DEVELOPMENT AND EVALUATION OF AN INDEPENDENT LEARNING MODEL FOR SOCIAL LEARNING PLATFORM

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ABSTRACT

The study aims to develop and evaluate an independent learning model for social learning platform. The quantitative method is used in this study. The data is obtained through the instrument of connectivism theory and Facebook usage. The subjects of this study were 81 students of Two-Years Programme in one of the matriculation colleges in Malaysia. These respondents were selected based on purposive sampling. The statistical analysis involving descriptive statistics and Partial Least Squares-Structural Equation Modeling (PLS-SEM) is the method used in this study. The findings indicated that there were significant structural relationships between connectivism theory and Web 2.0 towards students' achievement. Furthermore, the structural model showed that students' achievement is influenced by the principles of connectivism theory and Facebook as a learning tool. In conclusion, this study had successfully developed and evaluated an independent learning model for social learning platform through PLS-SEM. Indirectly, apart from connectivism theory, Web 2.0 learning tool, that is Facebook, has also contributed to a different perspective on the process of students' learning at matriculation colleges.

PEMBANGUNAN DAN PENILAIAN PEMBELAJARAN KENDIRI BERDASARKAN TEORI *CONNECTIVISM* DAN WEB 2.0

ABSTRAK

Kajian ini bertujuan membangunkan dan menilai model pembelajaran kendiri untuk wadah pembelajaran sosial. Kaedah kuantitatif digunakan dalam kajian ini. Data diperolehi melalui instrumen teori *connectivism* dan penggunaan Facebook. Subjek kajian ini adalah 81 pelajar Program Dua Tahun di sebuah kolej matrikulasi di Malaysia. Responden dipilih berdasarkan persampelan bertujuan. Analisis statistik yang digunakan dalam kajian ini adalah statistik deskriptif dan Kuasa Dua Terkecil Separa-Model Persamaan Struktur (KTS-MPS). Dapatan kajian menunjukkan bahawa terdapat hubungan berstruktur yang signifikan antara teori *connectivism* dan Web 2.0 terhadap pencapaian pelajar. Model berstruktur menunjukkan bahawa pencapaian pelajar dipengaruhi oleh teori *connectivism* dan Facebook sebagai alat pembelajaran. Kesimpulannya, kajian ini telah berjaya membangun dan menilai model pembelajaran kendiri untuk wadah pembelajaran sosial melalui KTS-MPS. Secara tidak langsung, selain daripada teori *connectivism*, Facebook iaitu alat pembelajaran Web 2.0 juga menyumbang kepada perspektif yang berbeza dalam proses pembelajaran pelajar di kolej matrikulasi.

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LIST OF ABBREVIATIONS

SMC	Selangor Matriculation College
MOE	Ministry of Education
COE	Centre Of Excellence
COET	Centre Of Excellence In Teaching
ICT	Information And Communication Technology
IL	Independent Learning
ILE	Independent Learning Environment
SNSS	Social Networking Sites
SDL	Self-Directed Learning
PLES	Personal Learning Environments
MOOCS	Massive Open Online Courses
CMSS	Course Management Systems
VLES	Virtual Learning Environments
DEST	Department Of Education Science And Training
K-S	Kolmogorov-Smirnov Test
S-W	Shapiro-Wilks Test
LVS	Latent Variables
PLS-SEM	Partial Least Squares Structural Equations Modeling
CB-SEM	Covariance-Based Approach Structural Equations Modeling
S-PM	Partial Least Squares Path Modeling
CA	Cronbach's Alpha
CR	Composite Reliability

AVE	Average Variance Extracted
EPRD	Educational Planning And Research Development

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CHAPTER 1

INTRODUCTION

1.1 Introduction

The emergence of Information and Communication Technology (ICT) is providing society significant opportunities as well as challenges. The convenience of communication is afflicted by the concern for the safety of young people as they get involved in this ICT-driven environment. As they hold ICT and Social Networking Sites (SNSs) in specific, engaging with each other across boundary-less environment, these educational settings are not only engaging in strategies to support the use of technology in contemporary teaching and learning (T&L) approaches, but also seeking ways to support young people in getting information and sharing knowledge in the technological era. T&L should not be confined to the enclosed formal classroom environment per se.

With technology advancement and globalisation, the growing profile of social networked learning is not something that can be easily ignored (Siemens & Conole, 2011) in both formal and informal learning situations. Dyrud (2012) suggested that the challenge for educators is to use SNSs as classroom enhancement by harnessing its connectivity.

