CONCEPTUAL MODEL OF COLLABORATIVE E-LEARNING ACCEPTANCE

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ABSTRAK

Abstract: Collaborative e-learning (CE) is very prominent nowadays. CE combination can be a tough development as it requires large technological resources. CE can get reasonable advantages and growth performances, but its high disappointment degree is concerning. This study investigated the student populace’s acceptance of the CE by wiki technology through the Unified Theory of Acceptance and Use of Technology (UTAUT) model in order to examine the effects of major factors on intention to use the wiki to learn. From the review of previous papers, the study has identified the extra factors that should be added in proposed conceptual model namely performance expectancy, effort expectancy, social influence, e-collaboration and intention to use for collaborative eLearning.

KATA KUNCI: Collaborative e-learning (CE); model The Unified Theory of Acceptance and Use of Technology (UTAUT)

1. INTRODUCTION

As of late, e-learning has turned out to be extremely renowned. The incorporation of data innovation in educational programs makes considerably more viable learning condition when contrasted with customary learning. The learning environment also implemented the use of up-to-date systems and educational technologies. The development of technologies in education is growing rapidly and it would give powerful impacts towards teaching, learning, and education itself (Cheng et al., 2014). One of the most powerful tools for professional learning is CE (Summers et al., 1995). It is where understudies are required to work in gatherings of at least two to look for comprehension, arrangements or manufacture an item. It does not necessarily involve teacher’s presentation or explication, but it focuses more on student’s exploration of the content; hence, CE activities vary widely (Mohammadi, 2015). CE has many benefits and advantages and it is applied in many contexts such as universities, organizations, and industry. Undoubtedly, CE is mainly utilized by the higher education field. Several studies have been conducted in this context, for example, a study on activity of group assignment in virtual setting (Doyle et al., 2016), study on the tools and platform used for performing CE (P. Lin et al., 2013), (Esterhuyse & Scholtz, 2016), (Khechine et al., 2014), (Dascalu et al., 2015) attitudes in interaction that occur in CE platform (P. Lin et al., 2013), student engagement satisfaction (Al-rahimi et al., 2013), (Ahmad et al., n.d.), (Burke, 2011), experience and perception of learner using CE (Popovici & Mironov, 2015), (Teo & Zhou, 2014), (DeWitt et al., 2014), (Hsu, 2012), (Punnoose, 2012), comparison of impact using CE (Ismail et al., 2010), and evaluating performance using CE (Khalil & Ebner, 2013), (Shu & Chuang, 2011), (Gielen & Wever, 2015) and (Fidalgo-blanco et al., 2015).
This paper reports a work-in-progress research project that is examining how CE is perceived and used by both students and academics in the Malaysian higher education context. The mixed reactions, there is no doubt that collaborative eLearning such as wiki offers myriad of benefits, particularly in enhancing communication, collaboration and sharing among the users. There are a great potential and enthusiasm in utilizing these tools, yet very few studies have been conducted in the academic area regarding students’ intention to use collaborative eLearning, social media or Web 2.0 technologies during the learning and/or teaching process and little is known about the user experience, intentions, perceptions and acceptance of these technologies by students and academics (V. Balakrishnan, 2017), (A, 2015), (See et al., 2013), (Aifan, 2015) but much of this work has focused on quantitative research with general of technologies with an emphasis mainly on student’s perception and acceptance and not specific which technologies are able and suite with CE. (See et al., 2013) developed the conceptual version which proposed draws from the community of exercise (cop) because of the building blocks of the digital learning network for better educational institutions. A significant outcome could be the development of a design framework for enforcing social media as supporting equipment for pupil engagement and teaching and getting to know of informatics applications in better schooling institutions in Malaysia. Confined examination required been keeping tabs toward those lecturers’ disposition, support or refusal over coordinating Online networking under their publications. But, the recognized adequacy of the rigging and pupil outcomes to the considering must a chance to be investigated profoundly. (Shittu et al., 2011).

