

## **The Role of the Learning Management System Usage and Impact of the Changes to the Social Interaction Anxiety: A Tentative Model**

<sup>1</sup>Azriaty Mazlan and <sup>2</sup>Jusang Bolong

<sup>1</sup>Campus Lifestyle Section, Universiti Kuala Lumpur, British Malaysian Institute,  
53100 Gombak, Selangor, Malaysia

<sup>2</sup>Faculty of Modern Languages and Communication, Universiti Putra Malaysia,  
43400 Serdang, Selangor, Malaysia

---

**Abstract:** Learning management system is a relatively new phenomenon and until very recently their use of university was limited. Now the lecturers and the students have been pushing to use this system so that, they have a better and improved in a learning situation. The learning management system is already changing the organization and delivery of higher education. The pedagogical forces that have driven the higher learning institutions to adopt and incorporate ICTs in teaching and learning include greater information access and greater communication. The adoption of Technology Acceptance Model (TAM) which has two dimensions where Perceived Ease of Use (PEOU) is “the degree to which an individual believes that using a particular system would be free of physical and mental effort and Perceive Usefulness (PU) is defined as “the degree to which an individual believes that using a particular system would enhance his or her job performance. This concept study observes the impact of perceived ease of use, perceived usefulness on the extent of learning management system usage among university students. It is also looking at the moderating effect of learning management system usage between perceived ease of use, perceived usefulness and social interaction Anxiety. This research becomes a concern because a significant relationship social interaction anxiety was found between the level of problematic Internet use and social interaction anxiety. This study also observes the Anxiety/Uncertainty Management (AUM) Theory. In assessing social interaction anxiety among the predictors that can be counted on are perceived ease of use and perceived usefulness. Therefore, this study will elaborate some of the theory that is used in the previous study and some for the future study purposes.

**Key words:** Moderator, perceived ease of use, perceived usefulness, learning management system usage, social interaction anxiety

---

### **INTRODUCTION**

Live in an environment full and loaded of technology and information in the first decade of the twenty first century is very common to the students. The 21st century is witnessing the field of information and communication technologies are rapidly progressing. Young people are already changed into the information age and are participating in the global society. Student's ability to find and regain information effectively transferable skill is very useful for their upcoming life. Enabling the positive and the successful used of the electronic resources while in university were also improved their soft skill. Students who have more familiarities in using technology much better in their education level. In ensuring that education is not considered out-dated, then the implementing of e-learning, especially at the tertiary level. As a result, Learning Management System (LMS) program has been

integrated into the university program. Many institutions have run a student survey on the use of their LMS and it was useful to locate some of these studies and compare findings. In a longitudinal study (2001-2005) at Swinburne University on student's experience of the blackboard learning management system by Robbie found that students wanted lecturers to use the system more and make better use of the tools available in the LMS.

The development of LMS in Malaysia is still new when compared to Western countries. All this while distance learning has been implemented in this country which allows the students who live far away from the university and working people wish to continue their learning. Today, LMS is said to be an alternative to the teaching methods that are still tied to the traditional method. LMS is seen as one of the initiatives of improvement and strengthening of the education system.

LMS changes the student's experience as well as the lecturer's. LMS provides the educators with a way to create and deliver the content, monitoring the student participation and assessing the student performance. An LMS may also provide students with the ability to use interactive features such as thread for discussions, video conferencing between students and lecturer and discussion forum. The LMS has been established digital world today to help the connection between student and lecturer without the confines of the conventional teaching method. According to Hamuy and Galaz (2010), LMS have been widely used in higher education due to their many advantages including flexible learning times and unlimited distance education.

Communication technology is one of the elements that can change something in the organization. The effect of technology on education has been impressive, using the Internet and computers as an effective medium to establish communication between lecturers and students. Exposed to the technological wonders like computers and the internet learning, students are able to develop a sense of self-esteem and confidence.

#### **Literature review:**

**Social interaction anxiety:** Shyness and social interaction anxiety are often used interchangeably. Shyness is a personality characteristic that is considered less severe than social anxiety or even the more extreme as social phobia. According to Leary (1983), social anxiety is defined as "a state of anxiety resulting from the prospect or the presence of interpersonal evaluation in real or imagined social settings". Social anxiety is a milder form of social phobia, which can have debilitating symptoms for people who are faced with face to face social situations. The symptoms of social anxiety often include anxiety, depression and an overall uncomfortable feeling that influences one's ability to interact in social situations.

