CHAPTER 2
LITERATURE REVIEW

2.1 Theoretical Framework

2.1.1 Perceived Usefulness of Technology

Perceived Usefulness refers to how a user believes that using a particular tool will be beneficial for their overall work (Davis, 1989). This is based on Technology Acceptance Model (TAM), and is built to understand user acceptance processes, providing insights to design the optimal implementation of information systems. These information systems in education can be implemented as Learning Management Systems (LMS) that this research will be focusing on. Understanding TAM also enables the developers of said systems to evaluate success or failure of existing systems before proposing new ones prior to their application (Davis, 1985). TAM has also been used in order to observe the effect on perceived usefulness of technology on learners' self-regulated learning to achieve learning goals, which the research found that the higher students' perceived usefulness of technology is, it will have positive impact on students' self-regulated learning (Supriyono et al., 2024).

During the COVID-19 outbreak, technology adoption rose with the rise of online meeting platforms such as Google Meet, Zoom, and Skype as people and governments had to face the various risks and fears of meeting in real life (Al-Maroof et al., 2020). This means technology is more accepted when there are meaningful obstacles, and its perceived usefulness were apparent. Perceived usefulness itself has numerous aspects according to Davis, such as tasks would be difficult without the tool in question, how the tool affect user's control over their work and performance, how the tool address user's needs and enables them to complete more tasks, as well as improving their quality of work. Although in the case of this study, the researcher will be focusing on how Canvas makes students' tasks easier and increases their productivity as they act as stands in for the other aspects and are more prominent among students based on pilot interviews. The two aspects are detailed below:

1)   Making task easier

The degree of which users believed that using a particular technology would make accomplishing tasks simpler. In educational context, this relates to how an information system, like an LMS, helps students in their learning experience more effectively by allowing students to download materials, and access it anytime (Santiana et al., 2021).

2)   Increasing productivity

How users believed that using a particular technology impacted their ability to produce more work of better quality with the same amount of time. Productivity especially in education can also be defined as the synergy between students' active participation in purposeful learning activities and the progress they achieve across a variety of desired outcomes (Kuh & Hu, 2016). In this research in particular, TAM is used as the framework to assess students' perceptions of Canvas, as it is well-suited for understanding the cognitive dimentions of technology acceptance, which are essential in determining why students perceive Canvas as useful. However, TAM does not explicitly account for learning motivation, an important factor in conjunction with perceived usefulness of technology in education. This is the reason behind integrating a separate framework to assess students learning motivation, which in turn gives the insight on the relationship between students' perception on Canvas and their learning motivation.

2.1.2 Learning Management System

Learning Management System (LMS) is beneficial to students, teachers, and academic staff in order to improve the teaching-learning experience. A good LMS can provide an inclusive learning environment with consistent information regarding students' performance, and enable students to collaborate with each other (Bradley, 2020). Nowadays, LMSs are more advanced and compatible with existing educational systems. They are selected based on their ability to enhance the lecturers' awareness and skills of modern technology; boosts students' engagement and collaboration in learning; reinforce students' academic honesty; create more opportunities for students' involvements and responsibility in distance learning courses; and improve the technical operators' competence (Aldiab et al., 2019).

Because LMS are online platforms that can be accessed from anywhere at any time, the flow of information within it can boost academic improvement. However, there are some obstacles in adapting LMS among universities, this includes high cost of technology, poor technological infrastructures, incorrect decision by the institutions, and how the faculty themselves view LMS as beneficial, and thus take effort to utilise it. Apart from institution issues, students' motivation to use LMS is also considered as vital, as it has been found that students' intention to use said platform increased after they realized the benefits of using an LMS such as the convenience an LMS provides, simple interface, the ability to view feedback in real time, and LMS acts as a hub of resources (Egorov et al., 2021).

2.1.3 Canvas LMS

Canvas was launched in 2011 by the company Instructure, with the focus of cloud-based, open source LMS functionality that can be accessed easily from any device. The aim of Canvas is to improve the practice of learning in-person, hybrid, or fully online by serving as a hub for lecturers to post pedagogical materials to all classrooms. Canvas is also integrated with several technology partners including Google Classroom, Microsoft Teams, Zoom, and Adobe (Instructure, n.d.). Canvas featured simple yet robust interface for lecturers and students to access, some of these features are the 'Dashboard' menu, where students can view the courses that they enrolled in, with 'To Do' list on the right-hand side making it easy for students to catch up on updates such as unfinished modules and tasks.