Investigating students' state of mind furthermore expectation to utilize social programming on higher establishment about taking in in Malaysia. The discoveries of the considered over uncovered that every last one of an autonomous variable of the examine variable (perceived usefulness, subjective norm, and recognized simplicity of use) predict the disposition about scholars at social product selection. Similarly, disposition might have been discovered will be the stronger predictor about students” purposeful to utilize community software, also resolute suitability might have been found should make the stronger predictor for students” state of mind should SNS. Exploring employee’s recognition on the require should coordinate the utilization from claiming social product to guidelines conveyance purposes may be a basic investigation on conduct, looking at for demographic data, for example, learner age, gender, and other variables majority of the data such as learner academic execution (CGP) and the impact for hour for utilization of social product on learner general execution. Students no longer use the web to obtain information but instead create information and share it with others. They are seen to use web 2.0 applications such as wikis, social networking, social bookmarking and blogs on a regular basis (Abraham & Junglas, 2011).

The review showed that majority of past research focused on investigating the factors affecting the intention to use of collaborative Learning (Popovici & Mironov, 2015), (Ngampornchai & Adams, 2016), (Sadaf et al., 2012), (Abrami, 2010). The best of our knowledge this is the first study on intention to use Wiki in CE. Yet, there is few study conducted on CE phenomenon. Due to this, CE especially Wiki needs to be deeply reviewed. It is important to discover factors affecting students” intention to use latest CE technology, especially Wiki. In this manner, Unified Theory of Acceptance and Use of Technology (UTAUT) is utilized to dissect the variables influencing understudies' goal to take an interest in CE using Wiki apparatus is chosen for this investigation. This study is the first in Malaysia since the previous study almost done in Africa (Cheung & Vogel, 2013a), Taiwan (Buchanan et al., 2013), German (Dascalu et al., 2015), Turkish (Punnoose, 2012), China (Lu & Lee, 2011).
2. LITERATURE REVIEW AND HYPOTHESIS

It is most significant to measure the components that affect understudies’ conduct and goal to take part in CE. In fact, factors that influence students’ behavior should be made into acceptance technology theory. This is approved and supported by several studies (Cheng et al., 2014). Basically, previous researchers claimed that there are six models that are suitable to be used to investigate e-learning acceptance namely Technology Acceptance Model (TAM) (Newbury, 2016), Theory of Planned Behavior (Zhu et al., 2015), Social Cognitive Theory (Cheung & Vogel, 2013a), Diffusion of Innovation Theory (Li et al., 2014), Decomposed Theory of Planned Behavior (Obadi et al., 2010) and Unified Theory of Acceptance and Use of Technology (UTAUT) (Stantchev et al., 2015). Moreover, previous research mainly focused on the overall CE concept such as comparing student’s behavior (Popovici & Mironov, 2015), positive elements of use (Ngampornchai & Adams, 2016), the study on experience differences (Sadaf et al., 2012) and continuance intention for CE (Abrami, 2010). Moreover, new factors have been added or stretched out to the UTAUT demonstrate by each examination keeping in mind the end goal to realize client acknowledgment of CE. Many studies have proposed collaborative learning systems that use platforms such as blogs (Alzahrani & Newbury, 2016) and social networking sites (Osman & Chung, 2011) and (Laal et al., 2012). To achieve efficient collaborative learning, it is important to consider learners’ specific needs. A previous study found that an online collaborative platform needs to provide users not only with technical assistance but also interact with other users (Vivian et al., 2013).

