A Proposed Framework of Academic Staff Up-Take in Integrating E-Learning in the Education Delivery

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Abstract

The environment in which higher education institutions operate changed from solely a traditional classroom environment to a mixed mode environment with e-learning taking the central attention. Profound changes and development in technology has made higher education institutions to be very competitive and seeking to apply new technologies in the delivery of education. In order to respond to changing needs and expectations, integration and successful uptake of e-learning in the educational delivery process has become essential. This research will discuss about behavioral intention among Malaysia academic staff in up taking and integrating e-learning in their education delivery. Factors such perceived usefulness, perceived ease of use, perceived behavioral control, perceived enjoyment and also computer anxiety will be examined. This paper proposes a framework that links these variables and examines the moderating effect of computer anxiety towards behavioral intention in up-take and integration of e-learning. In order to contextualize this study, the paper offers supporting literature for the proposed framework. The paper is also providing direction for future empirical investigation to improve uptake in integrating e-learning in the education delivery across academic staff in Malaysia.
Keywords: E-Learning, Behavioral Intention, Perceived Ease of Use, Perceived Behavioral Control, Perceived Enjoyment

1. Introduction

It is common for the educators to believe in their traditional teaching and learning practices and to acknowledge that this is the best approach of an education delivery (James, 1997). However, educators are also forced to accept the notion that fueling technology advancements has made the higher education institutions to face competitive pressures in offering up-to-date education delivery to the learners. Aside, Chen and Hsiang (2007)

highlighted that achievement of learning outcomes through traditional teaching and learning has become far from ideal. This claim in turn demonstrates that it is important for higher education institutions to keep abreast of changing technological advancements and subsequently, offer an ideal teaching and learning environment to learners (Than & Werner, 2005). This has call for a revolutionary change to the traditional teaching and learning processes and practices (Wang et al., 2007; Tao et al., 2006) to improve the educational delivery. It is, therefore important for the higher education institutions to implement advance teaching and learning systems to facilitate flow of knowledge through a better educational delivery to the learners (Lie & Wang, 2009). One way to stay parallel to changes in teaching and learning practices due to technological advancements and to provide an improved educational delivery would be to offer an e-learning experience to the learners in spite of large amount of resources that is crucial in delivery of such systems (Ling & Moi, 2007). Hung and Cho (2008) indicated that there are many technological advancements fueling the environment which will be useful to identify and offer new learning experience to the learners. Several researchers (e.g. Middlehurst, 2003; Fisser, 2001; Bates, 2000; Wilks & Yetton, 1997) have discussed the importance of strategic approach in using e-learning in the higher education institutions. Therefore, it is important for the higher education institutions to design some appropriate strategies to integrate and encourage uptake of e-learning in the education delivery (van der Ven, 2003).

1.1 Problem Statement

Generally, an e-learning system consist of three main elements: i. technology and infrastructure, ii. educators, and iii. learners, with educators being perceived as the most important element in ensuring success of an e-learning implementation and delivery, hence, educators' attitude and their acceptance of the system become an important agenda to higher education institutions (Hovermill, 2003; Keller et al., 2003; Bonk et al., 2002, Swan et al., 200). Therefore, the educator's engagement cannot be looked very lightly as their commitment is fundamental to success and sustainability of e-learning (Marimo, Mashingaidze & Nyoni, 2013). It is very difficult to neglect the fact that in most cases, implementation of new ways, processes and technology will result at resistance and skepticism although it is proven that e-learning will enhance the education delivery in the higher education institutions (Proffitt, 2008; Bates & Poole, 2003). Against the change itself, this resistance and skepticism can be attributed to the fear of losing prevailing traditions in education delivery (Tubaishat, & Lansari, 2010, 2011; Cooper, 2009; De Villiers 2005; Bates & Poole, 2003) because of difficulties in accommodating the emphasis of e-learning and the resulting change (Sarwar and Hosseinian-Far, 2016). This fear led the educators to carry over predominant styles of the traditional classroom to the new teaching and learning environment rather than developing new pedagogies that would improve their education delivery (Bates & Poole, 2003). Several researchers such as Tubaishat, and Lansari (2011), Aydin and Tasci (2005), and Borotis and Poulymenakou (2004) cautioned that despite of large investment into e-learning implementation, disregarding the acceptance and also adoption of this platform in the education delivery in the higher education institutions will not only make the institution to be uncompetitive but also will hinder achievement of institutional goals in providing cutting edge education delivery in line with changing dynamics in the teaching and learning agenda. Therefore, it is essential to understand factors that influence the educators' acceptance, uptake and integration of e-learning, who might not be otherwise be interested (Meuter et al., 2005; Wang, Wang, Lin, & Tang, 2003; Curran et al., 2003;