According to Erwin *et al.* (2004) and Robinson *et al.* (2000), another positive aspect of heavy use of social interactive technology may be an increase in confidence in communicating with others face-to-face due to a perception of social support online. In contrast, Kraut *et al.* (1998) found that online interaction greatly reduced face-to-face social interaction. Nie and Erbring (2002) noted that "on average, the more time spent on the Internet, the less time spent with friends, family and colleagues (in-person)".

Social interaction anxiety differs between individuals, so it makes sense that the relationship between

technology and social anxiety is gloomy and is often varies case to case. For some people who suffer in this kind of matter, technology can increase social interaction. A study by the Forest and Wood found that people with low self-esteem who may be reluctant to talk about themselves with peers face to face more comfortable sharing personal information on facebook.

**Anxiety uncertainty management:** According to the 1995 on the AUM theory (Gudykunst, 1995) the theory aims at enhancing one's effective communication by reducing the amount of uncertainty and anxiety to moderate levels mediated by mindfulness. According to Fogg (2009), anxiety and uncertainty are common matters for university students in general but those who taking online programs, fear of isolation and loneliness become additional sources of anxiety. One of the very important components for success in an online environment is that of creating community to reduce isolation for students who cannot interact with others face-to-face as do their on-campus counterparts (Bajjaly, 2005). There are several strategies to maximize student-student and student-instructor communication such as discussion boards, collaborative projects and synchronous class time (Dolan *et al.*, 2009). Many of the same elements of the learning situation affecting the success of traditional campus students affect online students as well. The difference in skill level and learning speed may show that the types and levels of interaction between students must be individualized in some way in order to enable students to create and maintain the level of two community involvement that meets their personal needs (Wozniak *et al.*, 2009).

Based on this theory, it will be tested that if the students with the perceived ease of use and perceived usefulness of learning management system whether the elements on anxiety in such various communication situations exist. Illustrated below are the essential constructs of the AUM theory: effective communication, uncertainty, anxiety and mindfulness.

**Learning management system usage:** According to Wahlstedt and Honkaranta, the Learning Management Systems (LMS) comprises pedagogical devices, human interactions, learning content and assessment supporting and advancing traditional learning in school or in higher education. The LMS must meet the needs of the users: the students and the instructors. LMS was largely used as a useful content distribution system. Learning management system activities can be both interactive (email, IM, etc.) and non-interactive (web-surfing). Lecturers can use the LMS for lessons and in anxiety on the students.

