

# Intuited the Usefulness of an Asynchronous Online Discussion in a Course Management System among University Students in Hong Kong

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**Abstract:** An asynchronous online discussion in a course management system is widely adopted in higher education. Despite adopting its pedagogical strengths, students did not engage much in the activity. This study employed the technology acceptance model as a theoretical framework to probe the effectiveness of the adoption in enhancing students' learning experiences. Two research questions about how students intuited an asynchronous online discussion in a course management system were formed based on a hypothesis that students did not believe it was useful in their learning. Data were collected from semi-structured interviews among university students in Hong Kong. This study found that while informants did not perceive the discussion useful for their learning, their perceptions were mediated by way of its practicing, students' learning strategies and socially desirable behaviour. One significant contribution of this study is to unveil that socially desirable behaviour could mediate the effectiveness of educational technology in enhancing learning experiences. This study called forth educators to consider the social context in which students are situated when adopting a pedagogy. This study's findings can have significant implications for education policymakers to launch appropriate education reforms to enhance teaching effectiveness. It also constitutes a theoretical implication for the technology acceptance model.

**Keywords:** asynchronous online discussion, course management system, technology acceptance model, usefulness, higher education

## 1. Introduction

A collaborative approach is one of the educational beliefs put forward to enhance students' learning experiences. Meanwhile, discussion can be understood as an "effort of a group of individuals who talk informally together in order to solve commonly recognized problems or to arrive at an understanding of values" (Walter & Scott, 1968, p. 186). Thus, a discussion is justified as one of the pedagogies in achieving collaborative learning (Dietz-Uhler & Lanter, 2012; Sawyer, 2004; So, 2009). In higher education, a discussion has been widely adopted. Nonetheless, owing to various constraints, an asynchronous online approach is a common way of conducting discussion, especially through a course management system (CMS) such as Canvas, Blackboard, Moodle and former WebCT. As an educational technology, adopting an asynchronous online discussion in CMS offers a computer-mediated platform "for learning, thinking and growing emotionally as well as cognitively" (Papert, 1980, pp. 17-18). An asynchronous online discussion in CMS is also consistent with the proclaiming that instruments such as computing technology can facilitate learners to construct knowledge collaboratively (Ackermann, 2001, p. 5; diSessa, 2000, p. 4).

Driven by the aforementioned belief, students have always been expected to learn, cooperate, and mutually construct knowledge through participating in an asynchronous online discussion in CMS (Oliver, 2001, pp. 49-50). Much research concerning an asynchronous online discussion as collaborative pedagogy has been done. The following literature reviews are just some of the major previous studies. For instance, to understand the way of employing technology in helping collaboration, Nachmias et al. (2000) researched 115 postgraduate students in Israel (p. 94). Regarding an asynchronous online discussion, the study pointed out that adopting this technology could increase students' participation and collaboration (Nachmias et al., 2000, p. 100).

Liu et al. (2014) studied the effectiveness of an asynchronous online discussion in helping students' reading skills. Through collected data from 110 primary school students in Taiwan, Liu et al. (2014) discovered that the adoption of an asynchronous online discussion enhanced students' performance in reading skills (pp. 231, 243). In addition, they further pointed out that time for learning and discussion was an issue in mediating students' performance (Liu et al., 2014, p. 244). It informed this study that, apart from adopting technology in achieving collaborative pedagogy, the way adopts the technology of the pedagogical activity is also one of the considerations as it could be a factor in mediating students' learning outcomes.

Interested in knowing the way technology helps students' learning, Nicholas and Ng (2009) looked into the interactions among 32 Australian secondary school students within an asynchronous online discussion in Moodle (pp. 305, 309). While students actively participated in the discussion, the study found that only a few students concretely learned from the activity (Nicholas & Ng, 2009, pp. 318, 320). In addition, the study failed to recognize cooperation among students in the discussion (Nicholas & Ng, 2009, p. 318). It is an important message to this study as students' participation in collaborative pedagogy, like an asynchronous online discussion, is not equivalent to their collaboration.

