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CRITICAL SUCCESS FACTORS IN E-LEARNING – A CASE STUDY

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ABSTRACT

With the development of the Internet and Information, Communication Technology (ICT), many educational institutions offer a blended education in which students learn via electronic and online media as well as traditional face-to-face teaching. However, the Covid-19 pandemic has made online education or e-learning compulsory in almost all educational institutions globally. This research has been designed to indicate the critical success factors (CSF) for e-learning. This case study focused on an in-depth probing from students' perspectives on the factors that affect the success of the course in a semester. It involved an IT course for undergraduates involving a 14-week learning about the theory and practical aspects of basic ICT skills. The researchers collected the data using a mixed-method approach via self-constructed questionnaire and semi-structured interview evaluating the students' perspectives on their learning preference, participation and understanding in the course and the instructor's technological skills, pedagogical strategies and subject competency in conducting the course. In the findings, the students have shown high agreement in persisting to learn despite Internet interruption or problems. The students have also agreed that they interacted with other students after class time and were able to use their prior knowledge and applied the knowledge learnt from the course to other courses. Other findings included good pedagogical and technological skills demonstrated by the lecturer. The study has contributed to the theoretical aspect of Instructional Design for online learning which anticipates CSF.

Keywords: E-learning, Critical Success Factors, students' learning preference, students' participation, students' understanding, instructor's technological skills, pedagogical strategies, subject competency

INTRODUCTION

E-learning has generated enormous excitement in education all over the world. The advent development of mobile devices has further expanded the e-learning access to remote students. In universities, e-learning can be relevant to deliver learning opportunities and resources to both on and off-campus distance learning students, where they may be geographically scattered specifically during the phenomena of Covid-19.

From one of the broader definitions, Clark and Mayer (2016) defined e-learning as instruction delivered on a digital device such as a computer desktop, laptop, tablet or smartphone, which is organized to support learning. It is a well-established practice in universities, schools and organizations for delivering interactive, adaptive and flexible training, taking advantage of contemporary and emerging technologies (Ivanova, 2020). To ensure successful e-learning implementation, teachers and students must be competent to use various technology platforms such as Learning Management System, multimedia technologies and a range of learning application software available online.

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However, students are facing many problems to communicate with their lecturers, peers, and university administrators via face-to-face meetings due to the Covid-19 pandemic. Although many courses are done online, studies have shown that some of the students have lost interest, due to the difficulties in communication during online classes (Karim et al., 2019; Simpson, 2018). Despite the struggles that the students have experienced, e-learning has started to be used effectively for bridging the communication gap between students, peers, lecturers and the university to facilitate learning (Muhisn, 2019; Ngubane-Mokiwa, 2017). This present research was attempted to gauge the e-learning success stories as the available literature show inconsistencies in the findings.

Students are greatly distracted from the learning content during the online classes because of the nature of the online classes. Besides, there is neither guarantee nor confirmation that students will be fully attentive in online learning (Raes et al., 2020; Luscinski, 2017). Therefore, communication among the students and between the students and the instructors promote effective online learning (Martin & Bolliger, 2018; Moore 1989) that moulds their interest towards learning. The existence of Transactional Distance theory by Moore (1989) has shown the importance of interactions for distance education. Nevertheless, these interactions remain relevant which embraces the Constructivist Instructional Design approach.

On one aspect, Helmi (2012) indicated that e-learning courses still have deficiency which must be remedied. Despite many flaws which occur throughout the process, many Higher Learning Institutions (HLI) still venture into e-learning-based courses not minding the critical areas that need attention. A good way of overcoming these weaknesses is to recognize those effective and critical factors in e-learning which are referred to as Critical Success Factors (CSF). Moreover, Instructional design of traditional face to face teaching will not suffice to accommodate on-line teaching.

Thus, this study was intended to explore the students' learning preference, participation and understanding in the course attended for 14 weeks. Furthermore, it sought to investigate the instructor's technological skills, pedagogical strategies, and subject competency in conducting the course from the students' views. Hence, the following research questions were designed. RQ 1: Do the students find the online course successful? RQ 2: What are the extend of students' evaluation of the instructor's technological skills, pedagogical strategies and content knowledge for the online course?

LITERATURE REVIEW

Critical Success Factors of E-learning

E-learning is defined as the internet-based learning or web-based learning, online learning and distributed learning (Ruiz, Mintzer & Leipzig, 2006). To ensure a successful learning acquisition, both teachers and students must be competent in using various technology platforms. Papp (2000) indicated that the critical success factor for e-learning in higher education institutions is intellectual property. According to Rosenberg (2001), the e-learning system delivers content for learners via networked computer by using Internet technology. These previous researches have driven the three critical success factors for e-learning, such as learning preference, participation and understanding the course.

Many countries have taken precautionary measures, including lockdowns of schools and universities; switching to full e-learning mode during the spread of the Coronavirus

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(Woodfield, Graham & Harrison, 2013). All these efforts for teaching and learning have impacted the education transformation from on-campus to distance learning during the COVID-19 pandemic, which happened overnight without enough time to plan. Despite all the challenges faced through the learning process, many education institutions have to implement e-learning on a big scale with no guidelines and trial phase. Yew and Jambulingam (2015) asserted that the failure of many online learning courses could be attributed to their inabilities to capture the interest and attention of learners due to unattractive content.

