

## **Online Forum: A Platform that Affects Students' Learning?**

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### **Abstract**

*In the current era of globalization, constant and perpetual advances in information technology are reshaping learning styles and the way students learn in higher education. Thus, the purpose of this study was to determine the usage of online forums as a platform and learning tool. It also investigated how online forum affected students' learning, particularly in active learning and independent learning. A survey was conducted amongst 113 business foundation students from a private university in Malaysia. The study found that learning experience and learning satisfaction gained from online forum influence both active learning and independent learning. Conversely, learning ease only affects active learning and not independent learning. These findings draw attention to facets of online forums, which could have an impact on how instructors transfer knowledge and how students learn.*

**Keywords:** online forum, learning ease, learning satisfaction, learning experience, active learning, independent learning

### **1.0 Introduction**

As early as the mid-1970s, it was hypothesized that the emergent forms of telecommunications media vary in their degree of social presence and, therefore, have effects on group interaction (Thomas, 2002). The "world to the desktop" interface is now complemented by multi-user virtual environments. People's avatars interact with each other, computer-based agents, and digital artifacts in a simulated context; and augmented realities in which mobile wireless devices infuse overlays of digital data on physical real-world settings (Dede, 2005). The virtual real-time effect created is able to match the sense of immediacy the learner gets from an actual physical interaction. The time and place flexibility provided by these online environments are so conducive that anyone can learn at any time; thus, garnering an increasing number of learners (Moore and Kearsley, 2005; Simonson et al., 2009). In the light of this, institutions of higher learning are driven to adapt and use the various modes of information technology to not only effectively deliver their instructional materials but to also achieve the modules' learning outcomes. Hence, classrooms are more mediated today, than they were before. The present classroom scenario is built around the instructor utilizing Course Management Software (CMS), such as Blackboard and Moodle. Instructors are encouraged to use podcasts, online discussion groups and other technologies to engage and connect with students. This integration between traditional face-to-face format and technology-based learning is said to complement learning experience through an increased understanding (Dillon and Gabbard, 1998) and better student learning. However, it must be pointed out that as instructors, one must determine what technologies to use and how to use these new technologies appropriately for effective learning to take place.

In the midst of these new emerging technologies in online learning, the popularity of using online forums as a tool for discussion cannot be undermined. The flexibility of responding to messages and posts at preferred times and being able to view comments as often as one likes can be viewed as consistent with what a digital native would appreciate.

It has been highlighted that online forums are structured in a manner that requires a putting down of ideas via writing. This can be viewed as an effective training ground for deep learning, cultivation of original thought and application of data acquired in the course. In fact, if a learner feels in control of his choice to learn as he has made the conscious decision to tune in at that specific moment, it is likely that some form of learning will occur. However, the degree of learning that actually takes place warrants further investigation by way of mode of assessments that can be used to gauge the extent of understanding of the subject matter.

Therefore, the objective of this study is to determine whether the use of online forums as a learning platform influences active learning and independent learning. This study also analyses whether the use of online forums such as Today's Meet, Facebook, blogs and discussion threads in Moodle, influences the way students perceive, understand and absorb knowledge, which could affect learning experience, satisfaction and ease. This paper will be structured as follows: Section 1 explains the background to the research, Section 2 explores the literature, Section 3 describes methodology and analyzes the findings, Section 4 discusses the limitations, and Section 5 summarizes and concludes.

## **2.0 Literature Review**

### **2.1 Online Forums, Active Learning and Independent Learning**

The common notion about online forums is that it is a virtual learning environment that stimulates interaction and sharing of ideas. Whether or not the forum is synchronous or asynchronous, when used in the appropriate context, its value exceeds from just merely increasing student engagement to fostering critical analysis, reflection and social construction of knowledge (Thomas, 2002). Given this, students are not only likely to learn in a connected way from one another but also learn as much as they would from course materials or attending classes. All these can be accomplished without the constraints of time and space. Naturally, institutions of higher learning are coming to terms with the opportunities and possibilities offered by this online facet of teaching and learning. It is thus not surprising to see this trend manifest itself gradually as educational institutions turn to blended learning: a convergence of internet-based learning with face to face interactions (Garrison and Hanuka, 2004). Being a computer-facilitated conference, online forums are growing into essential mediums for continuing professional education and group collaboration (Kanuka and Anderson, 1997). This is further supported by Hammond (2005) when he states that asynchronous online discussion is seen as offering additional value by providing learners with the experience of computer communication tools and opportunities for participating in group work. When groups collaborate in a mediated online forum, the interaction between individuals using different learning theories, styles and activities, and technologies can lead to the creation of vibrant communities of learners (Anderson, 1996). What Anderson implies here is twofold; the conception of a breed of thinkers and the propagation of a dynamic way of acquiring knowledge.