Dabholkar & Bagozzi, 2002) including their perceptions and behavioral intentions (Faheeg, 2011; Proffitt, 2008; Aydin and Tasci, 2005; Borotis & Poulymenakou, 2004; Govindsamy, 2002; Surry & Land, 2000). While Technology Acceptance Model assumes that intention to use is directly linked to the actual usage behavior (Giesbers, Rienties, Tempelaar, & Gijselaers, 2013; Pynoo et al., 2011), Bagozzi (2007) argued that such direct relationship may not exist considering that the e-learning acceptance between different groups may vary (Sumak et al, 2011). Failing to address these factors may result at "productivity paradox", a technology that not willingly accepted and used that may result at a very low usage of the system (Sichel, 1997). As Bandura (1997) postulated, academic staff are part of an interactive social and education system as they are the one that responsible in shaping it. How, there is gap that exists between technology affordances and educators' intentions of use (Kozma, 2003) indicating that there are no clear conditions leading educators to adopt technology in teaching and learning (Thomas, 2001). Since role of educators extends beyond uptake and content development and delivery in e-learning but also to engage into new and various pedagogical methods in education delivery (Marimo, Mashingaidze & Nyoni, 2013; Proffitt 2008; Govindsamy, 2002) and encourage the learners to accept an e-learning environment (Selim 2005; Ndubisi, 2004; Ndubisi & Chukwunonso, 2004; Abouchedid & Eid, 2004; Salmon, 2000), it is crucial that their perceptions, anxieties and intentions are carefully addressed.

1.2 Research Objective

Therefore, since e-learning plays an important role in positioning higher learning institutions in a competitive environment, the aim of this study is to examine the behavioral intention of academic staff from Malaysia in uptaking and integrating e-learning in their education delivery. This is because behavioral intention found to be an ultimate destination that brings to the uptake of technology and technological applications (Lin & Lu, 2000). The research is also envisaged to provide insights into improving uptake in integrating e-learning in the education delivery across academic staff from Malaysia.

2. Literature Review
2.1 Higher Education Institutions and E-Learning

Technological changes in the last decade has posed many challenges to the higher education institutions to adopt e-learning in their education delivery. It has caused enormous changes in regards to the education delivery in higher education institutions. In the effort of blending technology with pedagogy, content and knowledge, Mishra and Koehler (2008) highlighted that it is important to explore how the teaching and learning may change as a result of technology adoption. While early research provided evidence that educators are generally unwilling to use technology in education delivery due to lack of confidence in adopting technology in teaching and learning (e.g. Rosen & Weil, 1995), Porter and Donthu (2006) clarified that it is the personal experience, personality and cognitive factors that form the belief about the educators' ability to perform expected education delivery transformations. Apart from that, the perception and personal factors are also found to influence them to move away from traditional classroom environment to technology facilitated environment (Robertson et al., 1996). However, higher learning institutions are continuing their focus for successful adoption of e-learning in the education delivery by occupying an evolutionary approach instead of a revolutionary approach, expecting an incremental change (Collis & van der Wende, 2002). The institutionalization of e-learning in the higher education institutions has become an integral part of and a core process in the educational delivery (Collis &