Learners' Learning Preference, Participation and Understanding

When studying the students' attitudes with respect to e-learning, the three domains evaluated are Affect, Behaviour and Cognition. Affective engagement is also commonly designated as emotional engagement. This dimension of students' dedication deals with their emotional responses to learning. In general, progressive emotions are correlated with higher achievement and self-regulation (Xie, Heddy & Greene, 2019). On the other hand, Baker et al. (2010) found that dullness is correlated with lower engagement and poor outcomes, but frustration does not consistently lead to problems. Affective engagement also conveys to task-values, or the value people perceive in completing a task. A task could be naturally enjoyable, useful, or important to do well. If you regard a task as useful and enjoyable, you are likely to feel positive towards completing it (Youssef & Luthans, 2007). This also correlates to motivation and persistence.

Learners' Behaviour

Behavioural engagement is the actions and manner that students take throughout the learning process, which may support or hinder learning. Different researchers describe different behaviours as showing engagement. Boud & Molloy (2013) claimed that learners' feedback displays commitment that can inform instructors of their satisfaction and dissatisfaction. Revere and Kovach (2011) and Banna et al. (2015) found that discussion boards, chat sessions, blogs, wikis, group tasks or peer assessment provide platforms in promoting student-to-student interaction in online courses that show their involvement. The students need to have interactions with the instructor and other students in the e-learning environment. An e-learning system can deliver a meaningful effect if it is supported by a facility that enables communication and interaction between students (Laily et al., 2013). An important aspect of learning approaches is the relations between learners themselves in the learning process that involves peer interactions. Therefore, students' interactivity in the e-learning system is seen to be a unique issue that might affect students' adoption of e-learning (Premchaiswadi et al., 2012).

Learners' Cognition

Cognition involves thinking and awareness. When dealing with cognition that affects behaviour, research has always associated it with cognitive engagement. Cognitive engagement can be explained as mental effort and thinking strategies. This can be incorporated using learning strategies and persist through challenges. Cognitive engagement includes students' interests, skills and approaches to improving their work (Reeve & Tseng, 2011). Cognitive engagement is achieved when the students make mental efforts to engage with the learning

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materials. This type of engagement is important in an e-learning setting because of the students' autonomy and they feel responsible for their learning. Thus, the stage of their cognitive engagement can influence their learning and motivation (Sedaghat et al., 2011). Cognitive commitment relates to seeking, interpreting, analysing and summarizing information, critiquing and reasoning through various opinions and arguments and making decisions. One can meet, for example, a committed but not cognitively engaged student. This is the state where students work hard but are still unable to achieve good results. Given the absence of face- to-face contact between the instructor and the students and the way the cognitive process works, this type of engagement remains difficult to observe and determine (Barkley & Major, 2020). In this study, the researchers focused on cognitive engagement as it is strongly related to the students' mental efforts and can better express their degree of understanding and learning.

Instructor's Technological Skills, Pedagogical Strategies and Subject Competency

In determining the critical factor for e-learning Garison (2009) stated that another important element to investigate is the teaching presence. Teaching presence refers to the teachers' role in delivering the lesson. It emphasizes on the methodology adopted by educators and how effective it will be. The researcher also added that, students alone will not determine the critical success factor for e-learning. Instead, it has to be together with the teachers' role. Consequently, it is the reason why this study decided to use the TPACK as a guideline. Mishra (2006) stated that TPACK raises the types of knowledge of the teacher which are Technological skills, Pedagogical strategies and Content Knowledge and focuses on the teachers' perspective in determining the critical success together with the effectiveness of e-learning.

Instructor's Technological Skills

E-learning is also known as distance learning where the learners may be at every corner of the world. In regards to this, the instructor is expected to own a certain number of skills in ensuring the efficiency of the teaching (Collier, Weinburgh, & Rivera, 2004). It refers to the skills possessed by the instructor in delivering the lesson to the learners and it comprises computer skills, social media skills, and other blended learning skills. All these skills are important for blended and e-learning to make the teaching and learning session interactive and engaging to the learners. Interactive and engaging learning environment is not limited to the fanciness of the slides and other digital teaching materials used in the lesson, it is also crucial to preserve the clarity of the information received by the learners.

Pedagogical Strategies

Pedagogy in short is the technique used by educators to convey the knowledge during the teaching and learning session. Over the decades, changes occurred in the teaching pedagogy to ensure the effectuality of education to a generation. It happens because each generation has different preferences and thus, education has to keep up with these changes to remain effective in educating society. Mynbayeva, Zukhra, & Akshalova (2017) stated that digital technology has changed the way people communicate, think, the way they live their life, the way they influence others as well as the way they learn. Thus, educators have to improve their teaching method to remain relevant in the industry. The pedagogy focused on the current study was

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mainly on the effort taken by the instructor to evaluate the learners' understanding as well as the instructors' teaching quality. It included the attempt to get feedback from the learners as well as to check on their clarity of the delivered content. Bain et al. (2017) mentioned in their research that asking for feedback from students is beneficial not only to the instructors but to the whole teaching and learning process.