SNSs are the most popular entities utilised by billions of people to satisfy their needs to interact, socialise, and participate in common interest groups (Tinmaz, 2012). Facebook with its current active users of 1550 million as of January 2016 (Statista.com, 2016), has been used by college and university students as a platform for educational purposes. Facebook is also known as one of the most prominent SNSs that has potentials for enhancing T&L (Cam & Isbulan, 2012). McCarthy (2012) revealed that students considered Facebook as a valuable learning resource that improved academic connections, promoted academic critiques, discussions, and networking.

Facebook provides a multitude of opportunities in various fields of education, entertainment, business, as well as employment to choose from. The advancement of technological gadgets excite youngsters to explore anything they desire without any prompting. Dweck, Walton, and Cohen (2014) asserted that students want to learn and become more interested in knowledge for their futures rather than in their performance inside the classroom. Students in higher education learning environments will prepare for the future when they become self-directed learners and more motivated by learning than performance (Fein, 2014).

In the face of new generations of learners with ever-broadening demands on their learning, faculty wishes to provide their students with tools that will serve them in a world driven by global competition that invoke structural change in their pedagogy (Fein, 2014; Hyland & Kranzow, 2011). In parallel, the current situation has triggered educational scientists to search for new learning theories (McWilliam & Haukka, 2008) which aim to explain the dynamics of recent T&L processes.

One form of a new learning theory other than the commonly recognised ones as in behaviourism, cognitivism, and constructivism is connectivism. Connectivism theory emphasises on learning networks and their established connections among members. It seems that SNSs structures could provide a new platform for comprehending and implementing this learning theory. In order to take advantage of new premises regarding connectivism, Facebook is the most well-known SNS that could certainly recommend a field of implementation where billions of people attached to each other in its highly networked body (Tinmaz, 2012).

Connectivism theory has demonstrated that on a connected network, learners increase their capacities, performances, and levels of knowledge while creating and reforming the information. In that sense, SNSs comprising already linked members in their innate technologies have a superior potential to enrich learners' current knowledge, skills, and abilities. Connectivism could assist different researchers to explain the underlying reasons of change in the learners' current situation as a result of their interaction on SNSs (Tinmaz, 2012). Connectivism also enlightened that SNSs are platforms which could improve instructional processes for both learners and educators.

Connectivism is a relatively new theory of learning where scholars are conducting research in order to realise its implications to the field of education. SNSs are also comparatively new tools as instructional platforms. Therefore, this study was undertaken to develop and evaluate an IL model by examining these two innovative concepts that require more elaboration for comprehending their effects for educational processes.

1.2 Background of the Study

The Internet has evolved from static web pages to a format of user interaction and co-creation of digital content, termed as Web 2.0. Previous researchers have shown that the collaborative affordances and utilisation of Web 2.0 technologies for classroom utility has a high potential to impact the learner's experiences and their performances (Bernsteiner, Ostermann, & Staudinger, 2008; Crook, Cummings, Fisher, Graber, Harrison, & Lewin, 2008; Drexler, Baralt, & Dawson, 2008; McLoughlin & Lee, 2010). For example, the emergence of social network platforms such as Facebook, Twitter, Instagram, and many others are altering the way learners communicate, collaborate, access, learn, and seek new information (Campbell, Wang, Hsu, Duffy, & Wolf, 2010; Drexler et al., 2008; Greenhow, Robelia, & Hughes, 2009).

Moreover, the new generation of learners known as 'digital native' are people who were born in the 80's when daily meetings were most digitalised (Yung, 2017) are not only comfortable but also competent in using technological tools for their learning purposes (Zakaria, Watson, & Edwards, 2010). Besides that, these

generations are also using Web 2.0 to communicate effectively and interactively to enhance their learning capabilities (Hossain & Aydin, 2011).

With the intensified use of Web 2.0 in a classroom context, it is clearly observed that learners can play an active and productive role in their learning environment (Crook et al., 2008; Glud, Buus, Ryberg, Georgsen, & Davidsen, 2010; Ryberg, Dirckinck-Holmfeld, & Jones, 2010a). Many social-based software tools provide greater support to the learners by allowing enhanced autonomy and dynamic engagement in learning communities. As such, ideas are exchanged and knowledge is created since students assume more active roles than before (Ashton & Newman, 2006; Lee, McLoughlin, & Chan, 2008). According to Dron (2007), there is a growing need to support and motivate learners to be in control over the entire learning process. In support, McLoughlin and Lee (2010) also stated that the learning experiences that are made possible by social-based software tools are active, process based, anchored in, and driven by learners' interests, and therefore have the potential to cultivate self-regulated, independent learning (IL).