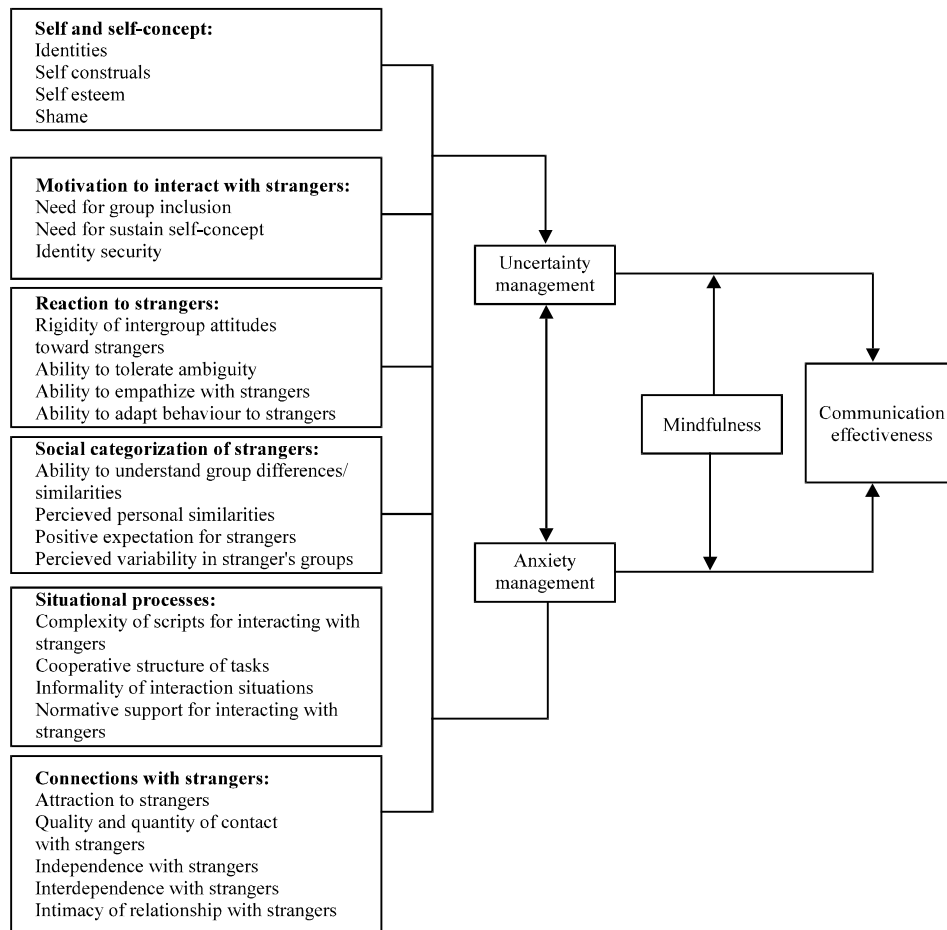


Fig. 1: Aschematic representation of AUM theory

teract with students in the distance. There seems to be a gap between the reality and the many advanced teaching tools that are provided in LMS such as multimedia materials which were considered as a possible means for improving teaching but not utilized. To bridge this gap, LMS system should be built to be more familiarize and customizable. This is to support lecturers with different computer level skills (Fig. 1).

According to Ramayah, many colleges are using the LMS for e-learning courses and instruction but many instructors limit themselves to uploading course materials (such as syllabi, reading materials and lecture slide) to the course web site and never use the interactive features (chat, discussion forum, email and messages). Some instructors may use the discussion board to generate class discussion among students and themselves, but the lack of immediate feedback with the discussion board in LMS has discouraged users to utilize them. Although, many interactive features are available in the LMS, its capacity for use may still be limited because of its demand on the commitments from both lecturers and students

during a specific time frame. An effective implementation of an LMS need to determine the critical features of the system and their implementation. Some suggest that although non interactive online activity may detract from in-person interactions, other activities may actually strengthen or substitute face-to-face social connections (Kraut *et al.*, 1998; Zhao, 2006). Those who use the Internet primarily for non-interactive purposes also tend to have fewer in-person social ties (Zhao, 2006). In contrast, those who frequent interactive sites tend to maintain strong interpersonal (in-person) connections (Zhao, 2006). According to Cuhadar (2012), “a significant relationship was found between the level of a problematic Internet use and social interaction anxiety and social interaction anxiety was found to be among the predictors of problematic Internet use. Hence, it is very important to study the LMS usage towards the social interaction.

**Technology acceptance model:** The Technology Acceptance Model (TAM) has been widely used to predict user acceptance and it is used based on perceived

usefulness and ease of use. When people accept the technology and use it as part of their life, it could also have some issues arise. Students in the university used learning management system as part of their learning tools. Previous years ago, before LMS has been introduced, face to face and direct communication were a channel to communicate between lecturers and students. Since the channel of communication has changed into LMS portal, students and lecturers need to use LMS as part of their journey of their life in campus. The learning management system or popularly known as LMS in the community of higher institutions is an online portal that connects lecturers and students. It is also a portal that enables lecturers and students to interact out of the classroom, having discussions through forums that could otherwise take up too much of the time supposed to be spent learning in the classroom. University students are mostly independent in their learning as lecturers usually give out lecture notes and further information are left for the students to discover on their own, as it is not a one-way learning process which is practiced in the primary and secondary school system.

Technology Acceptance Model (TAM) has been examined in many studies such as Davis *et al.* (1989) and Mathieson (1991). It has been found that an individual's behavior to use a system largely explains their intentions. Consequently, Mathieson (1991) study has found that TAM consistently explains a significant amount of the variance in usage intentions and behavior. The model puts it that the behavioral intention to use has a significant impact on a user's ability to actually use a system. Behavioral intention to use the system is modelled as a function of actual system use and perceived usefulness (Davis *et al.*, 1989).