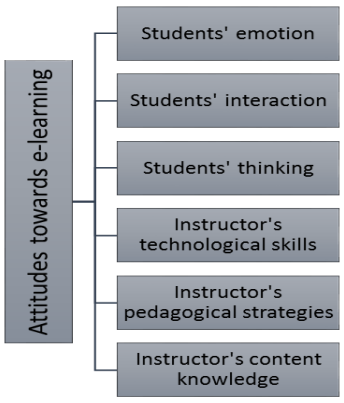
Subject Competency

In effective teaching and learning, subject matter competency is indeed an important feature prior to selecting an instructor for a course. In fact, in many cases, subject competency can be determined by academic qualifications owned by an individual as well as his or her teaching experience. It is essential to ensure the validity and the relevancy of the teaching knowledge. A research conducted by Omar et al. (2018) has found that there is a significant relationship between instructor's subject competency and student achievement. Therefore, it is proven that instructor's subject competency is determined by their qualifications and experience.

RESEARCH FRAMEWORK

When attempting to explain the critical success factors in e-learning design for this study, the researchers used the framework as shown in Figure 1. The theories involved were ABC model for attitude by Ostrom (1969) and Punya Mishra and Matthew J. Koehler's (2006) TPACK Theory. In profiling students' attitudes towards e-learning, the researchers evaluated three domains which are discussed in social Psychology; namely Affect, Behaviour and Cognition. Affect refers to emotions, feelings and mood. Behaviour discusses students' interaction with others. Cognition relates to students' thinking and learning about and with others. On the other hand, TPACK is a technology integration framework that identifies three types of knowledge that instructors need to combine for successful education technology which are technological skills, pedagogical strategies and content knowledge. The combination of ABC model and TPACK framework provides a significant contribution to the present and other future researches of e-learning and Instructional design.

Figure 1: Research Framework



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RESEARCH METHODOLOGY

Research Design

This research has been designed as a case study exploring both quantitative and qualitative data via sequential mixed method. The study started with a survey and followed by interviews. Within 14 weeks, the undergraduate students of a selected course underwent fully online classes with topics ranging from the knowledge and skills of basics of ICT. The students have learnt the operating system and functions, created graphics and shapes using PowerPoint, formed spreadsheets using Excel and explored and discovered information and creativity in e-learning.

The instructor, who is an expert in e-learning, uploaded videos before class, demonstrated the skills online and allowed students to show their work online. Drafts for assignment could be uploaded individually in Google Classroom for feedback before the final submission.

Research Procedures

Participants were 14 students taking the course in the current semester in 2020. Questionnaire was self-developed and distributed online catered for general opinions of the course and specific views of the students towards themselves, the instructor and the course. The questionnaires were distributed to the students through the contacts given by the instructor. They were required to return the completed questionnaires before the deadline given. By doing this, the time required to wait for completion of the questionnaires was monitored with the help from the instructor, and a higher response rate within a limited time frame was ensured. The cost was reduced with this paperless contact and free hosting service from the Internet. Each questionnaire was posted online and the link was sent via WhatsApp to the students through the instructor.

Another method of data collection done was semi-structured interview via Google meet. Interviews were chosen as the research method, since they offer the opportunity for discussion and the surfacing of unanticipated insights. Prior to conducting the interviews, the respondents were contacted for their consent and willingness and they were also asked about their preferences on conducting the interview. Before conducting the interviews, the researchers explained the purpose of the research and more specifically that of the interview. The respondents were made aware that their participations were not obligatory and that they could terminate the interview at any point. All respondents were asked for permission to record their interviews. The respondents were asked to talk about the items from the questionnaire that need further elaboration. The data were considered as saturated, when the researchers have achieved no newer information. The quantitative data were analysed using SPSS while the qualitative data were used to further explain some items from the questionnaire.

Variables

The developed questionnaire had two key variables, namely students' characteristics and teacher's characteristics, that measured whether the students found the online course successful. The students' characteristics are Affect (Preference, Participation and

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Understanding), Behaviour and Cognition. The teacher's characteristics are technological skills, Pedagogical strategies and Subject competency.

There were 22 items asking for the students' opinions and views on the course and the instructor of the course. The items were related to the variables of students' characteristics and the instructor's characteristics.

Reliability of the Questionnaire

Table 1: Cronbach's Alpha Reliability

Construct	Number of Item	*Cronbach's Alpha*
Students' characteristics	12	0.924
Instructor's characteristics	10	0.916

Note: .80 to 1.0 as high reliability and below .6 as low reliability

The questionnaire used in this study is reliable and found to be consistent (α =.924 for students' characteristics and α = .916 for teachers' characteristics).

RESULTS

Data were collected through a self-constructed questionnaire administered to 14 undergraduate e-learning students of an online course in a university in Selangor. Samples for this study consisted of 13 females and 1 male. The effective sample size was thus 14 with a response rate of 100 percent. Table 2 shows the details of the samples.