In the 'Calendar' menu, students can check deadlines and upcoming activities of a particular course, while in 'Inbox' students are able to view messages from others in a particular course and groups within courses. In the 'History' menu, students are able to review the modules that they have accessed throughout all courses they enrolled in. But the most important is the 'Course' menu, in which students can access the courses they are enrolled in. Canvas can store past (concluded) courses, but the lecturers can also control which courses can still be accessed or hide them. There, students have the ability to browse modules within the courses, as well as accessing multiple aspects of them like the discussion boards,

quizzes, grades, assignments and people (fellow students) that are enrolled in the same course. Lecturers are able to prepare materials before the meeting such as by posting an introduction section with a syllabus, recording a video, or a PowerPoint presentation to show students what they will learn in that particular course going forward.

Lecturers are also encouraged to post materials each week to Canvas before class meeting begin to interact with students asynchronously, as they will have the opportunities to find out students' prior knowledge of the topic they will deliver. This is in line with Keller's (2010), model of confidence in learning motivation, as because the lecturers post their learning requirement to students, they will have the idea of what is expected from them. Providing evidence and examples of someone else's works also help strengthen students' confidence as they have clear goals in mind on how to progress.

Reflecting on the initial observations, the researcher have found that these functionalities of Canvas not only structured the learning process but also created a transparent and predictable learning environment. Students shared how this predictability allowed them to focus more on the content rather than the logistics of accessing materials. This aligned well with Keller's (2010) Relevance aspect, as clarity and well-defined study goal for students, seem to boost their motivation to learn. Also throughout the course, lecturers are able to track students' engagement, achievements, and share media. However, interaction is not one of Canvas' strengths as it offers little to no synchronous interaction. Students only use Canvas to view announcements and modules, as well as to submit assignments (CAO, 2021). This means to engage with students in a synchronous manner, lecturers need to use other platforms to interact with them such as Zoom or Google Meet.

In the context of the TELL course, the lecturers often post "Intermezzo" sections that students have to interact with before they unlock the materials for their next meeting. Here, the lecturers posed questions related to the topic they will deliver in the next meeting. Students can comment on them but cannot see other students' answers before they input their own. This way they are encouraged to be

creative and original with their responses. These "Intermezzo" modules have the ability to attract and keep students' attention to motivate them to continue learning, as when they are invited to think creatively, they actively make the effort to contribute (Keller, 2010). Students expressed that these interactive elements made the course feel more engaging and less monotonous. They appreciated the challenge and the opportunity to express their thoughts. This level of engagement and personal investment in the learning process is a testament to the effectiveness of a well-designed instructional strategies within Canvas.

Quizzes are also engaged with the aim of giving students "extra credits" for completion, but these quizzes can only be done twice before they are locked and record the highest score out of the two chances. Finishing quizzes like these can give students a sense of accomplishment, the satisfaction of being able to do something they were not able to before as well as testing their own knowledge can be gratifying for students and motivate them to achieve even more (Keller, 2010). It became evident that students found these quizzes particularly motivating, they enjoyed the immediate feedback and the opportunity to gauge their understanding in real-time. This aspect of Canvas seems to promote competitive yet supportive learning atmosphere, driving students to strive for better performance continually.

2.1.4 Learning Motivation

Students' learning motivation is the driving force for completing their academic activities, this includes their competence, control, interest, and relatedness to the social aspect of learning. Learning motivation can be influenced internally (biological, emotional, spiritual, or social), or extrinsically such as by reward, social approval, or appreciation (Filgona et al., 2020). Furthermore, Ryan & Deci (2000) defined intrinsic motivation as the activity done for one's own curiosity, satisfaction, enjoyment, and growth rather than instrumental reason affected by externally. They also defined intrinsic motivation as the relation between activities and how they are interesting for a particular person; while extrinsic motivation is the direct opposite of intrinsic motivation, people who are extrinsically motivated do activities not because of the enjoyment of the activity

itself, but rather, to pursue a separable outcome or even avoiding negative feedback. More specifically, according to Keller (2010) in his motivational design for learning, learning motivation is divided into four categories as follows:

1)   Attention

Attention refers to how teachers stimulate and maintain students' focus to a certain course or activities by avoiding boredom and stimulating students' interests and curiosity. As demonstrated by Wade & Kidd (2019), curiosity and prior knowledge are associated with enhanced performance in learning. In the context of learning, teachers can stimulate students' perception by setting up an optimal environment; posing questions to tap into their curiosity and prior-knowledge; and diversify the approach of the lecture itself, for example by mixing traditional theory lectures with group activities, discussions, etc. The perceived usefulness of Canvas contributes to this by providing a dynamic and interactive platform that keeps students engaged. Features such as enabling lecturers to post multimedia resources, quizzes, and discussion boards to help capture students' attention by making learning more engaging and avoiding boredom.