Other researchers also reached similar findings. For example, Moallem (2003) surveyed 24 postgraduate students targeted at understanding students' feedback on the design of an asynchronous online course in WebCT (p. 89). Concerning an activity of an asynchronous online discussion in the course, Moallem (2003) claimed that, in general, students' participation decreased over time (p. 93). In addition, students tended to participate more in discussions requiring tackling problems than collaboration (Moallem, 2003, pp. 94-95).

What is more, with a view of looking into the effectiveness of collaborative learning across three academic disciplines within and beyond Blackboard, Ng et al. (2012) launched research among 148 undergraduate students in Hong Kong (p. 420). The study pinpointed that, instead of using a discussion forum on Blackboard, students communicated more directly in a physical setting (Ng et al., 2012, p. 423). These findings further informed this study to question the effectiveness of collaborative knowledge construction within pedagogy and the capability of CMS as a technology in achieving collaborative learning.

The author agreed with the studies that showed asynchronous online discussions in CMS often produced unexpected outcomes. The author acted as a tutor at a university in Hong Kong for several years and was responsible for tutoring an undergraduate course on liberal studies. The course required students to participate in an asynchronous online discussion in CMS. One of the intentions of the activity was to enhance students' cooperative learning through mutual challenges. However, students' engagement in the activity was not keen. Many students just copied something from the Internet, while some just responded perfunctorily. Besides, few even made unintelligible contributions by typing "hello". While the above major literature outlined different concerns over adopting an asynchronous online discussion as collaborative pedagogy, they supported an argument from Swan (2005) that an understanding between students and asynchronous online learning is still inadequate (p. 19). Students had their pedagogical views. Since previous research rarely focused on students' interpretations and perceptions towards the pedagogy, this study was thus proposed to bridge this research gap. This study investigated a research problem of whether students perceived an asynchronous online discussion in CMS as useful for enhancing their learning performance. A technology acceptance model (TAM) was

acquired as a theoretical framework of this study because it was helpful, applicable and related to how an individual perceived and accepted a technology. This study furnishes academia with the necessary literature on perceptions towards pedagogy from students' perspectives. The importance of this study lies in the prospect of enhancing students' learning experience after educators reflect on the efficacy of their pedagogical approach. Though this study was conducted in the Hong Kong context, it is relevant to the international educational communities since an asynchronous online discussion is frequently adopted in higher education globally.

In the following, this article will first examine an asynchronous online discussion and TAM. This article will then introduce the research question and methodology of this study. After that, this article will overview general practices of implementing an asynchronous online discussion, and then present the findings and discussions. Before drawing a conclusion, the implications and limitations of this study will be proposed.

### *1.1 An Asynchronous Online Discussion*

Beyond facilitating collaboration, an asynchronous online discussion also offers different pedagogical strengths, which include enhancing critical thinking, reflective thinking, and communication.

As Buraphadeja and Dawson (2008), Jacob (2012), and Schindler and Burkholder (2014) propounded, an asynchronous online discussion enhances students' critical thinking. Students can choose their convenient time and place to participate in the discussion as it does not operate in a real-time mode. Because of the nature of time-delaying, theoretically, students can afford much time to locate or review materials, organize information, and examine argumentations thoughtfully before posting a new message or responding to others. All these experiences help students to polish their competency in critical thinking.

Besides, as Beckmann and Mahanty (2016), Cruz and Anderson (2021), and Plešec Gasparič and Pečar (2016) averred, an asynchronous online discussion enhances students' reflective thinking. When participating in the discussion, students are likely to receive feedback from their classmates or professors. However, the feedback is not always positive or encouraging, with some comments beyond the students' expectations. Similarly, students can have various thoughts on the same topic. When those comments or different views are valid and constructive, students can review their original positions and re-examine whether they need to take a more comprehensive perspective on the issue. The experiences of different challenges render students to develop their competency in reflective thinking.

In addition, Al Tawil (2019), Calderon and Sood (2020), and Vess (2005) affirmed that an asynchronous online discussion enhances students' communication skills. There are prerequisites for participating in the discussion. It demands students' competency in language, reading, comprehending and writing. In other words, students have to know how to express themselves in writing properly and make sure others can correctly and fully interpret their meanings without much difficulty, and vice versa. Even when communicating with others online, students are also expected to demonstrate certain etiquette that includes courtesy and respect. Students' experiences in an asynchronous online discussion assist them in refining their communication skills.