Moonen, 2001). Educational institutions which are more resistant to change in adopting e-learning environment (Concannon et al., 2005; Duke, 2002) can be investigated through various factors such as attitude towards computer (Zemsky, 2007) computer anxiety (Teo et al., 2007), educator attitude and control over technology (Webster & Hackley, 1997; Dillon & Morris, 1996), familiarity to traditional teaching and learning environments (Singleton et al., 2004), perceived behavioral control (Karaali, Gumussoy, & Calisir, 2010; Macharia & Nyakwende, 2010), perceived ease of use and perceived usefulness (Tung & Chang, 2008; Teo et al., 2007; Ong & Lai, 2006; Davis, 1993) which ultimately influences their behavioral intention.

2.2. Perceived Usefulness

A key driver in understanding behavioural intention is perceived usefulness of a given technology. The theoretical perspective of Technology Acceptance Model indicates that perceived usefulness and attitudes towards technology predicts intention to act, hence their behavioural intention (Sun et al., 2008). According to Davis (1989), "the degree to which a person believes that using a particular system would enhance his or her performance" explains perceived usefulness construct. A large stream of research has investigated perceived usefulness in accepting and adopting new technology (e.g. Ong & Lai, 2006; Cheong and Park, 2005; Legris et al. 2003). Davis et al (1989) argued that the decision of a user to use or not to use a technology is subject to the perceived usefulness of the technology in providing them with greater work control, efficiency and effectiveness of a task completion as well as ability to improve the work performance. This claim correlates to the study by Teo (2011) that perceived usefulness of a technology influences the behavioural intentions of the users. This is more evident in the research by Teo (2010) which found that perceived usefulness was the key determinant that influences attitude towards computer use. Apart from that, perceived usefulness found to be to be the most significant factor of behavioural intention to adopt technology across studies (Horst et. al. 2007; Venkatesh et. al. 2003).

2.3. Perceived Ease of Use

Davis (1989) defined perceived ease of use as the belief of the users that use of certain technology will be effortless. It may include navigational flexibility, customizability, ability to understand the technology, contents development, online communication and many other e-learning usage-relevant factors. This will be the main consideration among users for which they prefer effortless or at least expect a very minimum effort in using a technology and this claim remain valid from behavioural decision-making point of view (Venkatesh, 2000; Igbaria and Iivari, 1995). Further support for this claim was provided by Venkatesh & Morris (2000) pointing out that efforts of learning a technology conforms to its perceived ease of use among users. Literature review from previous studies highlighted that perceived ease of use has been seen as an important factor which influences behavioural intention towards technology such as e-leaning (Amin, 2009; Wang et al., 2003; Igbaria, Livari & Maragahh, 1995) and that it may lead individuals to accept a new technology (Elliott & Fu, 2008). This is true according to Davis and Arbor (1989) that users may perceive a technology to be successful in its usage and may also regard the same as being difficult to use when efforts investment outweigh the benefits attained in achieving the intended productivity and performance as a result of technology usage. This can be attributed to difficulty and also risk in learning a new thing which may affect the perceived ease of use, hence the behavioural intention (Porter & Donthu, 2006). Nevertheless, empirical evidences further clarified that gender tends to have a differing

influence towards perceived ease of use of a technology and computer skills. While men generally driven by attitude toward a new technology and possesses lesser computer anxiety, women are influenced by their perceived behavioural control with greater level of computer anxiety (Venkatesh et al., 2000; Harrison & Rainer, 1992). In spite of gender differences, Kumar and Kumar (2003) concluded that perceived ease of use of learning management systems will improve their intention to use, hence enable them to be more productive, efficient and accurate.