Active learning is defined as instructional activities that involve students in doing things and thinking about what they are doing (Bonwell and Eison, 1991). The collaborative nature of online forums encourages active learning that focuses the responsibility of learning on the learners. It involves meaningful activities that require students to do more than merely watching, listening and taking notes in a classroom setting. This is the meeting point at which online forums are in tandem with the nature of active learning. Online forums facilitate a largely self-directed active learning process through open-ended discussions that promote problem-solving, analysis, synthesis and evaluation of a topic. McKeachie et al. (1986) explain that active learning via discussions lead to long-term retention of information, motivates students to learn more, allows application of knowledge in new settings and develops students' thinking skills. However, the usefulness of discussions via online forums is dependent on the expertise of the instructor. Effective questioning and discussion technique will solicit expected outcomes. In addition, constructive feedback and motivating responses from the instructor will sow the seeds to intellectual and emotional input on the part of the learner. Once the comfort level and confidence is established over a period of time, the natural inclination of the learner is to now explore on his own. This independence endows the learner to propel himself forward.

Independent learning enables the student to deal with new information and draw independent conclusions. According to Sit et al. (2005), independent learning empowers students to be accountable for their own study. In the context of online forums, students do assume responsibility for their own learning. Unlike traditional classroom teaching, online discussions are conducive for learning at one's own pace, level and depth.

This “virtual community of enquiry” which online forums support, provides a leeway for personal freedom of expression in a sense. The pressure to perform is also a less of a hindrance when the learner has made the conscious decision to be a part of this process. Consequently, the learner is led to construct experiences and knowledge through analysis of the subject matter by questioning and challenging assumptions (Garrison et al., 2001). According to Rowntree (1995), what students learn can be seen not so much as a product but as a creative cognitive process of offering up ideas, having them criticized or expanded on, and being able to reshape ideas in the light of peer discussions. By reflecting on the ideas and thoughts that are shared online by peers, students are able to independently articulate their own thoughts towards reaching an understanding about the topic of discussion. Based on the literature review, the research question for our study is: “Do online forums influence active learning and independent learning among students?”

## **2.2 Learning Experience**

Learning experience is defined as any interaction, course, programme or other experience in which learning takes place, whether it occurs in classrooms or outside classrooms, or whether it includes traditional educational interactions (students learning from teachers and professors) or non-traditional interactions (students learning through online forums and interactive software applications) (The Glossary of Education Reform, 2013). The key element that influences a student’s learning experience via online forums is familiarity. It is natural to assume that learners are generally more comfortable communicating with peers of their same needs and wants. Based on that premise, it is possible to think that they would be more at ease making discussion points and critiquing a particular topic with their fellow learners. It is just about getting used to the fact that group interaction can start from a physical discussion but should move on to an asynchronous discussion online (Baker, 2011). This nurtures what Brandon and Hollingshead (1999) call cooperative learning. The experience of cooperative learning is one that demands interdependence. Online forums can be seen as suitable grounds for the proliferation of this interdependence. Threaded discussions allow learners to capitalize on other learners’ resources, especially in a group forum where everyone is working collectively towards one objective. This give-and-take experience is perhaps what Ross and Smyth (1995) deem as “intellectually demanding” and sets the pace for “higher order tasks”. Therefore, online forums do actually qualify as a sufficient measure to evaluate the development of communication, interaction and collaboration in online courses as pointed out by Hammond (1999).

In their study of the experiences of learning via online forums, Shea and Bidjerano (2009) also validate the prospects of online forums in developing learners from novice to expert status. Lin, Cheng and Liu (2013) add that students using more elaborate online question and answer discussion forums are more likely to actively participate in online discussions, engaging at a higher cognitive level and enjoying superior learning performance when compared to those using forums that are more rudimentary. It has been shown that online discussion forums increase participation and collaborative thinking through the provision of asynchronous, nonhierarchical and reciprocal communication environments. Bates (1995) further believes that by reflecting on peers’ contributions in online discussions, students engage in higher-order processing of information after which through the act of articulating their own emergent understanding, are led towards the construction of personal meaning, which is not individualistic. According to DeSanctis et al. (2003), interactivity promoted by online forums is an opportunity to allow students to access other opinions and information not residing within the classroom or the instructor. This is critical in the process of students becoming independent and interdependent learners.