Table 2: Demographic Profile of the Samples

Item		Frequency	Percentage
Gender	Male	1	7.1
	Female	13	92.9
Age	19	1	7.1
	20	5	35.7
	21	6	42.9
	22	2	14.3
Race	Malay	14	100
Year of study	1st	13	92.8
	2nd	1	7.2
Internet speed	3G	1	7.1
	4G	6	42.9
	5G	0	0
	Wi-Fi	7	50
Devices used	Personal laptop	12	85.7
	Borrowed laptop	1	7.1
	Mobile phone	10	71.4
	Cyber cafe	0	0

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Table 3: Students' Characteristics (Affective)

Item	Response Categories					Mean	SD
	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree		
1. I am fully focused in the online learning.	1 (7.1%)	-	6 (42.9%)	4 (28.6%)	3 (21.4%)	3.571	1.089
2. I still want to learn despite Internet interruption or problem.	1 (7.1%)	-	-	7 (50%)	6 (42.9%)	4.324	1.051
3. I like the challenges to learn the computer skills online	4 (28.6%)	1 (7.1%)	3 (21.4%)	3 (21.4%)	3 (21.4%)	3.000	1.569
4. I look forward to attend the class for the course	1 (7.1%)	1 (7.1%)	-	7 (50%)	5 (35.7%)	4.000	1.177
5. I am not nervous to respond to the lecturer	3 (21.4%)	3 (21.4%)	5 (35.7%)	3 (21.4%)	-	2.786	1.423

Table 4: Students' Characteristics (Behaviour)

Item	Response Categories					Mean	SD
	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree		
6. I participate actively in the online class.	2 (14.3%)	2 (14.3%)	6 (42.9%)	2 (14.3%)	2 (14.3%)	3.000	1.240
7. I spend time to prepare myself for the online class.	1 (7.1%)	1 (7.1%)	3 (21.4%)	5 (35.7%)	4 (28.6%)	3.714	1.204
8. I always interact with the instructor during class time.	2 (14.3%)	2 (14.3%)	6 (42.9%)	2 (14.3%)	2 (14.3%)	3.000	1.240
9. I always interact with other students after class time.	-	-	3 (21.4%)	5 (35.7%)	6 (42.9%)	4.214	.810

Table 5: Students' Characteristics (Cognitive)

Item	Response Categories					Mean	SD
	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree		
10. I fully understand the lessons via online class.	1 (7.1%)	1 (7.1%)	7 (50%)	3 (21.4%)	2 (14.3%)	3.286	1.069
11. I can use my prior knowledge in E-learning for this course.	-	-	3 (21.4%)	3 (21.4%)	8 (57.2%)	4.357	.841
12. I can apply the knowledge learnt from the course into other courses.	1 (7.1%)	-	2 (14.3%)	4 (28.6%)	7 (50%)	4.143	1.167

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Stay Focused

The first research question was addressed based on the trend of agreement and total mean distribution of students' affective (Table 3), behaviour (Table 4) and cognition factor (Table 5). The affective factor shows the students' love for learning the course, the behaviour factor reveals the students' interaction and participations, and the cognition factor presents students' understanding in learning the course. The students had high agreement in wanting to learn despite Internet interruption or problems (92.9%) and looking forward to attend the class for the course (85.7%). From Table 4.0, it is also revealed that the students spent time to prepare themselves for the online class (64.3%). The students always interacted with other students after class time too (78.6%). Looking at the students' learning interest, enthusiasm and preparation for the class as well as their participation, the researchers could see that the students found that the course was successful. However, there have been distributions of being neutral where students could not agree nor disagree in the context of being fully focused in online learning (42.9%).

Further probing from the interviews indicated supporting evidence related to this issue. Answering the researchers' question on this problem, all respondents agreed that one of the main factors that prevented them from staying focused with their online class was the disruption from their family members. According to them, even though they have informed their family in advance regarding their online class, they would still be called especially for any emergency matters related to their little brothers or sisters. Not to forget, one respondent said that she was even called to help her mother with the laundry due to the heavy rain. In addition, they also admitted that they were aware of their responsibility and commitment as students where by right, they were bound to attend the lecture. However, deep inside they felt guilty for ignoring the calls from their family. Having such strong family bonds in them has made them prioritize their families' needs more than their online class.

Other than the family factors, all respondents said that having connection issues made them feel interrupted too and thus, distracted them from the online class. One respondent said that she and her family had just moved to a new neighbourhood where not only the internet but the phone call connection is also bad. Under these circumstances she found that it was difficult for her to get a stable connection and attend lectures smoothly, hence, she felt diverted from the lecture and even felt demotivated.

She also added that, having a morning class at 8 a.m. was another factor that deviated her from her focus to the online class. According to her, living alone on campus and living with the family are totally two different lives. Campus life is about you taking care and managing your own self but once you are home you are bound with the responsibilities too.

> *"I cannot simply wake up, have my own breakfast and that's it, class time then. Instead, I feel responsible to prepare breakfast for my family too. I feel guilty leaving my mom alone in the kitchen."*

Another factor that influenced students' focus in online class was the nature of the subject itself. One respondent found that it was challenging to stay focused in online class if the subject was a theory-based subject because he had the idea that he could do his own revision, study the notes and read the books on his own and still, be able to comprehend the

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subject. Therefore, according to him, theory-based subjects are another factor that could affect his focus in online class.

