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THE INTERACTION BETWEEN TEACHING COMPETENCIES AND SELF-EFFICACY IN FOSTERING ENGAGEMENT AMONGST DISTANCE LEARNERS: A PATH ANALYSIS APPROACH

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ABSTRACT

Purpose - Distance learners are expected to actively participate in online learning settings to improve their cognitive level and promote more meaningful learning. However, without specific teaching skills and competencies from the instructors together with belief and capability of the distance learners themselves, their engagement in online learning would not be achieved. Limited studies have examined the extent of self-efficacy in encouraging student engagement in learning, especially within online learning settings. Thus, this study examined self-efficacy as a moderator to test its influence on the relationship between online teaching competencies and student engagement.

Methodology - This quantitative research was conducted using the purposive sampling technique. This study involved 321 distance learners from a Malaysian public university. The questionnaire was created using SurveyMonkey, and the measurement items were

adopted from past research with acceptable reliability. This study utilised partial least squares (PLS) 3.0 to test the hypothesis via correlation and path analysis.

Findings - Contrary to expectations, the findings contributed to the literature that online teaching competencies and self-efficacy were not significantly related to student engagement. The association between online teaching competencies and student engagement was shown to be moderated by self-efficacy. This finding is aligned with Bandura's (2001) social cognitive theory which states that personal factors such as self-regulation, self-efficacy, and interest are impacted in the distance education context.

Significance - The results of this study can benefit online course instructors in Malaysian distance educational institutions to develop courses that enhance online learners' self-efficacy. Online teaching competencies employed by online distance learners can be the primary objective when developing faculty development programmes that aim to coach online instructors to be competent in online teaching. Moreover, institutions are encouraged to introduce other online learning platforms to facilitate training of its practitioners in order to accelerate successful online teaching and learning experiences.

Keywords: Online teaching competencies, self-efficacy, online student engagement.

INTRODUCTION

There has been significant growth in distance education in recent years as evidenced in the rise in registration rates (Bigatel et al., 2012). This indicates a necessity to design a flexible learning setting to fulfil students' needs in online learning. The growth in this sector has substantiated the superiority of online learning experience in learners' achievement. Students' rating of teaching quality and effectiveness is assumed as a vital indicator to discourage a high attrition rate (Bigatel et al., 2012). Online instructors are encouraged to be proficient in various skills and abilities to successfully teach in multifaceted technology-incorporated settings and ensure learner achievement. Hence, teaching behaviours must be determined and emphasised so as to sufficiently inform instructors the necessary abilities and competencies in ensuring positive online teaching.

The online learning setting varies significantly from the traditional learning context. Online learners are not required to attend classrooms physically and are not given opportunities to participate in physical interactions with peers and course instructors. Online learners have to be independent as they have to manage the learning pace (Lasfeto, 2020). Hence, self-efficacy and the ability to maximise online learning technology are crucial for online course completion. Among the vital skills are, for instance, the application of e-mail, discussion boards and awareness in utilising Internet browsers. When students develop an apprehension for computer technologies, they may feel confused, anxious, and frustrated over losing control, leading to technology withdrawals. Several essential skills are discussion boards, proper Internet search, and use of e-mail. The indicators that exemplify students' fear of computer technology include feeling confused, losing grasp of personal control, feeling anxious and frustrated, and removing oneself entirely from computer technology (Broadbent & Poon, 2015).

Student engagement is an essential facet of student learning and satisfaction towards online programmes. This aspect has been thoroughly examined in the distance online learning research field for many years. Student engagement can be described as “the student’s psychological investment in an effort directed towards learning, understanding, or mastering the knowledge, skills, or crafts that academic work is intended to promote” (Ahmed et al., 2018). It is vital to maintain student engagement in online learning settings as online learners are not provided as many opportunities to communicate with their institutions as compared to learners in classroom settings. Therefore, there is a necessity to create numerous opportunities to promote students’ online engagement. According to Martin and Bolliger (2018), the necessity for engagement has led to the creation of guidelines in designing successful online courses.