In general, an asynchronous online discussion can be constructed and implemented in two different styles; educator-oriented and student-oriented. In an educator-oriented style, the educator is usually responsible for designing a topic or a task related to the teaching topic. Students are then instructed to participate in an asynchronous online discussion, either working individually or in group, to express their opinions towards the topic or tackle the task. Technically, this style assures academic quality, simplifies administration, and enables students to follow and meet all the instructions easily. Yeh and Lahman (2007) announced that proper adoption of the style could effectively enhance students' learning (p. 697). For a student-oriented style, students are told to take the initiative and share their views or difficulties over a topic. This style enriches students' learning motivation as they can enjoy greater autonomy in deciding the discussion topic. Skinner (2009) stated that intrinsic motivation was the key to driving students' participation in the discussion (p. 97). For both styles, students are expected

to participate in the discussion within a certain period. Regardless of the styles, intervention from educators varies, which partly depends on the educator's availability and pedagogical concern. On the one hand, intervention from the educator facilitates students' discussion and maximizes the learning outcome of the activity (Darabi et al., 2013, p. 239). On the other hand, the intervention discourages students from participating in the discussion since they may feel uncomfortable with the presence of their professor (Hew et al., 2010, p. 583). To address the concern, Hew (2015) advocated arranging student moderators to obfuscate hierarchical discrepancy.

While students' participation in an asynchronous online discussion can be affected by the existence of others, like their professors, their participation can also be shaped by how they perceive the technology. In this regard, TAM proposes a penetrative and straightforward explanation.

## *1.2 Technology Acceptance Model*

To anticipate and describe one level in adopting information and communication technology, Davis (1986) proposed TAM under inspiration from the Theory of Reasoned Action. TAM focuses on two perspectives, namely, the perceived usefulness of technology and the perceived easiness of using technology (Davis, 1986, p. 24; Davis et al., 1989, p. 983). Perceived usefulness of technology generally refers to one anticipation of improving performance resulting from using the technology. In this study, improving performance was interpreted as enhancing learning experiences, motivations or outcomes resulting from using the technology. On the other hand, perceived easiness in using technology briefly pointed to an evaluation between the level of difficulty in using the technology and the expected mediated performance resulting from using the technology (Davis, 1986, p. 26; 1989, p. 320). Both the perceived usefulness of technology and the perceived easiness of using technology could anticipate and describe one in accepting information and communication technology.

Nonetheless, as Davis (1989) further explained, people tended to value the perceived usefulness of technology more than the perceived easiness of using technology (pp. 333-334). In other words, if a person believed that using certain information and communication technology could enhance his performance, he would likely adopt the technology even though learning how to handle it was difficult. In addition, both the perceived usefulness of technology and the perceived easiness of using technology could be influenced by other factors (Davis et al., 1989, p. 985). Scholars like Hassan and Geys (2016), Lu et al. (2005), Marangunić and Granić (2015), Money et al. (2011), Shittu et al. (2011), and Šumak et al. (2011) denoted that because of its simplicity, TAM was one of the most commonly adopted measures in anticipating and describing an acceptance of information and communication technology. There are many studies on TAM, such as El-Gayar et al. (2011), Huang et al. (2012), Jabeen et al. (2015), Joo et al. (2014), and Meso and Liegle (2005), conducted all over the world. Particularly, many types of research deployed TAM and conducted various studies on the degree of acceptance of different kinds of information and communication technologies in higher education in Hong Kong.

Many researchers employed TAM to investigate an asynchronous online discussion. For example, to understand the factors shaping students' utilization of an asynchronous online discussion, Aucamp and Swart (2015) interviewed 30 computer sciences students in a South African university (p. 126). By confirming the validity of the perceived easiness of using technology and the perceived usefulness of technology, Aucamp and Swart (2015) declared that TAM accounted for students' utilization of the discussion (p. 134). Since this study also focused on an asynchronous online discussion, Aucamp and Swart (2015) reinforced the adoption of TAM as a theoretical framework for this study.