There are many aspects of technology acceptance in e-learning that have been studied by various researchers. For example technology acceptance model and e-learning (Punnoose, 2012), the perceptions, acceptance, usage, and access to social media (See et al., 2013), determined the student readiness for using social media for learning (Tajudeen et al., 2015), to examine behavior intention to use Web 2.0 technologies for learning (Usoro, Abel; Echeng, 2015), Factors Influencing the Use of Social Media in Adult Learning Experience (Teo, 2011), students’ attitudes towards using social media to support their learning (Toh, 2013), (Li et al., 2014), online empirical collaborative learning (Li et al., 2014), and the intention to adopt mobile learning (Obadi et al., 2010). Currently, there are several ongoing types of research done in University Technology Malaysia for collaborative learning. (Mathews et al., 2017) used construct self-efficacy, technical support, administrative support, infrastructure, system interactivity, budgeting and accountability and organizational culture, PSU, PEOU, IU, and Actual social software usage in learning to establish a model for adopting social networked learning in higher institutions of learning in developing countries of Africa (Cheung & Vogel, 2013b), Taiwan (Buchanan et al., 2013), German (Dascalu et al., 2015), Turkish (Punnoose, 2012), China (Lu & Lee, 2011). It’s showed that Malaysia also need to carry out research to determine the influence of factors towards the adoption of new learning media in education and it is important and needed to explore the intention to use Wikis in CE in Malaysia. Collaborative e-learning tools are also known as platforms which are the interacting tools should assist students and lecturer in formal and informal ways [54]. Recently, these tools have emerged as a significant part of today’s educational system, including learning management systems (LMS), for example, Facebook (Gan, 2017), Wiki (Cao et al., 2014), Blackboard (Shu & Chuang, 2011), Blog (Newbury, 2016), and Google Docs (Nair et al., 2015).

Previously, research in Wiki studied the effectiveness of Wiki as a teaching tool has been studied at many levels such as schools, colleges and universities (Aofan & Qianqian, 2016). From an education perspective, Blog technology has the potential to improve student engagement and provide an environment for collaboration and knowledge construction (Mailllet et al., 2015). Blackboard also strengthened students” engagement and interactivity (Shu & Chuang, 2011). The effectiveness of Facebook communication and discussion tools
had studied by (Lwoga & Komba, 2015). Another researcher studied and explore Google Docs as a learning tool (Lwoga & Komba, 2015). It can conclude that, based the previous review, mostly the studied are almost to investigate the effectiveness, engagement students, environment and the tools of CE. Aside from offering a more straightforward communication between users, these tools also provide an easy means to share knowledge among long distance users (C.-P. Lin & Anol, 2008). Based the previous review, Wiki is less in a study which to determine factors influence intention to use mainly in Malaysia. Based on this literature review, the researcher will fill these gap which to examine the influence of other constructs on students’ intention such as gender, age, and level of education, and students” academic performance to be included it which it can improve the prediction capacity of the model (Mckeown & Anderson, 2016). This study should also address the effective method of using the social software to support student learning. In the meantime, this study has contributed in determining the factors that influence student’s attitude to social software use (Ibert et al., 2016). Therefore, the researcher will develop a conceptual model for examining students’ intentions to use Wiki as a Collaborative eLearning learning purposes since the tools of Wiki are very little studied in previous research (Neo et al., 2012). This study also using some attributes that were based on UTAUT model and several extended factors. This study will discover the factors that influence the intention to use Wiki in CE.

3. RESEARCH METHODOLOGY

The methodology undertaken in this study is literature review analysis and connecting concepts in a conceptual model. First, major requirements of collaborative eLearning, essential factors that should be present in a situation in which collaborative eLearning earnings place, have been recognized by regular analysis of literature using content analysis approach. Next, nominated requirements of collaborative eLearning have been debated in relation to the community broadcasting features and abilities. UTAUT model frequency that had been used by previous research to investigate the factors of user’s intention. These studies are focusing on a domain of collaborative eLearning.

To identify major requirements of intention to use collaborative eLearning, the prospective set of articles was drawn up by searching popular online databases such as ProQuest, Ebsco-Host, Emerald, Web of Science, Elsevier, Scopus, Science Direct, and Google Scholar/books. The dialect constraint (English) might have been connected to the chose articles. The combination of the following terms used for searching the aforementioned databases “Collaborative eLearning/ Social networking environments/Internet-based virtual worlds/Social networks/ Web 2.0/ UTAUT model/ Intention to use / Wiki”.

To ensure the quality of papers, cases having less academic rigor (not published in peer-reviewed scholarly publications) or having the inadequate discussion about the topic were discarded from the sample. Initially, exact statements of authors which explicitly or implicitly stated some requirements for intention to use collaborative learning were collected and summarized in a table.