However, his focus on the online class was somehow different when it involved the practical and technical-based subject. He added that he was currently taking a subject where he needed to demonstrate the application of the computer in every session he had with the lecturer. Knowing that the class was full of instructions, steps, stages, as well as procedures, he found himself quite alert and intact with the online lecture compared to the theory-based subject.

Interactions and Communications

Aiming at the students' behaviour in the online classes, the researchers realized from the questionnaire that the students always interacted with other students after class time. This shows apart from their participation in class, the students were also involved in discussions held after class. They sometimes shared information about lessons and assignments in the discussions. In addition, students also communicated with the instructor during the online class and contacted the instructor after class.

> *"Lecturer would randomly call her students and ask questions. The questions later will lead to discussion and it works well on me. I have to admit that we had such an active online class compared to the other classes in which students are mostly quiet."*

Focusing on the students' understanding in learning the course, the researchers found out that there was a high agreement in the context of using their prior knowledge in e-learning for this course and applying the knowledge learnt from the course into other courses. Conversely, the students tended to be neutral when inquired about whether they have fully understood the lessons via online class (50%). Using added data from the interview sessions, the researchers have discovered that the lecturer's approach and method used in online class were crucial in determining students' understanding and surprisingly all respondents agreed to that.

One respondent said that his level of understanding was very much influenced by the approach adopted by the lecturer. As for his computer class for example, he had no problem understanding the online class because the lecturer adopted multiple methods.
Firstly, the lecturer uploaded a recorded lecture about a topic that would be covered on that day. The recorded lecture was very helpful as he could play back the lecture as often as he wished. He could even watch the lecture multiple times throughout the semester and it was useful in constructing his understanding. Unlike his other subjects, he scored better in his computer course.

Another respondent also admitted that she had issues in comprehending lectures from other lecturers but she had no problem in her computer class. She said that, in her computer class, the lecturer would always call for names and ask for the students' feedback.

> *"Her lecture is full of questions."*

Discussing on the understanding of the online lecture, the last respondent also agreed that she had issues with other subjects but not in her computer class. As mentioned by her, the

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lecturer's recommendations, suggestions and advises were important as she knew what to expect and what to do additionally.

Table 6: Instructors' Characteristics (Technology)

Item	Response Categories					Mean	SD
	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree		
1. The instructor uses only online platforms.	-	-	4 (28.6%)	3 (21.4%)	7 (50%)	4.214	.892
2. The instructor provides time for us to practice online and offline.	-	-	1 (7.1%)	5 (35.7%)	8 (57.1%)	4.500	.650
3. The instructor demonstrates knowledge of subject matter using a variety of techniques and e-learning platforms.	-	-	1 (7.1%)	5 (35.7%)	8 (57.1%)	4.500	.650

Table 7: Instructors' Characteristics (Pedagogy)

Item	Response Categories					Mean	SD
	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree		
4. The instructor responds to our questions/problems even after class learning time.	-	-	-	4 (28.6%)	10 (71.4%)	4.714	.469
5. The instructor has discussions with students and encourages discussions among students.	-	-	2 (14.3%)	5 (35.7%)	7 (50%)	4.357	.744
6. The instructor asks students for feedback for every lesson.			2 (14.3%)	8 (57.1%)	4 (28.6%)	4.143	.663
7. The instructor shows ethical interactions without humiliating the students.	-	-	2 (14.3%)	5 (35.7%)	7 (50%)	4.500	1.019

Table 8: Instructors' Characteristics (Content)

Item	Response Categories					Mean	SD
	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree		
8. The instructor poses good knowledge of the subject.	-	-	-	6 (42.9%)	8 (57.1%)	4.517	.513
9. The instructor plans and organizes the teaching content well.	-	-	1 (7.1%)	5 (35.7%)	8 (57.1%)	4.500	.650
10. The instructor presents the content well.	-	-	-	5 (35.7%)	9 (64.3%)	4.642	.497

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The second research question was addressed based on the trend of agreement and total mean distribution of Instructor's technology used (Table 6), pedagogical strategies (Table 7) and content knowledge (Table 8). The results from Table 6 show that the majority of the students agreed that the instructor had the knowledge of various online platforms and was able to use the skills to impart the subject content of the course to the students. It can also be seen that the majority of the students (71.4%) agreed that the instructor only used online platforms for this course.

As for the instructor's pedagogical strategies, the students had a high agreement that the instructor responded to their questions or queries even after the class had ended. There were about 12 students (85.7%) who agreed that the instructor had a discussion with the students and also encouraged students to discuss in class. However, 2 students answered neutral for item 5. From this response, the researchers further investigated and found out that all respondents agreed that they had a constructive discussion with the lecturer in their computer class but not so much in other classes. They also added that discussions among students also rarely happened as they only had discussions among them when it was about assignments.