TAM has earlier postulated that two beliefs, known as the PU and the PEOU, determine the attitudes of people toward using a particular system. Such attitudes together with PU would subsequently determine use intention and furthermore, this would lead to the actual use of the system. In the Malaysian context, it should be noted that researches on technology use have demonstrated that the PEOU and PU are important predictors on the decision to not only adopt a technology but also to continue to use that technology.

According to Davis *et al.* (1989), TAM was intended to "provide an explanation of the determinants of system acceptance that is general, capable of explaining user behavior across a broad range of end-user computing technologies. Davis (1989) proposed that perceived usefulness and perceived ease of use predict usage of the system.

**Perceived usefulness (PU):** Perceived Usefulness (PU) is the degree to which an individual believes that using a particular system would enhance his or her job performance (Al-Gahtani, 2001). PU is defined as the degree to which an individual believes that using an LMS would enhance his or her learning performance, while perceived ease of use is defined as the degree an individual believes that using LMS would be less effort to learn how to use the system. According to Gong *et al.* (2004), it defines perceived usefulness as the user's "subjective probability that using a specific application system will increase his or her expectations.

Perceived Usefulness (PU) comes from the definition of the word useful, which is "capable of being used advantageously." Therefore, a system that scores high in perceived usefulness will have a positive user performance impact. Davis *et al.* (1989) defines the usefulness as "the degree to which a person believes that using a particular system would enhance his or her job performance". On using the LMS, students would intend to use the system if they feel that the system might make their learning activities easier and smooth with less effort.

**Perceived ease of use (PEOU):** Perceived Ease of Use (PEOU) refers to how clear and understandable interaction with the system is, ease of getting the system to do what is required, mental effort required to interact with the system and ease of use of the system (Ndubisi *et al.*, 2001). Perceived ease of use, in contrast, refers to "the degree to which a person believes that using a particular system would be free of effort". This follows from the definition of "ease": "freedom from difficulty or great effort." PEOU in TAM has been defined as the extent to which a person believes that using a certain technology will be free of effort (Davis, 1989).

PEOU positively influenced behavior intention. PU describes the perceptions of an individual's innovativeness. It has been seen to have a great influence on one's behavior reflected in terms of compatibility, feedback, relative advantage and subjective norms. PEOU describes the individual's perception of how easy the innovation is to learn and use. This includes support, complexity and change. In a study by Min "Students recognized that learningzone is an effective medium for their learning and they have positive perception towards learningzone as a medium of knowledge or information sharing and interacting with lecturer and other students." Therefore, they were satisfied with online lecture note posted on learningzone. Learningzone is a medium same as a Learning Management System. Based on finding by Min shows that students in UUM were less satisfied with these modules and these modules need to be studied and improved. Therefore, the hypotheses are as:

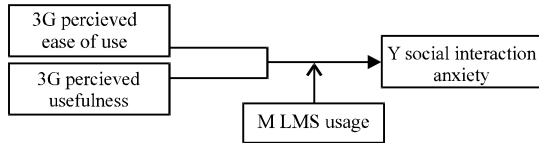


Fig. 2: Conceptual model

- H<sub>1</sub>: There is a significant relationship between students with perceived ease of use and social interaction anxiety
- H<sub>2</sub>: There is a significant relationship between students with perceived usefulness and social interaction anxiety
- H<sub>3</sub>: There will be a moderation effect of LMS usage on the relationship between perceived ease of use and Social Interaction Anxiety
- H<sub>4</sub>: There will be a moderation effect of LMS usage on the relationship between perceived usefulness and social interaction anxiety

**The conceptual research model:** Where X = Independent variable (Technology Acceptance Model-Perceived Ease of Use and Perceived Usefulness, Y = Dependent variable (Social Interaction Anxiety) and M = Moderator variable (LMS Usage).

A moderator variable is the variable that moderates the effects of an independent variable on its dependent variable. It is defined that the moderator as the variable that interfere in the relationship between an independent variable and its corresponding variable. A moderator of total hours spending time in a week is used to see is there any moderate effects between the independent variable (Fig. 2).