The purpose of the engagement technique is to deliver constructive experiences that consist of active learning opportunities encompassing team collaboration, resource sharing, discussions and presentations, case studies and reflection, and completing assignments with hands-on components. Furthermore, to respond to the worrying issues of online learning such as students’ seclusion, dropout, students’ withholding and declining graduation rate, engagement is seen as the answer to mitigate the issues mentioned (Banna et al., 2015). Meyer (2014), Banna et al. (2015), and Britt et al. (2015) have highlighted the significance of engagement in successful online learning. These researchers showed that student engagement is effective in increasing

learners' significant effort required to attain cognitive development and knowledge construction, contributing to higher achievement scores.

Banna et al. (2015) stated that if past content was a key emphasis, then engagement has a critical function in motivating online learning. Four fundamental engagement techniques of online learning have been identified to encourage student engagement: emotions, skills, participation, and performance. Communication with peers, course instructors, besides content encourages active learning and higher student engagement (Lear et al., 2010). Interactivity and a sense of community generate effective instruction and learning outcomes.

In Malaysia, the focus of studies in distance education is shown in students' online reading strategies (Jusoh & Abdullah, 2015), adult distance learners' learning difficulties in improving their English language proficiency (Sai et al., 2013), building a social existence in the online environment (Zaini & Ayub, 2013), the effect of platforms for online writing on the scores of learners' narrative writing (Annamalai et al., 2013), and studies that look into numerous personalities of adult students in distance education (Mat Zin, 2012). Nevertheless, there are not many studies which determined the interaction between online teaching competencies and self-efficacy to boost student engagement. The need for self-efficacy to moderate the relationship is critical because a person's level of engagement in a task depends on the learner's self-belief in his/her capabilities to excel in the given task (Bandura, 1997). Moreover, self-efficacy is seen to encourage behaviour, particularly in determining whether a student will attempt a behavioural task and accumulate the effort to continue the task that signals engagement; in contrast to self-regulated learning which are the motivational and learning strategies that students employ to attend to desired goals (Zimmerman, 1989). The superiority of online teaching competency in promoting student engagement is a critical subject since enrolment has gradually increased over the years. Thus, it is beneficial to conduct an investigation to examine whether online teaching competencies and self-efficacy have a significant relationship with online student engagement, whether self-efficacy moderates the relationship between online teaching competencies and online student engagement amongst distance learners and to determine whether online teaching competencies is significantly related to online student engagement. Furthermore, it is useful to observe the role of self-efficacy to moderate the relationship between online teaching competency and online student engagement.

This study has a significant contribution by guiding Malaysian distance educators to develop their courses that can enhance self-efficacy among online distance learners. The online teaching competencies employed by online distance learners can be the main objective in faculty development programmes that aim to coach online instructors to be competent in online teaching. Moreover, institutions should set up other online learning platforms to assist practitioners to achieve successful online teaching and learning experiences.

Research Questions

To investigate this issue further, the following are the research questions:

1. Do online teaching competencies have a significant relationship with online student engagement?
2. Does self-efficacy have a significant relationship with online student engagement?
3. Does self-efficacy moderate the relationship between online teaching competencies and online student engagement?

LITERATURE REVIEW

Online Teaching Competencies

Currently, numerous online teaching competencies demonstrate online teachers' finest exercises (Albrahim, 2020; Gurley, 2018). Nevertheless, a review of these identified competencies has revealed certain irregularities present amongst them that exist in models focusing on online teachers. This is not surprising because online learning exists in a significantly different context. Baran et al. (2013) stated that the vital roles and competencies expected by online teachers often clashed in the literature, and they depended on the online teaching context. Thus, the unpredictable learning environment necessitates educators to possess various competencies.