### Table 1: Variables in by several UTAUT model variations used in this study

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<th>Variables in by several UTAUT model variations used in this study</th>
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<tbody>
<tr>
<td>Social influence:</td>
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<td>Performance expectancy:</td>
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<td>Effort expectancy:</td>
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<td>Habitual intention:</td>
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<td>Attitude towards conditions:</td>
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<td>Learning academic:</td>
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<td>Locus of control:</td>
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This study should also address the effective method of using the social software to support student learning. In the meantime, this study has contributed in determining the factors that influence student’s attitude to social software use (Ibert et al., 2016). Therefore, the researcher will develop a conceptual model for examining students’ intentions to use Wiki as a Collaborative eLearning learning purposes since the tools of Wiki are very little studied in previous research (Neo et al., 2012). This study also using some attributes that were based on UTAUT model and several extended factors. This study will discover the factors that influence the intention to use Wiki in CE.
In light of Table 1 above, there are many variables that can be reached out from UTAUT models so as to examine client acknowledgment to innovation in view of particular sorts of study. The researcher has examined ten UTAUT display explore articles to perceive the fundamental patterns and factors utilized as a part of these investigates, particularly on the e-learning theme. The table showed that certain factors have been frequently used to investigate the factor for intentions to use which domain in e-learning using UTAUT model. The results from the table showed that the construct frequently used to examine the influence factor of intention to use by UTAUT model. For instance, in the article Utilizing UTAUT should anticipate multigenerational tablet selection polishes (Ilias & Giannakos, 2016), have utilized the UTAUT model concerning illustration a hypothetical essential to increase. Furthermore, enhancement surviving to utilize tablet. Learning Online Social Support (East et al., 2008). Relying on the basic UTAUT model, they examine the extent to which perceived critical mass, social influence, online support expectancy, relationship commitment, network it usage intention, effort expectancy, network it usage, facilitating conditions and online social support toward an investigation of network information technology (East et al., 2008).

Although most consumers are still reading e-books on a computer (Mhouti & Nasseh, 2016), found that more and more people use mobile phones to read e-books which the main purpose of that studied. By using performance expectancy, effort expectancy, social influence, attitude toward using technology, demographics, and behavioral intention was to explore "consumers „attitudes and the intentions of using cross-media e-books." In order to respond to the wave of digital publishing, publishers should upgrade their technological capacity and then publish cross-media e-books. (Alzahrani & Newbury, 2016) focused on the level of correspondence the middle of students” recognized Taking in Also educating support styles, which together straightforwardly moderate the purposeful and utilization about e-taking in frameworks. It might have been enriching the UTAUT model by coordinating cognitive distinctive contrasts on orchestrating those impacts about demographic moderators. Comprehension Web-based taking in continuation intention, (Hsu, 2012) shown that performance expectancy, effort expectancy, computer self- efficacy, attainment value, utility value and intrinsic value, also innate esteem were huge predictors of individuals” intentions will keep utilizing Web-based learning, same time uneasiness required a critical negative impact. The intention to use a webinar was directly influenced by performance expectancy, effort expectancy and facilitating conditions (Laal et al., 2012) which studied the factors that explain the acceptance of a webinar system in a blended learning course by students using the same model like others which is UTAUT model. In context online social support, (Raman et al., 2014) claimed that relationship commitment and perceived critical mass are potent determinants that can ultimately enhance online social support through online support expectancy and other mediators. Social influence plays a more significant role than other constructs in that study as it affects online social support directly and indirectly through the intention-behavior path.