2)   Relevance

Relevance is how students perceive the course they enrolled in is relatable with their goals. This connects to how teachers set up goal orientation of their course so that students understand what is expected of them. Furthermore, college lecturers can also align their course goals for students to get a job and further increase their job performance. As relevance is one of the determining factors of learning motivation, lecturers must consider students' personal interests, long and short-term goals, as well as social and cultural backgrounds (Albrecht & Karabenick, 2018). The perceived usefulness of Canvas enhances Relevance by offering tools that align with students' academic and possibly career goals, such as by the easiness to access all the materials lecturer post from the beginning to the end of the course.

3)   Confidence

Confidence means to imbue students with the feeling of competence and trust in their abilities to complete tasks. This can be done with constructive feedback

by teachers to further make the students focus on understanding tasks rather than to please the lecturers themselves. The perceived usefulness of Canvas supports Confidence by appealing to students with Canvas' easy-to-navigate user interface, immediate feedback through quizzes, and a structured learning environment.

4)   Satisfaction

Students can get a sense of satisfaction by doing tasks that have a clear goal according to performance-oriented instruction so that they can use newly acquired knowledge and skills. Students who are intrinsically motivated can also make use of external motivation such as physical rewards (like certificates or trophies), words of affirmation, or public acknowledgement. The perceived usefulness of Canvas contributes to Satisfaction by offering a simplified task completion and progress tracking. Students also reported that they are often satisfied with how they are able to see how far they can test their own understanding of the course with challenging quizzes.

ARCS model have been implemented in designing an effective online class in higher education with the application of multiple platforms in relation to its individual factors, the result was noticeable improvements of students' performance and engagement levels as well as encouraging teachers to apply various teaching-learning approaches while paying attention to ARCS model as the framework (Maiti et al., 2023). This is in line with the review of the ARCS model by Fang et al. (2023), which stated that the theory has been used as the foundation for numerous instructional designs and empirical studies, especially in higher education contexts. Integrating the perceived usefulness of Canvas into the ARCS model demonstrates how technological tools can significantly enhance learning motivation by addressing ARCS individual aspects in detail. The use of the ARCS model is to complement TAM in order to understand students' learning motivation after finding out their perception of the platform. As mentioned prior, TAM has the strength to explore students' cognitive and attitudinal dimentions in relation to their perception of Canvas, however it does not address their learning motivation perspective. This fact is the reason why ARCS model is necessary to supplement TAM in this particular study in order to answer the research question of the study.

2.2 Studies of Relevant Research

The significance of Canvas and its effect on students' learning motivation has been studied by researchers as follows:

A study conducted by Jusuf et al. (2021) focusing on how schools and teachers struggled to find the most effective way to organise online learning in the midst of Covid-19, and how Canvas was used to facilitate the migration of face-to-face learning into virtual learning. The study found that students' perception was positive when they are using Canvas as not only just a substitute for traditional learning, but also a hub of discussion, time management, and how they were able to follow instruction and gather feedback relatively easily from their teachers. After the researchers conducted a pre-test and post-test, it was found that there was an increase in learning outcomes after teachers started to use Canvas to facilitate students online. They concluded that lecturers must manage five major aspects of virtual learning, they are: managing time; choosing what to deliver; knowing where and how to apply effective learning; managing priorities; and arriving at an effective decision after considering the things mentioned.

Pujasari and Ruslan (2021) conducted a research to examine the benefits of using the Learning Management System (LMS) for EFL teaching. They focused on the features and advantages of Canvas as an LMS. They used a qualitative case study approach and found that Canvas offers easy access to learning materials, enhanced students' learning motivation, helps develop students' learning autonomy, engaging with the course content, and monitor their learning progress. These findings boiled down to student-teacher and student-content connection that affect students' reasoning and interactivity throughout the class.

Research conducted by Santiana et al. (2021), explored the students' views on the application of Canvas for immersive online learning. They used a case study method and discovered that students spent from less than 1 hour to more than 2 hours per week on Canvas. They mainly used it to participate in learning activities created by lecturers, such as accessing the learning modules, joining online discussion, and completing the assignments posted on assignment boards. Students

also think that Canvas is easy to use, and it offers a lot of features that reinforce their learning. This study also utilised TAM to align with its findings, and despite Canvas' limitations such as the one related with network stability and mobile version issues, Canvas remains useful and easy to use according to the students.