To discover an effective interactive environment in an asynchronous online discussion between the professor and the students, Lee et al. (2011) collected 59 valid questionnaires from business students in a British university (pp. 1432, 1435). Through the lens of TAM, Lee et al. (2011) ascribed the ineffective interaction in the discussion to the students' low perceived usefulness of the technology (p. 1436). Meanwhile, Camarero et al. (2012) applied TAM to scrutinize students' usage of an asynchronous online discussion by analyzing data from 107 business students in a Spanish university for two academic years (pp. 573-574). Camarero et al. (2012) reported that students' perceived usefulness of technology did not directly shape students' usage of the discussion (p. 579). Camarero et

al. (2012) and Lee et al. (2011) informed this study that students' perception of an asynchronous online discussion and their participation in it could be mediated by elements other than the perceived easiness of using technology and the perceived usefulness of technology.

Nevertheless, the pedagogical strengths of an asynchronous online discussion, such as enhancing critical thinking, reflective thinking and communication, are likely to become unachievable utopian imaginations when students do not participate. However, TAM offers educators a reliable measure to quest for better understanding. Apart from receiving a few criticisms, TAM has been widely adopted as a simple and effective way to look into perceptions of and attitudes towards technology. Therefore, it was more appropriate and relevant to this study. TAM was particularly helpful in mining, extracting, distilling and condensing a better understanding on intuited the usefulness of an asynchronous online discussion in CMS in Hong Kong. For instance, students' perceptions of CMS could be mediated by the difficulties encountered from their previous experiences in using CMS. In addition, their perceptions towards CMS could be shaped by their perceived accomplishments and acquisitions obtained from earlier usages. Thus, TAM was adopted as a theoretical framework for this study.

## **2. Research Hypothesis, Research Question and Methodology**

Based on the above portrayal, a research hypothesis was that students did not believe an asynchronous online discussion in a course management system was useful in their learning. Driven by the above denotations, this study formed two research questions. First, how do students perceive an asynchronous online discussion in CMS? Since students' acceptance of an asynchronous online discussion in CMS can shape their corresponding perceptions, it leads to the second research question: in what way did TAM explain the intuition?

This study translated students' intuited usefulness of an asynchronous online discussion in CMS as whether students intuited help for their knowledge construction in the courses after participating in an asynchronous online discussion in CMS. The captioned research questions empowered this study to investigate how students intuited the usefulness of an asynchronous online discussion in CMS and probed the rationales behind their perceptions.

This study concerned perception, which could be both subjective and personal. In other words, students constructed their different perceptions on their own. Impelled by the ontological position, the author believes that objective meaning does not exist. Therefore, instead of adopting the quantitative research approach, the qualitative research approach was more appropriate for this study as it allowed the author to interact, understand and interpret the uniqueness of different individuals directly. In other words, to better understand students' intuited usefulness of an asynchronous online discussion using CMS, the author had to directly contact, interpret, learn, interact and construct with students. Through conversations and interactions with students, the qualitative research approach provided in-depth understanding, which constructed more sociological imaginations over students' perceived easiness and usefulness in using CMS and their perceptions of and attitudes towards it. The author's ontological position also supported the employment of semi-structured interview as a data collection method in this study as it empowered the author to probe into and understand the way informants construct their intuited usefulness of an asynchronous online discussion from their dictions (Byrne, 2012, pp. 209, 215). An example of the directional questions asked in the interview was, how do you describe the collaboration with your classmates in CMS?

Concerning the background of the target interviewee, Ballantyne et al. (1999), Neumann (2001) and Smeby (1996) suggested that, compared with other academic disciplines, social sciences tended to utilize discussion frequently as part of the pedagogy. Concerning the required number of participants for the interview, Saunders and Townsend (2016) proclaimed that no consensus had been reached on this area. For instance, Marshall and Rossman (2016) suggested one informant is adequate. Creswell (2007) proposed three to five participants, while Saunders (2012) believed in four to twelve interviewees. Nonetheless, Adler and Adler (2012) pinpointed that a fixed answer is unavailable.