In addition, very little existing research has adopted collaborative eLearning techniques. Furthermore, understanding factors that could influence student learning in the collaborative eLearning could help students applying this new way of learning in their process learning (Yueh et al., 2015). However, very few studies have developed models to empirically investigate factors on student learning in a collaborative eLearning environment (Y. Guo, 2015). With the intention of addressing these gaps, this study first introduced the design of a collaborative eLearning and then developed a research model to systematically examine the influential factors (such as performance expectancy, effort expectancy, social influence and e-collaboration) on students” intention to use in this new learning environment using Wiki (DeWitt et al., 2014). The researcher’s selected only five elements for this study namely
performance expectancy, effort expectancy, social influence, e-collaboration and intention to use. The reason that this element was chosen is that based on Table 1, these were the main variables used by previous researchers in their UTAUT studied in intention to use which domain in e-learning. In this study, the researchers maintain the same UTAUT model as adopted from Chaka & Govender, (2017). As justified by Venkatesh et al. (2012), facilitating conditions in the original UTAUT in the environment that observes agree make an act easy to do, including the provision of computer support, Venkatesh et al. (2012) guaranteed that when both performance expectancy constructs also effort expectancy constructs would present, facilitating conditions get to be no noteworthy over foreseeing expectation. Therefore, the facilitating conditions variables have been dropped in this study.

Next, researchers modified this model and added one more element in this proposed model which is e-collaboration. The most important element to be examined in the study of intention to use Wiki is e-collaboration. It should be noted that the UTAUT model does not include e-collaboration elements. However, in this study, the researchers include e-collaboration elements to examine the intention to use Wiki for CE.

E-collaboration camwood makes characterized likewise coordinated effort "around people locked in done a basic undertaking utilizing electronic innovations. Collaboration is the key to a successful online learning method. It can develop a strong sense of community and collaboration among learners. Collaboration is linked to learners’ greater satisfaction with their academic program and reduced feelings of isolation (Fidalgo-blanco et al., 2015). Electronic collaboration (e-collaboration) can be clarified as the collaboration between people to play out a particular task utilizing most recent innovations. There are numerous innovations utilized as a part of e-collaboration, for example, email, groupware, talk instruments, Blog, Wiki, Facebook and others (Review et al., 2017).

Recently, several tools have emerged as a major part of today’s educational system, including learning management systems (LMS) such as Blackboard (Shu & Chuang, 2011), Blog (Newbury, 2016), Facebook (Gan, 2017), Wiki (Cao et al., 2014), and Google Docs (Nair et al., 2015). Besides offering a more direct correspondence between clients, these apparatuses additionally gives a simple intends to share information between long separation clients (Khalil & Ebner, 2013). Generally, the previous studied more focused on effectiveness, engagement and the tools of CE. However, the influences factors intention to use CE especially Wiki are less in previously studied. In this study, Wiki is selected as the tool of collaboration. The comparison has been made between Wiki and other methods that support CE, and it is found that Wiki has the best features to support CE. Wiki can be used to upload and share documents, create content online in HTML, conduct online discussions, grade discussions/participation, initialize online chat, perform student peer review, answer online quizzes/surveys, online grade book, submit student’s documents, perform self-assessment of submission for student workgroups, student journals, and embedded glossary. Therefore, based on these features, Wiki will be used as the tool for this study. Since this study will investigate the intention to use Wiki as a collaborative e-learning tool, therefore the elements of e-collaboration will be included in this proposed model. This data will be used to detect particular activities and elements that lead to students’ intention towards using Wiki in CE.

4. ANALYSIS AND RESULT

Figure 1 shows the last proposed demonstrate for understudies' aim in CE utilizing Wikis. To turn out with another hypothetical system, analysts need to reevaluate which factors are legitimate and invalid (Lv et al., 2010). Figure 1 presents the general applied model and next subsections will clarify the variables incorporated into the proposed investigate display.
1) Performance Expectancy (PE)

Performance expectancy (PE) can be defined as “the degree to which a person believes that using the system will assist in improving his/her job performance” (Israel et al., 2016). PE is comparable to perceived usefulness in TAM and relative advantage in Diffusion of Innovations model (Israel et al., 2016). In UTAUT, PE is posited as a direct determinant for behavioral intention (BI). A study found that PE is more significant compared to effort expectancy (EE) (Israel et al., 2016) and the same outcome was found in other similar studies (Zhu et al., 2015), (Ibrahim et al., 2011) and (Dumpit & Fernandez, 2017). In this investigation, PE will be utilized to think about students’ point of view on the advantages of utilizing Wikis for CE. A few types of research have accentuated the pretended by PE on BI in utilizing online learning instruments (Ebrahim, 2011), (Vivian et al., 2013), (Visuvalingam, 2006) and (Mhouti & Nasseh, 2016). In this investigation, in concurrence with the UTAUT display, if students saw CE conceptual model as valuable, this will increase the value of their learning procedure and they will probably utilize the model.