2.4. Perceived Behavioral Control

According to Brouwer et al (2009), ability and beliefs of a person to exhibit specific behaviours explain perceived behavioural control construct. This definition was further complemented by indicating that it includes level of confidence in exhibiting these specific behaviours (Yzer, 2007; Francis et al., 2004) as well as perceived ease or difficulty in performing these specific behaviours (Ajzen, 2005) where the behavioural control and confidence are highly correlated (Armitage, 2005). Generally, perceived behavioural control consist of two specific dimensions: perceived capacity and perceived autonomy, however, these two dimensions tend to converge into perceived behavioural control construct (Yzer, 2007). In this vein, Mathieson (1991) and Ajzen & Driver (1992) concluded that perceived behavioural control influences the intention to perform target behaviours and ultimately the behavioural intention. Situational factors are expected to influence the perceived behavioural control affecting educators' confidence in performing their actual behaviours which includes their confidence about e-learning as well as their anxiety in using technology aids such as computers. Hence, perceived behavioural control is expected to be affected by skills, resources and also opportunities in performing the target behaviours (Azjen, 1991).

2.5. Perceived Enjoyment

Perceived enjoyment was defined as "the extent to which the activity of using the computer is perceived to be enjoyable in its own right, apart from any performance consequences that may be anticipated" (Davis & Wiedenbeck, 2001). Several theoretical perspectives indicate that enjoyment could be the fundamental reason for intention to use technology (Griffin et al., 2015; Sherry, 2004) and this perspective were proven in the use of websites (Van der Heijden, 2003), social networking sites (Chuang et al., 2017), and mass media (Ledbetter et al., 2016) among others. Perceived enjoyment which is an extrinsic motivational factor has an important role in explaining users' behavioural intention of a web-based learning (Saade et al., 2008; van der Heijden, 2004; Davis et al., 1992). This notion was proven through an empirical investigation by Wang et al (2010) who reported that perceived enjoyment results at higher level of behavioural intention in technology adoption. This is because individuals who enjoy use of a new technology tend to overestimate the perceived usefulness as a result of enjoyment and it overcomes the difficulty of the same technology (Venkatesh, Speier, & Morris, 2002). This indicates that when an e-learning is perceived to be more enjoying in teaching and learning, one can expect the traditional classroom to be not fulfilling when there is an absence of technology in the teaching and learning process. Ultimately, this leads to higher degree of intention to adopt e-learning in the education delivery. Hence, it is expected that perceived usefulness when complemented with perceived enjoyment will increase intention to adopt a technology (Davis & Wiedenbeck, 2001) and directly affects behavioural intention (Lu & Xu, 2006).

2.6. Computer Anxiety

In the move towards a competitive learning environment, use of computer has become unavoidable. This is particularly true in the higher education institution education setting where education delivery is moving away from a traditional classroom setting to a virtual learning environment. Therefore, it is essential for the educators to actively use technology such as computers in an e-learning environment for the delivery of education. Educators perceives that use of computer in education delivery will enable an effective and efficient discharge of their teaching and learning process (Delcourt & Kinzie, 1993). However, the intention to use computer in education delivery is not widespread due to the educators' lack of confidence about ability to use or it is merely a scenario where they are anxious, not interested and uncomfortable with use of computer in course and content delivery resulting at resistance towards use of e-learning system (Fuller et al., 2006). This leads to a situation known as computer anxiety among educators. According to Venkatesh (2000), computer anxiety refers to "the degree of an individual's apprehension, or even fear, when she/he is faced with the possibility of using computers" (p. 349) and it is found to be one of the main element that creates avoidance and limits technology acceptance among educators (Bozionelos, 2001; Yang et al., 1999; Keeler & Anson, 1995; Todman and Monaghan, 1994). Venkatesh (2000) concur with this claim and further supports that behavioural intention in accepting new technology often does not realize due to strong computer anxiety among the users of the new technology. In spite of similar interest towards computer between male and female (Badagliacco, 1990), a demographic perspective resulted at some inconclusive findings in the computer anxiety research. Durndell and Thompson (1997) and Whitely (1997) reported that a negativity towards computer is more prevalent amount female in comparison to male. Such negativity found to result at a greater level of computer anxiety among female group (McIlroy, Bunting, Tierney, and Gordon, 2001). In contradiction to this finding, Loyd, Loyd, and Gressard (1987) found an opposite observation that female has less computer anxiety than male since female found to enjoy computer experience more than the male. To add to the complexity in the area of computer anxiety, Rosen, Sears, and Weil (1987) reported that there is no relationship between gender and computer anxiety, instead related to computer attitudes. However, perceived usefulness and perceived ease of use of the technology (i.e. computer) should be able to foster confidence among the users, creating a positive attitude and influence their behavioural intention (Howard, 1986; Loyd & Gressard, 1984).