Therefore, technology mediated learning becomes more than merely to facilitate the transfer of declarative knowledge as it now promotes the construction of complex knowledge structures through multiple modes of representation and configuration (Thomas, 2002). Furthermore, technology has also been shown to support active learning where students must articulate and negotiate their developing knowledge structures (Greening, 1998). Through the use of online discussions, students participate in learning where they are confronted by a variety of different perspectives and engage in critical reflection, which leads to a change in their outlook as a result of the exercise (Harrington, 1992). In order to enhance students’ learning experience via online forums, it is also imperative that the instructors play a pivotal role in monitoring the online discussions, facilitating enquiries and providing feedback to students promptly. Hence, this study intends to verify that the online forum is a learning platform that affects student learning:

H<sub>1</sub>: Learning experience influences active learning.

H<sub>2</sub>: Learning experience influences independent learning.

### 2.3 Learning Satisfaction

Learning satisfaction refers to the degree of perceived learner satisfaction towards e-learning environments as a whole. Perceived learning satisfaction is widely used in evaluating effects of learning environments and activities both academically and practically (Sun et al, 2007). It is used as a key indicator of whether or not learners would continue to adopt a particular learning system (Arbaugh, 2000). Students usually prefer online learning via discussion forums as it removes geographical and time barriers in addition to allowing them to maintain their lifestyle choices while accomplishing academic goals (Braun, 2008; Edmonds, 2010; Yukselturk and Bulut, 2007). According to Lombardi and McCahill (2004), students involved in ongoing conversations in a community of practice makes the learners feel the supportive presences of participating peers, mentors and experts. This level of comfort stimulates learning satisfaction that will further encourage students to think independently and reflect on what is said during online discussions. In other words, learning satisfaction affects independent learning and active learning in students.

On the other hand, online forums promote independent learning that could also lead students to isolate themselves in their comfort zone, which could pose a potential concern despite the flexibilities provided by online forums. Benson and Samarawickrema (2009) used Moore's transactional distance theory to explain student isolation by suggesting that the physical separation between learner and instructor can contribute to psychological and communication gaps, which creates the potential for miscommunication. However, this could be improved by implementing collaborative learning and community building (Tirrell and Quick, 2012), which are integral constituents of online discussion forums. Fostering a sense of community seems to be an effective method for buffering student isolation in asynchronous learning. This is supported by research that shows retention and satisfaction rates have improved when online learners have a sense of community (Ali and Leeds 2009; Lee et al. 2011). Furthermore, a positive learning environment encourages and stimulates the exchange of ideas, opinion, information and knowledge that will lead to better learning satisfaction (Prieto and Revilla, 2006). This happens when learners believe that online forum provides effective student-to-student and student-to-instructor interactions. However, Straus and McGrath (1994) argue that introverted students are more likely to benefit from computer-mediated communication than extroverted students as introverted students find it easier to express their thoughts in the depersonalized forum. Hence, the lack of face-to-face communication is most likely to boost these students' confidence and satisfaction in learning as they are able to express their thoughts and ideas without involving any facial expressions, hand gestures or body language. Hence, this study intends to verify that the online forum is a learning platform that affects student learning:

H<sub>3</sub>: Learning satisfaction influences active learning.

H<sub>4</sub>: Learning satisfaction influences independent learning.

### 2.4 Learning Ease

Learning ease is the ability of students to decipher how to accomplish tasks and how easily they remember what they have learned. The user-friendly layout of an online forum allows students to hold discussions, and interact with instructors and peers in an effortless manner. It is an asynchronous learning network that provides an online space where students can access coursework and interact all in the student's own time frame (Gerlock and McBride, 2013). Harasim (1989) describes interaction, a major component of online forums, as the most striking characteristic of computer-mediated communication and the factor with the greatest potential to have an impact on learning. According to Condon and Cech (1996), computer-mediated communication helps students to increase communication efficiency, decrease typing requirements, and reduce the use of unneeded elaborative statements and repetitions. This is consistent with Garrison et al. (2001) that describe written communication, which is present in online discussions as being "leaner" because many of the non-verbal signals present in face-to-face oral communication such as body language, pauses and facial expressions are not necessary. This would enable students to learn the subject matter in an easier and less complicated manner. Sproull and Keisler (1991) suggest that computer-mediated communication has been shown to place the focus on what is said a dimension of active learning and remove seemingly extraneous aspects of face-to-face communication. Since there is no need for non-verbal cues and the associated depersonalizing of communication, the mode of communication is unrestricted (Willis, 1991; Ruberg et al., 1996). Furthermore, Jahnke (2010) points out that students who experience the sense of information being lost in the classroom will be able to revert to the online forum where information is preserved for future investigation.