After considering all of the above, with ethical approval from the research committee in one of the universities in Hong Kong, the author targeted to approach social sciences students from the departmental common room to attend the semi-structured interview. When the author started showing up in the room, the author considered himself an outsider to the students. To obscure the heterogeneity, the author needed to create a trustworthy image (Robinson, 1994, p. 61). Before approaching the students, the author intentionally chose to silently present himself at a notable area and make himself conspicuous to all students in the room for more than a week. After that, the author began to randomly approach students who showed availability. In the end, four local full-time undergraduate social sciences students were recruited for the interview. They were born in Hong Kong and were native Chinese in the ages of early 20s. Three students were males, and one was female. No remuneration was offered to the interviewees. All students expressed their experiences participating in an asynchronous online discussion on Blackboard. All interviews were conducted in Cantonese, the mother tongue of all informants. The author secured informed consent from all interviewees. With their assent, all the interviews were audio-recorded while notes were taken simultaneously. The interviews lasted around one hour ten minutes to one hour twenty-four minutes. Interview data went through two phases of coding. Phase one sought to explore abstract ideas from the data, while phase two targeted to identify their connections (Saldaña, 2016, pp. 68-69). Since conversation analysis concerns social interactions, it was employed to analyze the data as it is consistent with this study's ontological and epistemological positions (Mondada, 2013, p. 33).

### *2.1 General Practices of Implementing an Asynchronous Online Discussion*

As suggested, all interviewees participated in an asynchronous online discussion. Even though their experiences were generated from different modules, three general practices of implementing the discussion could be identified. First, the discussion was assigned as a supplementary learning activity with the lecture. Conventional lecturing inside the classroom still played a dominant role in pedagogy. Students were required to attend a lecture every week, where knowledge was disseminated unilaterally. To consolidate the learning experience, students were told to participate in an asynchronous online discussion before and/or after the lecture. Second, under most circumstances, students were compulsory to participate in the discussion since it was graded and denoted as a part of the module requirements. However, the discussion usually constituted a minor proportion of the assessment criteria. Third, the professor usually took an inactive role in the discussion. In usual practice, the professor assigned a topic and instructed students to participate in the discussion beyond the lesson. Although the professor and the teaching assistant may monitor the discussion backstage for assessment purposes, they did not always intervene in the discussion partly because they were fully engaged in other activities. Student moderators could not be found in the practice partly attributed to a belief that students could not exert dominance over their peer gradings. In other words, an asynchronous online discussion was constructed and implemented in an educator-orientated style with minimal intervention from the professor.

## **3. Findings and Discussions**

All interviewees indicated that they found Blackboard easy to use. Thus, the issue of difficulty failed to shape students' intuition in an asynchronous online discussion in CMS. In line with the proclamation that people weigh the perceived usefulness of technology more important than the perceived easiness of using the technology, findings and discussions were focused on the former (Davis, 1989, pp. 333-334). Even though a student expected it initially, this study revealed that they did not perceive an asynchronous online discussion on Blackboard as useful for their knowledge construction. Students' intuited usefulness of an asynchronous online discussion was mediated by way of practicing the discussion, students' learning strategies and socially desirable behaviour. The following is a brief account with pseudonymous student names.

Among all students, Howard was the only one who indicated that he originally perceived an asynchronous online discussion in Blackboard as useful for interacting with his classmates and constructing more knowledge to improve his academic performance. He expressed that:

My original expectation is that (through this activity) I can realize my shortcomings from other students and know how to improve. Even though the presentation is over and the result of this seminar is largely finalized, I think I can still learn something from reading these (comments) to improve my presentation skills. .... But so far maybe my classmates are very nice. The comments that they left are rather positive, how good and how well it is. And that makes me unable to read the things that I am expecting. In this case, I pass those comments very quickly and have a glimpse only. .... (F)rankly, the help is not that big. The comment is rather unidirectional. We have completely no response when students give us comments. No interaction exists, and actually, .... the learning effect is not that big and obvious. .... If more interaction exists, it can actually serve the purpose of learning. But the discussion becomes rather unidirectional and formalization. When we regard it as homework, its effect cannot be unleashed. (Howard)

Howard intended to regard the discussion as a useful platform to highlight and rectify his academic performance. His wish vanished as he failed to experience a genuine and meaningful interaction with his classmates in constructing knowledge. Even though an asynchronous online discussion in CMS theoretically provided a technology and platform for facilitating collaboration, such collaboration did not occur. It confirmed the study from Nicholas and Ng (2009) that collaboration was difficult in a discussion. Apart from considering the emotional reactions of their classmates, reasons for having no real collaboration in knowledge construction among students could also be attributed to the way of practicing the discussion.