Thomas and Graham (2017) reported that previous research had assessed different online teaching competencies and identified that course design was the most widely focused factor regarding competency. Nonetheless, Bigatel et al. (2012) listed online teaching competencies that emphasised solely on teaching behaviours. The

scholars elucidated every task concerning extensive instructional elaboration with evaluators, course developers, online learning instructors, academicians consisting of 64 items of online teaching behaviours which they assigned as tasks that online instructors performed. The study included 197 respondents in rating their agreement with each assessment using a 7-point Likert scale, and the participants were asked to rate the tasks they felt to be most critical in an online teaching course. The study used exploratory factor analysis to cluster the tasks into seven groups of competencies, which were: (1) administration/leadership, (2) active learning, (3) multimedia technology, (4) active teaching/responsiveness, (5) technological competence, and (6) policy enforcement, (7) classroom decorum.

Bigatel et al. (2012) introduced a model to explain educators' teaching behaviours during course delivery. The model did not emphasise the factor of course design. Hence, this model became the basis for this current study. This model may have limitations, and thus its accuracy can be determined via validity check, or ways to improve it can be suggested.

Self-Efficacy

Yavuzalp and Bahcivan, (2020) explained self-efficacy as a critical competence belief in self-regulatory control processes. Bandura (2001) elucidated that perceived self-efficacy was the individual's belief in his or her capability in designing a plan of action necessary to accomplish a potential situation. Hence, self-efficacy is trusting in the capability of an individual in achieving a particular domain. Furthermore, it affects learning, motivation in learning, and achievement (Van Dinther et al., 2011). This viewpoint stipulates, that learners who possess positive self-efficacy towards online learning possess higher chances of attaining achievement and stronger learning motivation.

Other than self-efficacy, mastering online learning technology skills is also essential. For example, a person must be proficient in using e-mails, discussion boards, and Internet searches. Learners who possess lower proficiency in computer-based devices could experience perplexity, anxiety, frustration, loss of personal control, and intention to give up (Broadbent & Poon, 2015). Nevertheless, literature has shown varying results on the link between technology self-efficacy, online programme satisfaction, and students' achievement. Technological self-efficacy is viewed as a weak factor in online programmes and final performance (Kuo et al., 2014; Puziferro, 2008). Conversely, technology self-

efficacy has been described to have a positive connection with online learning performance (Bradley et al., 2017; Olson, & Appunn, 2017).

Online Student Engagement

Student engagement is vital to minimise learner withdrawal and reduce the rate of learner dropout. It is also an essential facet in maintaining online learners and improving graduation rates (Banna et al., 2015). Ahmed et al. (2018) stated that student engagement was “the student’s psychological investment in an effort directed towards learning, understanding, or mastering the knowledge, skills, or crafts that academic work is intended to promote.”

Generally, students interact with instructional content, classmates, and course instructors. Bolliger and Halupa (2018) listed three student engagement domains: cognitive, emotional, and behavioural. The cognitive domain encompasses the learners’ beliefs and principles about themselves and their styles of learning. Next, the emotional domain includes factors like feelings and motivation. The behavioural domain discusses habits, for example, procrastination and learning skills like reading, learning and writing. Dixson (2010, 2015) constructed the Online Student Engagement (OSE) scale which involved significantly connected variables: skills, emotions, performance, and participation.

Martin and Bolliger (2018) recorded seven best practices regarding engagement: (1) student/faculty contact, (2) active learning, (3) cooperation, (4) prompt feedback, (5) emphasis of time on task, (6) developing high student expectations, and (7) respecting diversity in online classrooms. Dixson (2015) asserted that for various students, learning was a social activity. This researcher discovered that learners thought of engagement, which reduced transactional distance, as an application of learned materials. Dixson claimed that just by reading posts, e-mails, content, etc., would not be adequate to be engaged in an online course.

Numerous online courses have been conducted asynchronously. Nonetheless, these courses can be made effective via discussion forums and e-mails. Teaching instructors can encourage respect for diversity and collaboration when a safe learning environment is developed for learners. Instructors who can precisely determine the amount of time their online learners will use to engage and assimilate content can increase expectations and guarantee that they will succeed. Kuh (2009) suggested that these principles must be continually employed in online learning.