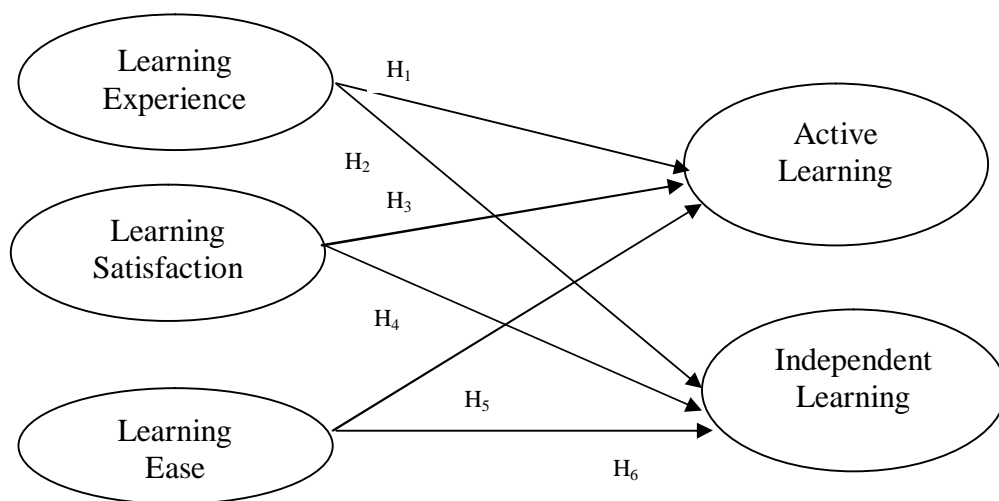
So, now the system is reaching out to a further group of learners; the ones that were previously inhibited from learning because the teaching tool required non-verbal cues and the ones who take a longer time to digest chunks of information. However, it is still important to consider what McCreary (1990) highlights about written communication in online discussions. He postulates the necessity of exactness, and organization and clear expression of thoughts for effective threaded discussions. This then begs the question of whether or not this tool actually increases the anxiety levels of learners who find difficulty in expressing themselves in words for various reasons. Hence, this study intends to verify that the online forum is a learning platform that affects student learning:

H<sub>5</sub>: Learning ease influences active learning.

H<sub>6</sub>: Learning ease influences independent learning.

The conceptual framework that provides the foundation of our study is shown in Figure 1 below. The ovals on the left-hand side represent independent variables, which are learning paradigms that are experienced by students from the usage of online forums in their learning. The ovals on the right-hand side represent the type of learning that takes place, i. e., active learning and independent learning. The solid lines are direct influences of online forums on student learning.

**Figure 1: Conceptual Framework**



### 3.0 Methodology and Data Analysis

This section explores the instruments to investigate the usage of online forums as a platform and learning tool in addition to examining how online forum affects students' learning in terms of learning experience, learning satisfaction and learning ease. This study used business foundation students from a private institution of higher learning in Malaysia as its research sample. The sample was selected based on the extent of usage of online discussion forums in facilitating student learning. The data collection was conducted through an online questionnaire that was created through Google docs and posted in Moodle. Data collected through online questionnaire is more accurate and there is a much smaller margin-of-error as responses are inputted directly into an MS Excel spreadsheet. Furthermore, online questionnaire guarantees respondents' anonymity, enhances objectivity of responses, increases accessibility by respondents, reduces administration costs and saves time. 114 questionnaires were received from student respondents with 113 usable questionnaires returned with a response rate of 94%. The 113 respondents consisted of 59 males and 54 females with an average use of online forum of 1.81 hours per day.

The questionnaire was created based on the five-point Likert's scale ranging from 1=Strongly Disagree, 2=Disagree, 3=Neutral, 4=Agree and 5=Strongly Agree. The six-part questionnaire consisted of 35 questions.