2) Effort Expectancy (EE)

Effort expectancy (EE) can be explained as “the degree of ease linked with the use of the system” (Israel et al., 2016) and is similar to ease of use in TAM (Cheng et al., 2014). In UTAUT, EE is posited as a direct determinant for BI. In the literature larger part of research done on comparative theme found that EE influences BI (Padilla-Melendez et al., 2008), (Dumpit & Fernandez, 2017), (R. Guo et al., 2015), (Mhouti & Nasseh, 2016), (Buchanan et al., 2013) and (Cheung & Vogel, 2013a). For this examination, EE is incorporated into the request to think about understudents’ observation on the usability of the framework and to gauge their aim in utilizing Wikis. Understudents will be additionally eager to utilize Wikis in the event that they found that this tool is relatively easy to use.

3) Social Influence (SI)

In similar terms, social influence (SI) is the social pressure originating from the external environment of a person that may influence his/her opinions and behaviors (Israel et al., 2016). SI has a direct effect on BI because people may be affected by opinions of people surrounding him/her, and become involved in things that they may be reluctant to take part in. (Israel et al.,
2016) opined that this happens in compulsory situations and rarely happens involuntary situations. In view of UTAUT rules, this exploration will think about the immediate impact of SI on BI. From the CE perspective, understudies' choice to utilize and acknowledge such advances is normally because of associate impact (partners/different understudies) and teacher impact (bosses/educators) (Mhouti & Nasseh, 2016), (Buchanan et al., 2013), (Yen-Ting Lin et al., 2013) and (Chaka & Govender, 2017).

4) E-Collaboration

Even though the initial UTAUT model does not include the e-collaboration factor, it is confirmed that this factor is important to improve the intention to use and actual usage of information technology (IT). (Raes et al., 2012) claimed that collaboration perspectives are urgent on the grounds that they prompt positive recognition towards IT framework, accordingly enhancing CE utilization rate. Different examinations demonstrated that client collaboration highlights can be ascribed with help of, acknowledgment of, and fulfillment with IT systems (Oye et al., 2011).

5) Intention to Use

Positive intention to use was found to be important in the actual use of technology (Liaw & Huang, 2013). It is proven that UTAUT model can be used to determine users’ intention to use, especially in the field of technology (Israel et al., 2016) and (R. Guo et al., 2015). Intention to use implies a client’s force or wants to utilize advanced data assets for his/her learning procedure. This factor assumes an urgent part in anticipating future use of an innovation (Ioannou et al., 2015). Numerous investigations support the fundamental connection between intentions to use (Israel et al., 2016).

5. CONCLUSION

CE is very useful to be applied in the learning process because it is beneficial for students, lecturers and also for organizations (C.-P. Lin & Anol, 2008). The main advantages from CE can be concluded in three categories which save time (Stockleben et al., 2016), knowledge sharing and interaction (Elgort, n.d.) and builds the skills (Ibert et al., 2016). This paper has proposed a conceptual model for CE intention to use Wiki. Previous studies have proven the lack of studies done in influences factors intentions to use CE especially using Wiki and its more focused on the effectiveness of CE (Greenhow et al., 2009), engagement and interactivity with related tools (B. Balakrishnan, 2014), (Khor, 2015), (Lv et al., 2010)], In general, this study modified the original UTAUT in order to measure students’ intention to use Wiki for CE. This study adopts the core constructs used in UTAUT. Specifically, it validated the relationship between performance expectancy, effort expectancy, social influence, e-collaboration and intention to use. However, future researchers need to deeply review the evaluation criteria related to the topics studied for CE.

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