Candy (1991) defined IL as a method and educational philosophy in which learners acquire knowledge by themselves and develop the ability to undertake enquiry and critical reflection. Learner independence is also known by a number of other terms such as learner autonomy, IL, lifelong learning, learning to learn, and thinking skills (Sinclair, 2001).

Self-regulated learning (SRL) however goes deeper. It refers to the ability of a learner to prepare for his/her own learning, take the necessary steps to learn, manage

and evaluate the learning, and provide self-feedback and judgment, while simultaneously maintaining a high level of motivation (Biggs, 1987; Zimmerman & Schunk, 1989; Simons, 1992). A self-regulated learner is able to execute learning activities that lead to knowledge creation, comprehension and higher order learning (Stubbé & Theunissen, 2008) by using processes such as monitoring, reflection, testing, questioning, and self-evaluation. SRL can also be defined as 'independent, highly effective approaches to learning that are associated with success in and beyond school (Meyer, Haywood, Sachdev, & Faraday, 2008).

It has also been argued that the advent of online learning, which encourages social interaction and collaboration, has challenged the concept of independence in adult learning and encouraged socially mediated learning (Dabbagh, 2007). However, Dunlap and Lowenthal (2011) have insisted that self-directed learning (SDL) is a quality of successful adult learning.

Somewhat, it is agreed that Dunlap and Lowenthal (2011) mentioned that if the individual had been interacting actively and positively via the social media to the point of reflecting critically, this collaboration had in-grown him into a matured thinker. He is, actually manages his learning in his own style at his own pace, independently.

It appears essential; however that effort is needed to ensure appropriate pedagogical considerations including not simply the basic curriculum but the significant changes to pedagogy, philosophy, and consideration for individualising learning objectives if the SDL is to be realised in any context (Du, 2012). Pedagogical

changes will therefore be crucial in all types of educational content delivery methods in order to maximise the potential for self-directed learners and graduates (Fein, 2014).

Several researchers in the field of SDL interpret learner autonomy as an important component of SDL (Ponton, Derrick, & Carr, 2005; Bouchard, 2009; Boucouvalas, 2009). Bouchard (2009) and Boucouvalas (2009) highlighted that some of the determinants to SDL include their learning environment, context, and the connections that people build during their learning. As a result, new structures and environments are developed to facilitate autonomous learning among people.

However, a key question raised by Kop and Bouchard (2011) that is how can we be sure that people are engaged in self-learning in an effective way? As mentioned earlier, the internet offers multitudes of fields that can easily sway one's focus from learning to pure leisure. Learning is not a merely individual knowledge digesting process but it needs interaction (Mattar, 2010). Learning occurs as a result of utilising outside sources (e.g. other person, online databases, and online books) and establishing connections between individual and the outside sources. It means that interaction plays an essential role to build connections. Connectivism approach that includes diversity, autonomy, interactivity, and openness will understand the dream of centralising the learner in the juxtaposition of all other elements. Therefore, Kop and Hill (2008) emphasised that the learners will gain independence of deciding the content, media, message, and all other elements they want to utilise.

Downes and Siemens (2009) have developed a theory for the digital age called connectivism, which denounce elements like behaviourism, cognitivism, and constructivism. This learning theory has created new opportunities for people to learn and share information across the World Wide Web.

This study applied this theoretical model based on Downes (2010) four properties of connectivism which are: (1) diversity; (2) autonomy; (3) interactivity; and (4) openness. The key theoretical assumptions are: being a member of an online network, communicating with others and filtering information, and ideas that others provide will lead to knowledge creation and learning advancement. Hence, connectivism advocates the active engagement of people with resources in communication with others, rather than the transfer of knowledge from educator to learner (Kop, 2011). Moreover, they promote a learning organisation whereby there is not a body of knowledge to be transferred from educator to learner, and where learning does not take place in a single environment. Instead, knowledge is distributed across the web and a person engaged with it creates learning.

Baggaley (2012) also reviewed connectivism literature and concludes that connectivism is an appropriate theory for portraying the recent need for re-evaluating the asynchronous instructional methods. Basically, connectivism suggests that teachers and students who share an online social learning platform should interact more directly and more frequently.