Section 1 covers questions on student demographics (gender, age, semester and programme), Section 2 contains the list of different platforms used for learning, type of devices used when engaging in an online forum and number of hours per day spent on average engaging in online forum, Section 3 comprises questions that measure learning experience, Section 4 consists of questions that assess learning satisfaction, Section 5 includes questions that gauge learning ease and Section 6 is made up of the list of graduate capabilities developed through the use of online forums. Participants of the study were informed on the purpose of the study and the extent of researcher interference in our study is minimal.

The Statistical Package for Social Sciences (SPSS) software was used to process and analyze the data. In order to establish the boundary of the descriptive variable and constructs, and to ascertain the internal validity and convergence, exploratory factor analysis (EFA) was carried out. The factor analysis reduced the number of variables and grouped variables with similar characteristics together. The extracted variables were then rotated using component principle analysis with Varimax rotation to identify the common factors. Five (5) factors emerged, namely, Learning Experience, Learning Satisfaction, Learning Ease, Active Learning and Independent Learning. This is consistent with our conceptual framework. Prior to running the exploratory analysis, the goodness of fit on data collected was assessed. The Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy test yielded an outcome of 0.848, which is considered good as it is greater than the minimum requirement of 0.5. This ascertains that the data is suitable for factor analysis. Furthermore, Bartlett's test of sphericity yielded an outcome with a p-value that equals to 0.05, which shows that the pair wise correlation is significant. This was followed by a 2-stage confirmatory factor analysis. The confirmatory factor analysis was conducted by using partial least square method as the model involved the impact of a block of independent variables on a block of dependent variables. Measurement model was applied to test convergent and discriminant validity. Here, Cronbach alpha coefficient and composite reliability were assessed. The convergent validity was achieved as all both tests attained acceptable threshold values as shown in Table 1 below. This confirmed that the measurement model was good.

**Table 1: Measurement Model Test Results**

Construct	AVE	Composite Reliability	R <sup>2</sup>	Cronbach's Alpha
Learning experience	0.716	0.899	-	0.906
Learning satisfaction	0.755	0.940	-	0.918
Learning ease	0.642	0.899	-	0.859
Active learning	0.709	0.907	0.867	0.863
Independent learning	0.725	0.930	0.886	0.905

Structural equation modeling path analysis was used to test the hypotheses formulated in the conceptual model. The goodness of fit for the model was confirmed with R<sup>2</sup> values, an indicator of the predictive power of path models. They indicate the amount of variance in the construct that is explained by the path model (Barclay et al., 1995). The R<sup>2</sup> value of 0.8666 showed that a substantial percentage of variance was able to explain active learning. In addition, the R<sup>2</sup> of 0.886 also showed that a substantial percentage of variance was able to explain independent learning. Table 2 below explains the results for the structural model.

**Table 2: Structural Model Test Results**

Path	Path Coefficient	Sample Mean	Standard Error	T-value	P-value (2-tailed at 0.05)
Learning experience → Active learning	0.229	0.224	0.052	4.429	0.000
Learning experience → Independent learning	0.721	0.720	0.050	14.526	0.000
Learning satisfaction → Active learning	0.406	0.408	0.062	6.567	0.000
Learning satisfaction → Independent learning	0.189	0.188	0.063	2.997	0.000
Learning ease → Active learning	0.383	0.385	0.049	7.830	0.000
Learning ease → Independent learning	0.086	0.088	0.052	1.641	0.104

After hypotheses testing, the relevant test results which justify the theoretical model are shown in Table 3 below.

**Table 3: Hypothesis Testing**

No	Hypothesis	Path	Significance
1	H <sub>1</sub>	Learning experience → Active learning	Supported
2	H <sub>2</sub>	Learning satisfaction → Independent learning	Supported
3	H <sub>3</sub>	Learning ease → Active learning	Supported
4	H <sub>4</sub>	Learning experience → Independent learning	Supported
5	H <sub>5</sub>	Learning satisfaction → Active learning	Supported
6	H <sub>6</sub>	Learning ease → Independent learning	Not Supported