As for the instructor's content knowledge, all 14 students agreed that the instructor had a good content knowledge of the course and presented the content well.

DISCUSSION

It is clearly seen from this study that despite the difficulties faced by students during this pandemic, many are still interested and looking forward to learning. Challenges like internet connection, family responsibilities and delayed feedback from group mates are not stopping them from attending online classes instead, they get even sturdier. The finding is in line with Young, Kyu, Sang, Yoo & Aran (2013) who stated that those with determination will survive in learning either in face to face or e-learning. Even though many students are getting less interested in e- learning due to the difficulties, this study managed to find those with strong will as respondents.

The study also supports Clark and Mayer's (2016) previous work on e-learning and extends current understanding that e-learning is an instruction planned to support learning. First, the study offers additional evidence that the students had high agreement in wanting to learn despite Internet interruption or problems. However, our results contradict the claims of Qureshi et al. (2018) that said difficulties including installation, unavailability of latest technology and slow internet connection make students disinterested in learning lessons via online classes.

The second aspect of this study was to assess the students' behaviour in the online classes. The data of the present study also supported the research done by Ivanova (2020) that said online classes is a practice that promotes interactive, adaptive and flexible learning. The current study has identified that students were always interacting with other students after class time. Our results agree with Meskill and Anthony (2015) and Moore (1998) where interactions are crucial for online classes which allow students to form social connection and personality, particularly outside the class time for asynchronous mode of learning.

Next, students' participation in online classes. Erol & Danyal (2020) reported that e-learning is at risk to fail as students are facing different circumstances when they are at home and it's affecting their focus and interest too. Grunden (2020) reported that students' responses and feedback in teaching and learning is highly influenced by the instructors' teaching method.

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This study also found that students would react differently according to the teaching style adopted by the instructors as a diverse kind of learning environment was created. Different learning environments will lead to different responses from students. It is proven that students will actively participate in online classes when the instructor asks a lot of questions during lecture and expects immediate response. That means, instructors will seek participation from students by asking questions and giving simple tasks which require simple cognitive processes that can produce fast feedback. Instructors may also ask the students to share their screen while answering the questions. By that, students will stay awake throughout the lecture as their names will be called at any time.

Instructor's technological skills, pedagogical strategies, and subject competency are other important elements in the success of e-learning. Akhmetova (2014) reported that knowledge and skills are crucial for educators in dealing with e-learning as we are not meeting the students face to face. The technological and other teaching related skills owned by the instructors will benefit the learning process as it can be used to design the learning environment to fit students' differences which later will make them connected to the online classes. Therefore, technological and other relevant skills have to be adopted in e-learning to secure the interest and the attention of the learners as well as the effectiveness of the lesson.

Based on the analysis of the findings in terms of the students' cognitive characteristics, the methods and approaches by the lecturer played an important role for students to be engaged in the lesson. This type of engagement is important in an e-learning setting because of the students' autonomy and they feel responsible for their learning. Thus, the stage of their cognitive engagement can influence their learning and motivation (Sedaghat et al., 2011). The findings of this study are in line with Lin and Huang (2006) where it shows that a well-delivered course affected students' understanding of the course. Apart from that, the researchers have found that there was a high agreement in the context of the students using their prior knowledge in e-learning for this course. Likewise, the students agreed that they needed to have prior knowledge in e-learning to understand the course. Contrary to the research by Li (2018) where the results showed that the students had the same engagement levels of watching video lectures, regardless of whether they had high or low prior knowledge.

Pedagogical strategies are also significant. Instructors must be able to plan on their teaching strategies and activities so that their teaching session will be organised. An organised teaching and learning session has a higher chance to gain the students' attention and to develop understanding (Akhmetova, 2014).

Last but not least, it is undoubted that subject competency is another important factor in determining success for e-learning. It includes the instructor's ability to effectively explain, to describe, to justify, and to illustrate the content in assisting students to form their understanding. Students reported that some of their instructors would only read the slides provided instead of explaining them and it doesn't help in developing comprehension.

Concerning the instructor's technological skills, pedagogical strategies and subject competency in an online learning course, it is obvious that these aspects play important roles in the success of e-learning. The instructor's technology literacy, the course knowledge and the teaching strategy implemented for the course delivery would help to keep students engaged in the e-learning environment. The findings of this study show that the students preferred that the instructor demonstrated knowledge of subject matter using a variety of techniques and e-learning platforms. This is consistent with Shen's et al. (2006) research that stated in order to have a positive impact on students' perspective, the course should be well-delivered. It is the

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instructor's responsibility to run the course smoothly and demonstrate keen teaching abilities and strategies to keep students engaged throughout the learning process. The research held by Omar et al. (2018) suggested that there is a proven relationship between the instructor's competency and students' achievement. Communications among the students and between the students and the instructor are also central as they encourage effective online learning (Moore, 1989).

CONCLUSION AND CONTRIBUTIONS OF STUDY

The study prioritized to investigate the students' perspectives on the factors that affected the online learning process. A mixed-method approach was used to evaluate the students' preferences, participations and understandings in the course and the instructor's technological skills, pedagogical strategies and subject competency in conducting the course from the students' perspectives.

