Modern Learning Environment (MLE) in 21 Century Learning

Since there emerges the advancement of 21 century learning and also the innovations on integration between pedagogical aspect and technological adoption, understanding the role of MLE in the specific way on the conceptual progression to assist students across the learning experiences needs to enhance the empowerment to support their learning. To make effort in assisting the spirit performance in that process, addressing the teacher’s performance in making convince into the pedagogy to maintain the motivational intention emphasise students’ experience in outlining their experience (Rata, 2015). In particular, MLE has been transformed into the virtual, online and remote in today’s interconnected and technology-driven world (Sankey et al, 2010). This aims at supporting the educational element including structures, tools and communities that accommodate the uniqueness to support the positive insights for effective learning. As a result, making the better way in learning environments is supposed to develop widely in today’s educational policy to give inspirational essence for students and educators to attain the knowledge and skills.

B. Attempting to Perform Learning Quality

As an attempt to perform educational outcomes with strongly influencing several ways like online learning integrated from recommending pedagogy and integrating technology in the curriculum, developing the approach for making the rules and example models to control educational practices should be well prepared in schools and places of higher
education. Preparing the educational outcomes with learning quality equipped with the insights involving values and skills to lead to the students’ learning (Ramsden, 2003), the learning environment comprising school, classroom and library is enhanced to support the advocacy of dynamic with modern and educational buildings eco-friendly and technologically advanced (Brown, 2007). Since the rise of the quality to do in the school and educational institution by the deeper underlying relationship between conceptions and design intention for 21st century’s educational systems (Beetham & Sharpe, 2013), this learning model is supposed to establish a coherent approach to expanding intelligence to develop leadership approaches to empower learners in strengthening learning character which supports innovation as the preparation for educational outcome. As a result, fostering more intelligent learners may also be founded research to grow the teacher’s role about learning. It can also build independence and responsibility by monitoring practice to improve the quality of learning.

C. Integrating the Learning with Continuous Process
Considered to drive the learning process, enhancing this stage can be engaged to give the opportunities to enable learners to observe and learn with continuous process. Integrating the learning process is regarded to pursue the element within users, namely learners and teachers (Kayes, 2002). Among the distinctions are concerning to create enjoyable condition (Gültekin, 2005; Shernoff & Csikszentmihalyi, 2009). With this regard, it is responsible for both students and teachers to try conceptualising a good circumstance to underlie learning-teaching performance. Continuous process with lifelong learning skills can be achieved to ensure that appropriate way with the strategic option in building the schools and educational facilities can be achieved through the learning process among children, school-leavers and graduates (McPhail, 2015). MLE with such environments including the delineation between formal and informal learning enables learners to practically and freely deploy flexible and modular furniture. It can also enable them the creation of groupings to dissolve and merge with others to form new groupings. As a fundamentally pedagogical model, the flexible space in learning has to do increasingly with perceiving learning schedules with strengthening continuous process.

D. Making Easy in Getting the Sources
MLE has potency in enhancing the learning source with enabling the learners to access it easily. It can be viewed that technology which is typically a learning common surrounded by a range of wireless and wired technology to offer access the students’ need. Within the flow of the learning with the flexible learning environment, continuously improving community of practice with the technology’s transformational impact can be employed. In addition, the significance of technology on education has been considered to do with online learning implementation, like Big Data approach as learning trends (Anshari, Alas & Guan, 2015; Anshari et al, 2016a), smartphone use on learning assistance (Anshari et al, 2017; Shin et al, 2011), supporting teacher education (Duhaney, 2001) and also for innovative teaching (Huda et al, 2016). In particular, an attempt to establish communication through adopting the Internet and computers is significant to make an effective medium for educational institution ( and those involved among between schools, teachers, students and parents to handle many issues surrounding them such as difficulties on finding address through geographical limitations due to lack of adequate training technologies.

E. Creating Flexibility in Learning
With regard to create flexibility in learning, the strategy implementation becomes one of the important elements to underlie outcomes learning. It has the meaning of the flexibility to enable learning with accessing the responsive way combined with pace, place and delivery mode (Sharma & Kolb, 2010). Set out from accumulating and transferring the subject matter, some components including using technology to provide remote or online study is entirely to do with work-based learning and employer engagement (Lejeune et al, 2009). As a result, creating flexibility here can be initiative on the teaching and learning process with a significant and strong role to show the lesson with the students’ attitudes in their daily lives. To achieve this purpose in the way that the lessons should be transformed amongst the learners, it is necessary, therefore, for the teacher to take responsibility to make students more aware of space and flexibility in learning. Moreover, teachers need to improve the lesson by using different types of teaching methods, technique application and motivational approaches.

IV. CONCLUSION
This paper does elaborate the MLE in conjunction with the modern style of learning process. Some necessary benefits like flexibility, continuous process and getting access easily to sources, it is considered in supporting strengths-based teaching to add the value to the users’ experiences and also create new relevance and connections beyond the school boundary. To assist students across learning environment by pedagogical skills with encouraging higher teaching and learning, making convince into the pedagogy might be necessary a way to promote a range of pedagogical skills continuing integration with technological tools. Maintaining the motivational intention to emphasise students’ experience will lead to the development of learning environment that aligns better instruction in both student and teacher. Moreover by critically exploring the pedagogical and technological basis can be viewed into attempting to perform learning quality, integrating the learning with continuous process, making easy in getting the sources, creating flexibility in learning. As a result, this attempt is supposed to contribute the ideas acquired in certain subjects to become the particular principle for the enhancement of learning in higher education.

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