The results of the t-test in Table 2 and Table 3 above show that student learning experience learning satisfaction and learning ease from using online forums demonstrate a significant influence on active learning. The means of learning experience, learning satisfaction and learning ease on active learning are significantly different at  $p = 0.05$ . Therefore, H<sub>1</sub>, H<sub>3</sub> and H<sub>5</sub> are supported. In terms of influence, learning ease is the most powerful followed by learning satisfaction and learning experience. The ease with which students engage in online forums can affect their sense of satisfaction and overall experience of learning. Discussions via online forums can increase ease of access, eliminate geographical barriers and improve convenience for effective collaborative learning. This will enhance learning satisfaction and learning experience of students. Learning experience exerted influences on active learning (path coefficient = 0.229,  $t = 4.429$ ,  $p < 0.05$ ), learning satisfaction exerted influences on active learning (path coefficient = 0.405,  $t = 6.568$ ,  $p < 0.05$ ) and learning ease exerted influences on active learning (path coefficient = 0.383,  $t = 7.830$ ,  $p < 0.05$ ). However, the results of the t-test also show that while learning experience (path coefficient = 0.229,  $t = 4.429$ ,  $p < 0.05$ ) and learning satisfaction (path coefficient = 0.189,  $t = 2.998$ ,  $p < 0.05$ ) exhibit their influences on independent learning, learning ease is found to be insignificant. The means between learning experience and learning satisfaction on independent learning are significantly different at  $p = 0.05$ . On the other hand, the mean of learning ease on independent learning is insignificant (path coefficient = 0.086,  $t = 1.642$ ,  $p > 0.05$ ). Therefore, H<sub>2</sub> and H<sub>4</sub> are supported and H<sub>6</sub> is not supported. Jenkins (2007) rationalize that participation in online discussion forum seems to particularly enhance the development of the competency of “collective intelligence”, the ability to pool knowledge and compare notes with others toward a common goal, which makes learning easier. Collaboration through online forum encourages learners to move to the higher levels of cognition made possible by the intensity of exchanges in arriving at a consensus (Geer, 2005). The collaborative nature of online forums shifts the focus of literacy and knowledge from an individual learner to a community of learners. The independence of one learner over the other is uncertain. It is also impossible to ascertain the extent to which the contribution of an individual learner is his actual intellectual capacity when there are no limitations to knowledge sharing in this context. Since the lines are blurred between the individual’s contribution and the group’s collaborative contribution, it is thus possible to see why learning ease does not influence independent learning. Students’ reliance on their peers and instructor for answers potentially reduces their individual engagement in structuring their very own thought processes and solving problems on their own.

#### **4.0 Limitations of Study**

There are areas in which the research can be further improved. Firstly, the rather small sample size of 113 respondents may affect the accuracy of the estimations and its consequent implications on student learning based on the percentage of margin of error and confidence level. Secondly, this is not a cross-sectional study that encompasses students from different levels of study.

As the sample is focused on business students from the foundation programme, it remains to be seen if using online forums as a learning platform would have the same impact on undergraduate and post-graduate students. Thirdly, the conceptual framework was validated using sample data gathered from one target institution of higher learning in Malaysia. This limits the generalizability of the results.

## 5.0 Conclusion

In computer-mediated instructional design, there is an increasing focus on facilitating human interaction in the form of online collaboration, virtual communities and instant messaging in the blended e-learning system (BELS) context (Graham, 2006). In order to facilitate interaction among students, collaborative learning, learning environment and social interaction are important precursors of beliefs about using an online discussion forum. The findings in this study corroborate the influence of online forum on student learning, particularly active learning and independent learning. Learning experience, learning satisfaction and learning ease achieved from using online forum are shown to influence how a student processes and retains information. Learning experience and learning satisfaction gained from using an online forum influences both active learning and independent learning. Previous studies indicate that instructors' timely response significantly influences learners' satisfaction (Arbaugh, 2002; Thurmond et al., 2002). When students face problems during discussion in online forums, prompt and timely assistance from the instructor encourages them to learn continuously. A boost in learning satisfaction leads to a better overall learning experience. However, the influence of learning ease displays mixed results whereby learning ease influences active learning but not independent learning. This means independent learning is not promoted with the use of online forum. This could be attributed to the collaborative and discursive nature of online forums that influences students to rely on each other to learn. Moreover, in terms of their influences on independent learning, learning experience is tested to be more critical than learning satisfaction. The learning experience provided by online forum help more students learn better by placing them in an intellectual environment that encourages effective, thoughtful and equal participation from all comers (Althaus, 1997), which could supersede learning satisfaction. Future studies would include testing other independent variables of online forum such as provision of feedback and instructor's interference on student learning. The impact of online forums on dependent variables such as learning styles (visual, auditory and kinesthetic), experiential learning, domains of learning (cognitive, psychomotor and affective) can also be explored. It would be interesting to examine the variables that effect learning satisfaction as an extension to the current study.

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