**Significance of study:** The field of human communication is increasingly challenged when the development of communication technology is growing rapidly. Communication technology has given a space to build interpersonal relationships through computer mediated communication. Therefore this study will attempt to make a valuable contribution towards better understanding of human communications on technology and knowledge on relational development in LMS particularly within the local context.

## CONCLUSION

Based on the hypothesis, it would be tested whether the LMS usage as the moderator can be fitted in this proposed model. With the outcome of the model, it is expected to be a guide in Institute of Higher Education whether the LMS is one the communication technology

that can change the situation of the interaction between students and the educators. It is a need for further research on social interaction anxiety among the students in the university.

## REFERENCES

- Al-Gahtani, S., 2001. The applicability of TAM outside North America: An empirical test in the United Kingdom. *Inform. Resour. Manage. J.*, 14: 37-46.
- Bajjaly, S.T., 2005. Enhancing student faculty communications in online courses. *Online J. Distance Learn. Administration*, 8: 1-6.
- Cuhadar, C., 2012. Exploration of problematic Internet use and social interaction anxiety among Turkish pre-service teachers. *Comput. Educ.*, 59: 173-181.
- Davis, F.D., 1989. Perceived usefulness, perceived ease of use and user acceptance of information technology. *MIS Quart.*, 13: 319-340.
- Davis, F.D., R.P. Bagozzi and P.R. Warshaw, 1989. User acceptance of computer technology: A comparison of two theoretical models. *Manage. Sci.*, 35: 982-1003.
- Dolan, S., C. Donohue, L. Holstrom, L. Pernell and A. Sachdev, 2009. Supporting online learners: Blending high tech with high touch. *Online Learn. Exch.*, 31: 90-97.
- Erwin, B.A., C.L. Turk, R.G. Heimberg, D.M. Fresco and D.A. Hantula, 2004. The Internet: Home to a severe population of individuals with social anxiety disorder?. *J. Anxiety Disord.*, 18: 629-646.
- Fogg, P., 2009. Grad-school blues. *Chron. Higher Educ.*, 55: 12-16.
- Gong, M., Y. Xu and Y. Yu, 2004. An enhanced technology acceptance model for web-based learning. *J. Inform. Syst. Educ.*, 15: 365-374.
- Gudykunst, W.B., 1995. Anxiety Uncertain Management Theory: Current Status. In: *Intercultural Communication Theory*. Wiseman, R.L., (Ed). Sage, Thousand Oaks, California, ISBN:9780803972438, pp: 8-58.
- Hamuy, E. and M. Galaz, 2010. Information versus communication in course management system participation. *Comput. Educ.*, 54: 169-177.
- Kraut, R., M. Patterson, V. Landmark, S. Kiesler, T. Mukophadhyay and W. Scherlis, 1998. Internet paradox: A social technology that reduces social involvement and psychological well-being? *Am. Psychol.*, 53: 1017-1031.
- Leary, M.R., 1983. Social anxiousness: The construct and its measurement. *J. Personality Assess.*, 47: 66-75.
- Mathieson, K., 1991. Predicting user intentions: Comparing the technology acceptance model with the theory of planned behavior. *Inform. Syst. Res.*, 2: 173-191.

- Ndubisi, N.O., M. Jantan and S. Richardson, 2001. Is the technology acceptance model valid for entrepreneurs? Model testing and examining usage determinants. *Asian Acad. Manage. J.*, 6: 31-54.
- Nie, N.H. and L. Erbring, 2002. Internet and mass media: A preliminary report. *IT. Soc.*, 1: 134-141.
- Robinson, J.P., M. Kestnbaum, A. Neustadt and A. Alvarez, 2000. Mass media use and social life among Internet users. *Soc. Sci. Comput. Rev.*, 18: 490-501.
- Wozniak, H., M.J. Mahony, T. Lever and J. Pizzica, 2009. Stepping through the orientation looking glass: A staged approach for postgraduate students. *Australas. J. Educ. Technol.*, 25: 221-234.
- Zhao, S., 2006. Do Internet users have more social ties? A call for differentiated analyses of Internet use. *J. Comput. Mediated Commun.*, 11: 844-862.