Underlying Theory

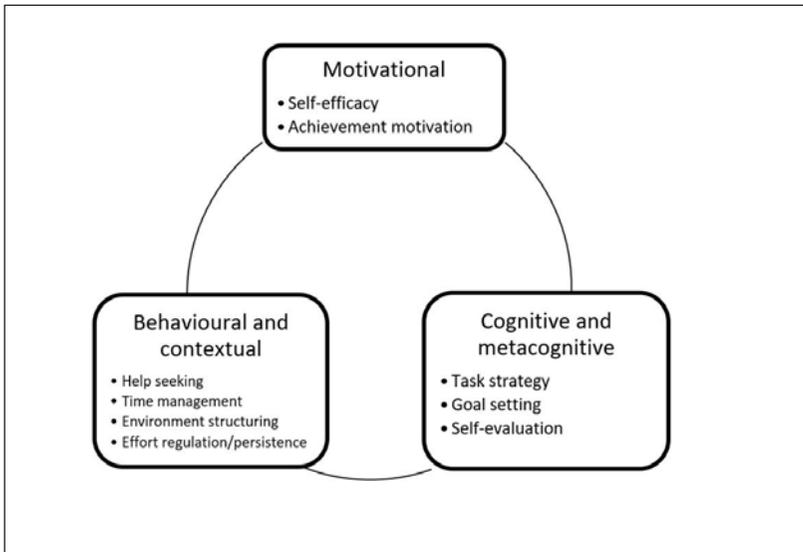
The theoretical framework of this study is inclined towards Bandura's (2001) social cognitive theory. This research proposes that online teaching competency is an essential predictor of engagement. This emphasises the significance of integrating online activities to promote student engagement. It is linked with social cognitive theory, as explained by Bandura (2001) that looks at human learning in triadic reciprocal interactions consisting of personal, behavioural, and environmental factors. Personal factors such as self-regulation, self-efficacy, and interest can affect the context of distance education. These factors are influenced by the learners' behaviour and the learning environment through reciprocal communication. As such, online activities offer a chance to interact in an online environment and improve students' drive and engagement.

Research Framework and Hypotheses Formulation

Figure 1 shows the research framework, which includes an independent variable (online teaching competencies), dependent variables (online student engagement) and moderating variable (self-efficacy).

Figure 1

Research Framework



Based on the research framework, the hypotheses proposed in this study are as follows:

H₁: Online teaching competencies have a positive influence on online student engagement.

H₂: Self-efficacy has a positive influence on online student engagement.

H₃: Self-efficacy moderates the relationship between online teaching competencies and online student engagement.

METHODOLOGY

Research Design

Schwarz and Oyserman (2001) stated that asking questions or requesting a person to react to statements about their preferences or their behaviour seemed to be one of the top choice approaches in the behaviour and psychology field. Moreover, the approach of asking people for direct responses regarding information for a construct is well-documented in social science studies (Schwarz & Oyserman, 2001). It is essential to note that individuals are the greatest origin of information regarding themselves. As such, to investigate their beliefs and their feelings is to enquire into them. Thus, the self-report approach was used in this research, and the variables were measured at the individual level.

Sampling Technique

This research was conducted using the purposive sampling technique as it examined online teaching competencies, self-efficacy, and student engagement amongst distance learners. Sekaran and Bougie (2010) explained purposive sampling in selecting participants by looking at the most suitable stance to give appropriate information because they possessed the required information or adhered to the specified sampling criteria. In this investigation, the researcher chose distance learners who (1) had active student status during the academic session 2018/2019 and (2) had progressed to at least a minimum of the second year of the programme. The inclusion criteria assisted in improving the potential that online teaching competencies was a critical matter to students and improved accuracy concerning the student engagement.

The demographic questions included gender, age, tenure with organisation, current employment status, current year in the programme, and the number of online courses taken to better comprehend the sample.