The study has shown the evidence that e-learning can be successful if the instructor is competent and supportive despite technological interruptions. The students could stay focused and always looked forward to attending the class for the course. The students also mentioned that the instructor provided time for them to practice online and offline with a variety of techniques and e-learning platforms adopted for the class.

This study provides contributions to various stakeholders. One of it is towards the faculty where the research is done where the administrators can review this study to improve on the implementation of e-learning for future reference. It can also contribute to the Constructivist approach in designing e-learning. The expertise in subject matter and technological skills among lecturers are crucial in supporting their online teaching.

RECOMMENDATIONS

Based on the research findings the following recommendations for educational practices and further research are outlined.

Students should be encouraged to get involved and participate more during the online courses, check for courses updates and after class discussions. It is crucial for online learners to stay connected with their peers to share their course perspectives and opinions, to keep themselves engaged in the course and to increase their motivation.

It is also recommended for students to avoid technical issues by opting for a high-quality internet service and having access to technical support if it is required. On the other hand, the instructor must contemplate more after-class activities such as asynchronous materials to keep online learners to be engaged and to see various points of view of the course being delivered.

The current research further recommends that students must be supported to implement learning schedules and learn to identify quiet times at their homes to complete the online courses. Students should ask for help from family members to complete certain tasks or home chores to avoid being distracted.

The current study is a small comprehensive study that has been conducted in a course for students at a Malaysian university. It is recommended for further research to embark on a bigger scale for generalization. Apart from that, the current study is only conducted from the

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perspective of Malaysia. It will be interesting to perform a similar study in the context of other countries as the students may behave differently due to economic, structural and infrastructure factors.

Future research should investigate the requirements to build an efficient and effective online learning system that can preserve the integrity of the teaching quality and student engagement and involvement. To enhance the teaching quality, the instructors may be interested in restructuring their strategies to broaden their perspectives and connection with students. Future studies may also investigate more factors related to the teaching quality of online learning. By performing that, the results of the study will be able to provide some insight and eliminate the pain points during the teaching process.

REFERENCES

Akhmetova, D. Z. (2014). Inclusive Approach to the Psycho-Pedagogical Assistant of Distance Learning. *International Education Studies, 7*(11), 136-146. doi.org/10.5539/ies.v7n11p136

Bain, J. D., Ballantyne, R., Packer, J. et al (2017). The importance of feedback in developing and maintaining preservice teacher reflection through journal writing.

Baker, R. S. J., D'Mello, S. K., Rodrigo, M. T., & Graesser, A. C. (2010). Better to be frustrated than bored: The incidence, persistence, and impact of learners' cognitive–affective states during interactions with three different computer-based learning environments. *International Journal of Human-Computer Studies, 68*(4), 223–241. doi: 10.1016/j.ijhcs.2009.12.003

Banna, J., Lin, M.-F. G., Stewart, M., & Fialkowski, M. K. (2015). Interaction matters: Strategies to promote engaged learning in an online introductory nutrition course. *Journal of Online Learning and Teaching*, *11*(2), 249–261.

Barkley, E. F., & Major, C. H. (2020). *Student engagement techniques: A handbook for college faculty*. John Wiley & Sons.

Boud, D. & Molloy, E. (2013). *Feedback in higher and professional education: Understanding it and doing it well*. New York, NY: Routledge.

Clark, R. C., & Mayer, R. E. (2016*). E-learning and the science of instruction: Proven guidelines for consumers and designers of multimedia learning*. John Wiley & Sons.

Cronbach, L. J. (1951). Coefficient alpha and the internal structure of tests. *Psychometrika, 16*(3), 297 – 334.

Erol, K. & Danyal, T. (2020). Analysis of distance education activities conducted during COVID-19 pandemic. Educational Research and Review, 15(9), 536-543.

Garrison, D. R. (2009). Communities of inquiry in online learning. In Encyclopedia of distance learning, Second edition (pp. 352-355). IGI Global.

Graham, C. R., Woodfield, W., & Harrison, J. B. (2013). A framework for institutional adoption and implementation of blended learning in higher education. *The internet and higher education, 18,* 4-14. DOI: 10.1016/j.iheduc.2012.09.003 Project: Blended Learning Research.

Helmi, A. (2012). An analysis on impetus of online education Curtin University of Technology, Western Australia. *The Internet and Higher Education, 4*, 243-253.

Special Issue: Vol. 18. No.4 (2021). 42-58. ISSN: 1823-884x
Theme: New Media, Culture anda Social Learning

Ivanova, M. (2020). E-Learning informatics: From automation of educational activities to intelligent solutions building. *Informatics in education - An International Journal, 19*(2), 257-282.

Karim, A., Shahed, F. H., Rahman, M. M., & Mohamed, A. R. (2019). Revisiting innovations in ELT through online classes: An evaluation of the approaches of 10-minute school. *Turkish Online Journal of Distance Education, 20*(1), 248-266.

Laily, N., Kurniawati, A. & Puspita, I. A. (2013). Critical success factor for e-learning implementation in Institut Teknologi Telkom Bandung using Structural Equation Modeling. In *2013 International Conference of Information and Communication Technology (ICoICT*), (pp. 427–432).IEEE.