Actually..... I think the effectiveness (of discussing with classmates in Blackboard) is not that big. Because it has a deadline, it requires you to complete (the activity) within a certain period. Maybe not everyone remembers to do it. Also, the scope of discussion is rather narrow. Because, after all (the discussion) focuses on learning within the university, which makes the discussion scope not wide enough. (Content of) discussion is more or less the same. .... Actually, I think the effectiveness is also not big. Because, after all, it (the discussion) still focuses on the same topic. Our learnings can cover many areas, scopes and topics. If the discussion focuses only on a single topic, actually it cannot help learning for the whole course. (Dickson)

Because of the compressed teaching schedule and the lecturer's preference, the pedagogy of an asynchronous online discussion in CMS is always practiced similarly. Under this arrangement, as Dickson suggested, room for students to collaborate and interact with classmates is inadequate. Because of the constraints in time and coverage, he perceived an asynchronous online discussion in CMS was not useful for his knowledge construction. The finding was in line with Singh et al. (2010) and Vovides et al. (2007) on the incapability of CMS to accommodate collaboration. Practicing an asynchronous online discussion in CMS not only directly mediated students' perceptions but also partially affected the fruitfulness of the discussion, which, in return, shaped their views towards its intuited usefulness.

This online platform, I think, is not particularly attractive. .... In an online discussion, we may read some supplementary information that we may not consider in a lesson. And that contributes to so-called a bit more knowledge. But, .... I don't think the so-called knowledge is so important that I have learned a lot after participating in the (asynchronous online) discussion. (Helen)

If I have to read others, I can read papers from Google Scholars, which is better than reading the so-called opinions from those classmates. (John)

The above showed students perceived an asynchronous online discussion in CMS as not useful and reflected their disparaging attitudes towards it. The ironic assertions of "so-called knowledge" and "so-called opinions" narcissistically and effectively portrayed students' negative comments and positions towards collaboratively constructing knowledge with their classmates over an asynchronous online discussion in CMS. On the one hand, it was the result of the way of practicing an asynchronous online discussion which gave students inadequate time to consider, locate and construct knowledge

together in an asynchronous online discussion of CMS. It verified the proclaiming from Liu et al. (2014) that time of learning and discussion could affect students' performance. On the other hand, the barren content of the discussion not only enhanced students' perception of an asynchronous online discussion of CMS but also proved and consolidated the learning strategies that John has already coped with.

I think the whole thing is meaningless. I think the basic assessment forms like PowerPoint and examinations already help the most in learning. An examination can (motivate you to) study. (Doing stuff) like the forum is, actually, copy this and copy that. Sometimes you read a paper, copy this, copy that and (your posting) is just copied (from others). It is trouble if you ask me to find some ideas and form scholarly viewpoints. .... I don't think I learned any new knowledge on psychology after participating in the forum activity or typing something over there. .... Of course, I think it is trouble and wastes a lot of time. (John)

The above expression proposed that the nature of John's learning strategies tended to be self-reliance. John was likely to opt for using his efforts in studying learning materials and locating information rather than cooperating with his classmates. Therefore, John perceived an asynchronous online discussion in CMS as time-wasting and not useful since he did not prefer collaborating and constructing knowledge with others. This finding confirmed a lemma from Kim (2005) that the usefulness of collaborative pedagogy failed to mediate students' learning strategies (pp. 16, 18). Students' learning strategies, however, link with their knowledge construction and are associated with their academic performance. John further elaborated on this point as follows:

(T)his stuff (an asynchronous online discussion in CMS) is not that helpful. It is because most of the time, frankly speaking, even though the course required you to respond, basically, we express ourselves one by one. In theory, the course wants us to comment on others after someone responds. But most of the time, we just write something and upload it. We will not especially read what others have written. That is the main reason. Most of the time, the forum is not the only activity in the course that counts marks. You also have a mid-term; examination, and I do not want to waste so much time reading others' postings. I just write and directly upload to the (discussion) forum (in CMS). I do not want to waste my time reading others' postings. (John)

However, the richness and usefulness of discussion and effectiveness of knowledge construction were shaped by the amount of effort students were willing to spend on an asynchronous online discussion in CMS. After pragmatic calculation, John decided it was not worth spending so much time on the discussion. Instead, he chose to exercise more effort and targeted earning more marks from other assessment activities by using his adapted learning strategies. Nonetheless, John's attitudes and decisions mirrored a common phenomenon in Hong Kong. Chen and Wong (2015) and Wong (2017) declared that academic performance was vital for Hong Kong students as it affected whether they could earn a university qualification. Since having a university qualification is generally regarded as a socially desirable behaviour and has been translated as a way to pursue an easier life in Hong Kong, it explains why John wanted to keep his rewardable learning strategies. In other words, John did not perceive an asynchronous online discussion in CMS as useful because it could not help him earn the university qualification he had longed for.

As the students did not perceive an asynchronous online discussion in CMS as useful, they were inclined not to participate in it especially when their participation was not graded. However, as stated, most of the modules required students to participate in an asynchronous online discussion to fulfill a part of the assessment criteria. Regardless of the students' perceptions of the discussion, they had no other option but to participate in it under the existing bureaucratic and hierarchical settings. Driven by pragmatic calculations, the students deployed their strategic participation in the discussion. From the above delineations, the students tended to exercise their minimal time and effort in participating in the discussion as they trivialized or failed to recognize its pedagogical implications. For instance, the students were unwilling to prepare for the discussion seriously. They wrote the messages in lackadaisical and slapdash manners or even just pasted materials from certain sources. Besides, some students targeted to satisfy the number of requirements for their participation in the discussion only. The importance of participating in the discussion was such a low priority to some students that they even



attained the requirement at the very last minute. In addition, the students chose not to read or simply ignore the messages posted by other classmates. Overall speaking, the students did not regard the discussion as a collaborative learning opportunity. Instead, students treated the discussion as trivial homework and their mindset of completing it with minimal effort was indubitably reflected from their deployed strategic participation in there. The deployment further embodied students' thirst for credentials. In this regard, based on the above denotations, this study unveiled that socially desirable behaviour was crucial in shaping students' intuited usefulness of an asynchronous online discussion in CMS.

In short, as most interviewees did not find an asynchronous online discussion in CMS useful for their learning, the author could not reject the research hypothesis of this study. The first research question was also addressed simultaneously. As aforementioned, interviewees did not find the discussion useful in advancing their academic performance and outcomes. The finding of this study contradicted a proclamation from Liu et al. (2014) and Nachmias et al. (2000) but was in line with those of Lee et al. (2011) and Nicholas and Ng (2009). To answer the second research question, TAM provided a feasible interpretation explaining the intuition and the associated behaviour. Since students did not perceive an asynchronous online discussion in CMS as helpful for improving their learning experience or academic outcomes, they tended not to regard the technology as useful. In conformity with TAM, students should disregard the discussion by unaccepting the technology of an asynchronous online discussion in CMS. Nevertheless, due to the curricular arrangement, students had no alternative but must participate in the pedagogical activity. Under pragmatic consideration, students tended to compromise with reality by taking a perfunctory approach and spending minimal effort to satisfy the basic requirements of the activity. That explained why the interviewees did not want to waste time and effort reading the "so-called knowledge" that constituted no perceived contribution to their academic outcomes. This finding was consistent with Camarero et al. (2012). On the one hand, it further verified the research hypothesis of this study. On the other hand, it also approved Aucamp and Swart (2015) that TAM is valid in interpreting intuition and the associated behaviour.