2.7. Behavioral Intention

According to Theory of Reasoned Action, behavioural intention which is an immediate antecedent of behaviour refers to readiness and estimation of how much of an individual would perform a particular behaviour which is also known as cognitive representation of the individual (Fishbein & Ajzen, 1975). It captures factors that influence a desired behaviour (Ajzen, 1991). However, Ajzen and Fishbein (1980) cautioned that performing desires behaviour involves an individual's consideration about implications that will emerge as a result of engaging in particular behaviour. If an individual perceives that engaging into this specific behaviour will result at negative consequences, it is very likely that the individual will hold a negative perception towards the behaviour (Mykytn & Harrison, 2003). According to Alshaikhi, Abdullah and Bilgrami (2017), higher desire to use technology is linked to the behavioral intention. Past studies show that there is association between behavioural

intention in using technology and perceived usefulness (Davis, 1989), experience (Jacques, Garger, Brown, & Deale, 2009) and perceived enjoyment (Wang, Lin, & Liao, 2010).

Base on this discussion, the following propositions are formulated:

Proposition 1: There is significant relationship between perceived usefulness and behavioral intention of uptaking and integrating e-learning in teaching and learning

Proposition 2: There is significant relationship between perceived ease of use and behavioral of uptaking and integrating e-learning in teaching and learning.

Proposition 3: There is significant relationship between perceived behavioral control and behavioral intention of uptaking and integrating e-learning in teaching and learning.

Proposition 4: There is significant relationship between perceived enjoyment and behavioral intention of uptaking and integrating e-learning in teaching and learning.

Proposition5a: There is moderating effect of computer anxiety on the relationship between the perceived usefulness and behavioral intention of uptaking and integrating e-learning in teaching and learning.

Proposition5b: There is moderating effect of computer anxiety on the relationship between the perceived ease of use and behavioral intention of uptaking and integrating e-learning in teaching and learning.

Proposition5c: There is moderating effect of computer anxiety on the relationship between the perceived behavioral control and behavioral intention of uptaking and integrating e-learning in teaching and learning.

Proposition5d: There is moderating effect of computer anxiety on the relationship between the perceived enjoyment and behavioral intention of uptaking and integrating e-learning in teaching and learning.