Li, Liang-Yi. (2018). Effect of Prior Knowledge on Attitudes, Behavior, and Learning Performance in Video Lecture Viewing. *International Journal of Human-Computer Interaction. 35*. 1-12. 10.1080/10447318.2018.1543086.

Luscinski, A. (2017). Best practices in adult online learning.

Martin, F., & Bolliger, D. U. (2018). Engagement matters: Student perceptions on the importance of engagement strategies in the online learning environment. *Online Learning, 22*(1), 205-222.

Meskill, C. & Anthony, N. (2015). *Teaching languages online* (Vol. 12). Multilingual Matters.

Mishra, P. (2019). Considering Contextual Knowledge: The TPACK Diagram Gets an Upgrade. *Journal of Digital Learning in Teacher Education, 35*(2), 76-78.

Moore, M. G. (1989) Editorial: Three types of interaction. *American Journal of Distance Education, 3*(2), 1-7, doi:10.1080/08923648909526659

Muhisn, Z., Ahmad, M., Omar, M., & Muhisn, S. (2019). The Impact of Socialization on Collaborative Learning Method in E-Learning Management System (eLMS). *International Journal of Emerging Technologies in Learning (iJET), 14*(20), 137-148.

Mynbayeva, A., Zukhra, S., & Akshalova, B. (2017). Pedagogy of the Twenty-First Century: Innovative Teaching Methods. Contribution of Research in Education, Olga Bernad Cavero and Núria Llevot-Calvet, IntechOpen, DOI: 10.5772/intechopen.72341.

Ngubane-Mokiwa, S. A. (2017). Implications of the University of South Africa's (UNISA) shift to open distance e-learning on teacher education. *Australian Journal of Teacher Education, 42*(9), 7.

Omar, R., Ahmad, A. & Hassan, R. (2018). Importance of Teacher's Competency through Student's Perception in Relationship between Parental Involvement and Motivation with Student's Achievement. *Sains Humanika, 10*(3-3).

Ong Fong Yew & Manimekalai Jambulingam (2015). Critical Success Factors of E-learning Implementation at Educational Institutions, *Journal of Interdisciplinary Research in Education (JIRE), 5*(1), 17–24.

Ostrom, T. M. (1969). The relationship between the affective, behavioral, and cognitive components of attitude. *Journal of Experimental Social Psychology, 5*(1), 12-30.

Papp, R. (2000). Critical success factors for distance learning. *AMCIS Proceedings*, 104.

Premchaiswadi, W., Porouhan, P. & Premchaiswadi, N. (2012). An empirical study of the key success factors to adopt e-learning in Thailand. In Proceedings of the *International Conference on Information Society (i-Society 2012),* London, UK, 333–338.

Qureshi, I. A., Ilyas, K., Yasmin, R., & Whitty, M. (2012). Challenges of implementing e-learning in a Pakistani university. *Knowledge Management & E-Learning: An International Journal, 4*(3), 310-324.

Special Issue: Vol. 18. No.4 (2021). 42-58. ISSN: 1823-884x
Theme: New Media, Culture anda Social Learning

Raes, A., Vanneste, P., Pieters, M., Windey, I., Van Den Noortgate, W., & Depaepe, F. (2020). Learning and instruction in the hybrid virtual classroom: An investigation of students' engagement and the effect of quizzes. *Computers & Education*, 143, 103682.

Reeve, J. & Tseng, C. M. (2011). Agency as a fourth aspect of students' engagement during learning activities. *Contemporary Educational Psychology, 36*(4), 257-267.

Revere, L., & Kovach, J. V. (2011). Online technologies for engaged learning: A meaningful synthesis for educators. *The Quarterly Review of Distance Education, 12*(2), 113–124.

Rosenberg, M. J. (2001). *E-learning: Strategies for delivering knowledge in the digital age, 3*. New York: McGraw-Hill.

Ruiz, J. G., Mintzer, M. J. & Leipzig, R. M. (2006). The impact of e-learning in medical education. *Academic Medicine, 81*(3), 207- 212.

Sedaghat, M., Abedin, A., Hejazi, E., & Hassanabadi, H. (2011). Motivation, cognitive engagement, and academic achievement. *Procedia-Social and Behavioral Sciences, 15*, 2406-2410.

Xie, K., Heddy, B. C., & Greene, B. A. (2019). Affordances of using mobile technology to support experience-sampling methods in examining college students' engagement. *Computers & Education, 128*, 183–198. doi: 10.1016/j.compedu.2018.09.020

Yew, O. F. & Jambulingam, M. (2015). Critical success factors of e-learning implementation at educational institutions. *J. Interdiscip. Res. Educ, 5*, 17–24.

Young, J. J., Kyu, Y. L., Sang, Y. H., Yoo, K. H., & Aran, K. (2013). The Effects of Self-Determination on Learning Outcomes in a Blended Learning. International Association of the Development of the Information Society.

Youssef, C. M. & Luthans, F. (2007). Emerging positive organizational behavior. *Journal of Management, 33*(3), 321-349.

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