Population and Sample Size

The target population of the study were undergraduate distance learners from a Malaysian public university. A total of 500 students were selected to participate in the online survey as they were taking a major course taught by the researcher. The guideline as detailed by Hair et al. (2010) was referred to set the minimum sample size required during the data collection process. According to the guideline, the minimum number of samples recommended is at least five times more than the number of measured variables. Nevertheless, a more suitable sample size is 10 participants to one variable item. The sum of items to measure all variables in this investigation was 57. Therefore, the study concluded that the acceptable minimum sample size was 285 participants (5×57).

Data Collection Procedure

The questionnaire was created using SurveyMonkey.com, an online survey collection tool. Those who refused to participate in this study was not penalised by the lecturer. A pre-test was not needed as each measurement item used was taken from past empirical research. However, it was important to conduct a pilot test to determine the clarity of the statements in the questionnaire and to facilitate the questionnaire distribution process (Maholita et al., 2006). A total of 14 sets of questionnaires were e-mailed to the finalised students. They were chosen to participate in the pilot test as they took a major course with the researcher. Despite this, they were omitted from the final sample since they had seen the earlier version of the questionnaire which could cause them to respond differently in the actual study. The questionnaire was improved and finalised based on the responses gathered in the pilot test. A minor modification to the measurement items was made by the researcher to provide a specific example of the terminologies used in the questionnaire so as to fit in with the academic and student context and to further enhance their understanding. During the actual data collection, a total of 372 sets of the questionnaires of the study were e-mailed to students from major courses taught by the researcher. From the 372 questionnaires, only 321 questionnaires were used. A total of 51 questionnaires were removed due to: (1) incomplete data (44 cases), and (2) participants

were first-year students in the programme (7 cases). Hence, only 321 cases were analysed, and these were more than the minimum number of cases needed (285) as recommended by Hair et al. (2010). Therefore, the criterion of having an acceptable sample size, i.e., 5 respondents per variable item was fulfilled.

Research Instrument

The measurement items in this study were sourced from past investigations with acceptable reliability. A 30-item scale (Bigatel et al., 2012) was utilised to assess online teaching competencies. A sample of the items included, “The instructor encourages students to interact with each other by assigning team tasks and projects, where appropriate” and “The instructor monitors students’ adherence to academic integrity policies and procedures.” In the current research, Cronbach’s alpha was valued at 0.91. Artino and McCoach’s (2008) eight-item scale was used for self-efficacy. A sample of the items included, “I believe I will receive an excellent grade in this class” and “Considering the difficulty of this course, the teacher, and my skills, I think I will do well in this class.” Cronbach’s alpha was valued at 0.86 in this current investigation. The 19-item scale by Dixson (2010, 2015) was used to study student engagement in the context of online learning. A sample of the items included “Making sure to study on a regular basis” and “Doing well on tests/quizzes.” Cronbach’s alpha in this research was valued at 0.89. Each item used a 5-point Likert scale format ranging from 1 = strongly disagree to 5 = strongly agree.

Data Analysis

To inspect the research model, the study used partial least squares (PLS) analysis. The analysis technique used was adapted from the two-step approach by Anderson and Gerbing (1988). The first step involved verifying the measurement model (reliability and measurement validation). Next, the structural model was verified to examine the hypothesis relationship. Two-step analysis and Smart PLS M2 version 2.0 were used for data analysis. The bootstrap approach (resampling of 500) was also applied in this study to identify the weight, significance level of loading, and path coefficient.

RESULTS

Demographic Results

Of the 321 respondents, 62 percent were female, while 38 percent were male. The average age of the respondents was 31 years with a five-year average tenure with their respective company. Each respondent was employed in a full-time job, and they were in their second year or more in the programme. Besides, the average number of courses taken by the respondents was 30. The respondents held remarkable careers, and were from different organisational levels (managerial, supervisory, and operations) including from several types of organisations—services, manufacturing, and government/non-profit.