Drawing on this discussion, the following conceptual framework as illustrated in Figure 1 is proposed. It depicts a significant relationship between perceived usefulness, perceived ease of use, perceived behavioral control, perceived enjoyment and behavioral intention. The conceptual framework also posits the moderating effect of computer anxiety between perceived usefulness, perceived ease of use, perceived behavioral control, perceived enjoyment and behavioral intention.
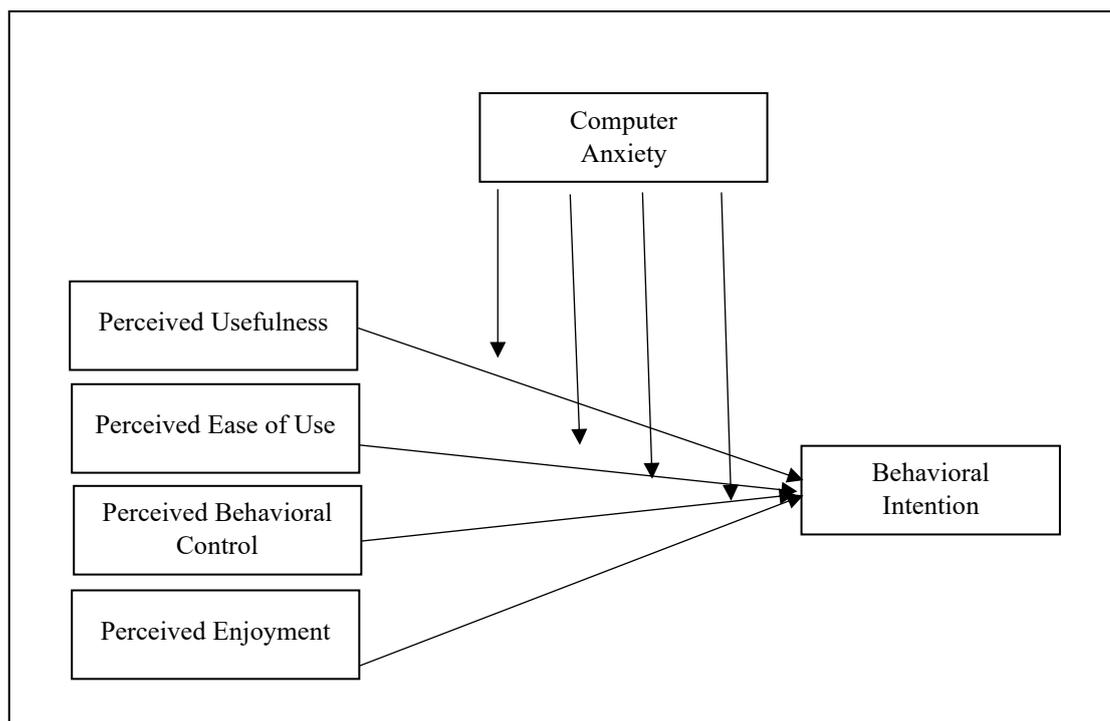
Figure 1: Conceptual Framework

3.   Conclusion

There are many studies done in view of e-learning, however, most of the literatures are narrative description of what people have done (Nicholus, 2003). However, e-learning remain relevant and important in the field of education as it has changed from being a trend to a necessity (Alshaikhi, Abdullah and Bilgrami, 2017). Hence, ability to demonstrate e-learning based education delivery in the higher learning institution has become imperious to be parallel with booming virtual education demand (Hosie, Schibeci, & Backhaus, 2005; Oliver, 2005). In view of that, this paper has proposed an e-learning educational delivery framework which is important and also a timely phenomenon. An important contribution of the model is that it has drawn insights into perceptional factors that affects behavioural intention among academics. Furthermore, the framework also evaluates the influence of computer anxiety in moderating the relationship between several perception factors and also behavioural intention in uptaking and integrating e-learning in the education delivery. Contradicting and inconclusive findings about influence demographical factors such as gender (e.g. Loyd, Loyd, and Gressard, 1987; Durndell and Thompson, 1997; Whitely 1997; McIlroy, Bunting, Tierney, and Gordon, 2001) on technology adoption in education delivery continues the debate and therefore, warrants further research to clarify the issue. Obviously, it is difficult to demarcate exclusive factors that can influence perceptions about uptake and integration of e-learning within higher learning institutions. However, it is envisaged that this model will add to the existing body of knowledge by validating the proposed theoretical framework, contributing new or enhances existing knowledge domain in the area of e-learning. Although this paper suffers from the obvious limitation of lacking empirical investigation, it does provide a theoretical rationale for the argument that perceptional factors are important determinants of behavioural intention and that this relationship possibly can be influenced by the computer anxiety especially in the context of higher learning institution. Perhaps the most important

direction for future research is further extension and validation of this framework with an empirical investigation.

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