### *3.1 Implications*

As aforementioned, socially desirable behaviour can mediate students perceiving collaborative pedagogy, such as an asynchronous online discussion. In a sense, the collaborative pedagogy of an asynchronous online discussion is not and should not, just a simple combination of technology and educational belief. In the end, education should be student-oriented. Thus, educators must consider the social context in which students are situated when practicing collaborative learning and incorporating particular educational technologies into pedagogical activities. For instance, educators can consider increasing the contribution of the compulsory asynchronous online discussion to a more reasonable proportion towards the whole assessment criteria. Besides, students who take the initiative in participating in voluntary and meaningful discussions should deserve bonus marks. Whenever possible, educators are recommended to take a more active role in monitoring and intervening in the activity. By doing so, on the one hand, educators can utilize the discussion as an alternative platform to disseminate knowledge instead of heavily relying on conventional lectures. On the other hand, students are likely to be more enthusiastic in participating in the discussion as they realize their active participation are likely to link with better academic outcome in the module. On top of the above mentioned, this study advocates further research on related areas like how socially desirable behaviour can be changed, any cultural and gender differences, how educators can better integrate the mindset into collaborative pedagogy and the like.

What is more, this study also constitutes an important implication for education policymakers. This study disclosed students' learning strategies and socially desirable behaviour could shape students' intuited usefulness of educational technologies such as an asynchronous online discussion in CMS. Nevertheless, educators may not be privileged to enjoy autonomy when adopting educational technologies. They may be constrained by many issues such as limited resources, institutional arrangement or even education policies of a place. For instance, when the utilization of educational technologies becomes one of the criteria for contract renewal, some educators may be inclined to incorporate educational technologies with their pedagogies regardless of their applicability. Eventually,

their decisions to adopt educational technologies may not be able to reflect the best interest of students' learning. Education policymakers are therefore recommended to carry out appropriate educational reforms to delegate more authority and resources to educators so that they can have adequate room and time to attain various educational goals for the sake of their students.

Theoretically, this study proposes further development of TAM. As mentioned earlier, TAM focuses its attention on technology by highlighting the perceived usefulness of technology and the perceived easiness of using technology (Davis, 1986, p. 24). This study illustrated that an asynchronous online discussion in CMS failed to help students enhance their learning experience or motivation. However, the students continued to participate in the asynchronous online discussion with minimal effort to meet course requirements. Instead of the perceived usefulness of technology, the pragmatic calculation of the students in using the technology was attributed to the result-oriented culture shared by the majority of Hong Kong students. It shows that the external environment can also shape one's perception of technology. As Bagozzi (2007) declared, diversity can exist between one's perception and the deed of a technology (p. 244). To better understand their relationship, therefore, this study suggests TAM to incorporate one's external environment into consideration when understanding how a person perceives a technology.

### *3.2 Limitations*

One of the potential limitations of this study is on the practice of implementing an asynchronous online discussion. As mentioned, students' experience and their perception towards an asynchronous online discussion in this study were mainly implemented under minimal intervention from the professor and/or the teaching assistant. It is encouraged to conduct further research if socially desirable behaviour will apply and shape students' perception towards an asynchronous online discussion when it is implemented under different styles. Another potential limitation of this study is its sampling. Because of several impediments, the study only included social sciences students to attend the semi-structured interview, and they were all Chinese. Students with different training and cultural backgrounds may generate different discussions. Intuited the usefulness of an asynchronous online discussion in a course management system from other disciplines and ethnicities deserve further studies.

## **4. Conclusion**

To conclude, findings from this study unveiled that employing an asynchronous online discussion technology may not necessarily accomplish pedagogical desires. Instead of merely focusing on whether an asynchronous online discussion is implemented under an educator-oriented style or a student-oriented style, more attention has to be drawn to how students perceive technology. To facilitate students having an atmosphere to construct knowledge collaboratively, educators should consider the social and cultural context in which students are situated. Otherwise, students are likely to deploy the technology with their interpretations. While more investigations on areas concerning socially desirable behaviour are needed, education policymakers should launch education reforms and allocate adequate resources and authority to educators to empower them to achieve distinctive educational targets.

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