Descriptive Statistics of the Latent Constructs

Based on Table 1, the mean values of the three latent variables ranged between 4.33 and 4.78, and the standard deviation was valued between 0.77 and 0.95. These results were generated based on a 5-point Likert-type scale. All mean values were found to surpass the midpoint value of 2.50. The highest mean value was self-efficacy (4.79), while online teaching competencies showed the lowest value (4.33). Conversely, dispersion values through standard deviation showed that the highest and lowest values were achieved in online teaching competencies with 0.95 and student engagement with 0.77.

Table 1

Results of Descriptive Analysis

Construct	No. of items	Mean	Standard Deviation
Online Teaching Competencies	30	4.33	0.95
Self-Efficacy	8	4.79	0.93
Online Student Engagement	19	4.48	0.77

Common Method Variance

In calculating the extent of common method bias, this study moved to Harman's single factor test. The first factor was accounted for lower than 50 percent of the total variance explained as indicated by the principal component factor unrotated analysis. Podsakoff et al. (2003) inferred the nonexistence of common method bias in this study.

Assessment of the Measurement Model

The measurement model was measured using discriminant and convergent validity. Convergent validity was investigated by identifying composite reliability (CR), indicator loadings, and average variance extracted (AVE). The indicator loadings and CR were found to be above 0.7, whereas AVE was valued above 0.5, which conformed to the recommended value presented in the literature (Table 2).

Table 2

Results of the Measurement Model

Construct <i>Online Teaching Competencies</i>	Loading	Composite Reliability (CR)	Average Variance Explained (AVE)
1. <i>The instructor encourages students to interact with each other by assigning team tasks and projects, where appropriate.</i>	0.76		
2. <i>The instructor includes group/team assignments where appropriate.</i>	0.82	0.93	0.71
3. <i>The instructor encourages students to share their knowledge and expertise with the learning community.</i>	0.83		
4. <i>The instructor encourages students to participate in discussion forums, where appropriate.</i>	0.87		
5. <i>The instructor provides opportunities for hands-on practice so that students can apply learned knowledge to the real-world.</i>	0.86		
6. <i>The instructor provides additional resources that encourage students to delve deeper into the content of the course.</i>	0.81		
7. <i>The instructor encourages student-generated content as appropriate.</i>	0.82		
8. <i>The instructor facilitates learning activities that help students construct explanations/solutions.</i>	0.90		
9. <i>The instructor uses peer assessment in his/her assessment of student work, where appropriate.</i>	0.91		
10. <i>The instructor shows respect to students in his/her communications with them.</i>	0.85		
11. <i>The instructor makes grading visible for student tracking purposes.</i>	0.82		

(continued)

Construct Online Teaching Competencies	Loading	Composite Reliability (CR)	Average Variance Explained (AVE)
12. <i>The instructor clearly communicates expected student behaviour.</i>	0.84		
13. <i>The instructor is proficient in the chosen Learning Management System (LMS).</i>	0.89		
14. <i>The instructor adheres to the university's policies.</i>	0.90		
15. <i>The instructor integrates the use of technology that is meaningful and relevant to students.</i>	0.70		
16. <i>The instructor provides prompts, and helpful feedback on assignments and exams that enhances learning.</i>	0.72		
17. <i>The instructor provides clear, detailed feedback on assignments and exams that enhances the learning experience.</i>	0.76		
18. <i>The instructor shows care and concern in students' learning of the course content.</i>	0.73		
19. <i>The instructor helps keep course participants on task.</i>	0.74		
20. <i>The instructor uses appropriate strategies to manage online workload.</i>	0.81		
21. <i>The instructor uses a variety of multimedia technologies to achieve course objectives.</i>	0.86		
22. <i>The instructor uses multimedia technologies that are appropriate for learning activities.</i>	0.83		
23. <i>The instructor helps students resolve conflicts that arise in collaborative teamwork.</i>	0.81		
24. <i>The instructor resolves conflicts when they arise in teamwork/group assignments.</i>	0.72		

(continued)

Construct Online Teaching Competencies	Loading	Composite Reliability (CR)	Average Variance Explained (AVE)
25. <i>The instructor effectively manages</i>	0.79		
26. <i>course communication by being a good model of expected behaviour in all course communication.</i>			
27. <i>The instructor identifies areas of potential conflict in the course.</i>	0.77		
28. <i>The instructor is proficient with the technologies used in the online classroom.</i>	0.81		
29. <i>The instructor is confident with the technologies used in the course.</i>	0.89		
30. <i>The instructor monitors students' adherence to policies on plagiarism.</i>	0.87		
31. <i>The instructor monitors students' adherence to academic integrity policies and procedures.</i>	0.84		
Self-Efficacy			
1. <i>I believe I will receive an excellent grade in this class.</i>	0.76		
2. <i>I am certain that I can understand the most difficult material presented in the readings for this course.</i>	0.81		
3. <i>I am confident that I can learn the basic concepts taught in this course.</i>	0.89		
4. <i>I am confident that I can understand the most complex material presented by the instructor in this course.</i>	0.87	0.89	
5. <i>I am confident that I can do an excellent job on the assignments in this course.</i>	0.84		
6. <i>I expect to do well in this class.</i>	0.80		
7. <i>I am certain that I can master the skills being taught in this class.</i>	0.87		
8. <i>Considering the difficulty of this course, the teacher, and my skills, I think I will do well in this class.</i>	0.88		

(continued)

Construct	Composite Loading	Reliability (CR)	Average Variance Explained (AVE)
<hr/> Online Teaching Competencies			
<hr/> Online Student Engagement			
1.			<i>Making sure to study on a regular basis.</i>
2.			<i>Putting forth effort.</i>
3.			<i>Staying up on the readings.</i>
4.			<i>Looking over class notes in between going online to make sure I understand the material.</i>
5.			<i>Being organized.</i>
6.			<i>Taking good notes on readings, PowerPoints, or video lectures.</i>
7.			<i>Listening/reading carefully.</i>
8.			<i>Finding ways to make the course material relevant to my life.</i>
9.			<i>Applying course material to my life.</i>
10.			<i>Finding ways to make the course interesting to me.</i>
11.			<i>Really determined to learn the material.</i>
12.			<i>Having fun in online chats, discussions or via email with the instructor or other students.</i>
13.			<i>Participating actively in small-group discussion forums.</i>
14.			<i>Helping fellow students.</i>
15.			<i>Getting a good grade.</i>
16.			<i>Doing well in tests/quizzes.</i>
17.			<i>Engaging in online conversations (chats, discussions, email).</i>
18.			<i>Posting regularly in discussion forum(s).</i>
19.			<i>Getting to know other students in the class.</i>

Next, discriminant validity was reviewed. Subsequently, the discriminant validity was tested. The literature found that the Fornell-Larcker (1981) criterion was unsuitable in determining the non-appearance of discriminant validity in a typical research context

(Henseler et al., 2015). Therefore, the heterotrait-monotrait (HTMT) ratio of correlations based on the multitrait-multimethod matrix was deemed a suitable alternative for assessing discriminant validity. Monte Carlo simulation was utilised to illustrate the superiority of this technique.

Hence, this study used this new method (Table 3) to investigate the discriminant validity of the model. There are two current strategies for employing HTMT in determining the presence of discriminant validity, which are statistical test and criterion. One of the strategies concludes that discriminant validity exists when the HTMT value surpasses the HTMT.85 value of 0.85 (Kline, 2015) or the HTMT.90 value of 0.90 (Gold et al., 2001). Conversely, weak discriminant validity is reported if the second strategy is based on Henseler et al. (2015) to investigate the null hypothesis ($H_0: HTMT \geq 1$) against the alternative hypothesis ($H_1: HTMT < 1$) and if the confidence interval value is one (i.e., H_0 holds). Table 3 shows that each value has surpassed the HTMT.90 (Gold et al., 2001) and HTMT.85 (Kline, 2015) values. Moreover, the HTMT Inference established that the confidence interval value was not 1 for every construct, indicating that discriminant validity was recognised.

Table 3

Results of Discriminant Validity Analysis

	Online Teaching Competencies	Self-Efficacy	Student Engagement
Online Teaching Competencies			
Self-Efficacy	0.55		
Online Student Engagement	0.34	0.59	

Assessment of the Structural Model

The findings revealed that only one hypothesis out of three was accepted. Self-efficacy moderated the relationship between online teaching competencies and student engagement ($\beta = 0.328, p < .01$).

Therefore, hypotheses H₃ was accepted. Nevertheless, H₁ ($\beta = 0.060$ $p > .1$) and H₂ ($\beta = 0.001$, $p > .1$) were not accepted. Table 4 lists the findings.

Table 4

Results of Path Coefficient and Hypotheses Testing.

No.	Relationship	Path Coefficient (β)	Std. Error	t-value	Decision
H ₁	Online Teaching Competencies --> Online Student Engagement	0.060	0.072	0.834	Not Supported
H ₂	Self-Efficacy --> Online Student Engagement	0.001	0.074	0.009	Not Supported
H ₃	Online Teaching Competencies * Self-Efficacy --> Online Student Engagement	0.328	0.109	3.023***	Supported

*Note: *** $p < 0.01$ (2.33), ** $p < 0.05$ (1.645), * $p < 0.1$ (1.28) (based on one-tailed test)*

DISCUSSION

This paper aims to test the association between self-efficacy, teaching competencies, and student engagement. Furthermore, the effect of self-efficacy as a moderator was measured between the association of online teaching competencies and student engagement.

This research contradicted the proposed hypothesis and revealed that online teaching competencies was not significantly related to student engagement. Therefore, online teaching competencies did not affect student engagement in any way. The non-significant relationship between the teaching competencies constructs and student engagement construct could be attributed to the profile of the respondents who were primarily distance learners. A total of 69 percent of the respondents were in the 3rd year of their programme. Thus, this finding implies that distance learners are competent in using the e-learning portal as a practical learning tool and are adept in online communication (Rahim, 2020). Additionally, since pursuing distance education is via the e-learning portal, the distance learners have been regularly posting the latest updates in their discussion forum and actively participating in small group discussions via other medium of communication such as WhatsApp (Tsai et al., 2021). Hence, in line with previous studies by Rajabalee and Santally (2021), even though they are overwhelmed with the overload of knowledge and information, with their experience in the online programme and their determination to succeed, they may feel that having to read a lot and having numerous modules with a high amount of information will not be a problem to them. As a result, this outcome has enriched the literature by recognising that online teaching competencies does not influence student engagement.

Next, the findings have also demonstrated that self-efficacy is not significantly linked to student engagement. In other words, self-efficacy does not affect student engagement in any way. The insignificant association between self-efficacy and student engagement can be found in the respondents of this study, i.e., the distance learners. All the respondents were working adults; thus, supported by Rahim (2019), this finding implies that the distance learners find the distance education programme attractive since they can combine their work experience and the new knowledge learnt to do an excellent job on assignments and to achieve an excellent grade. Also, as the distance education programme is related to their current work, this finding is in line with Landrum (2020) which indicated that the programme has given them a practical understanding of their work, besides strengthening their motivation to enhance their current career and the direction of their profession once they have completed their studies. Thus, supported by Prifti (2020), even though they have to struggle with bandwidth and connectivity limitations, which may result in annoyance and apathy amongst distance learners and influence the ease of learning, with their high level of self-motivation, they may calmly migrate from the conventional learning approach to the latest e-learning approach. Therefore, these findings add to the

current body of literature by proving that self-efficacy does not impact student engagement.

The results from the moderation analysis have revealed a compelling finding, whereby self-efficacy moderated the relationship between online teaching competencies and student engagement. This result suggests that distance learners can control and manage their online learning environment, actively participate in online activities, and persistently complete online tasks. This finding concurs with earlier researchers, such as Ong et al. (2019) who indicated that distance learners with self-efficacy could gain a better engagement in their learning; supported by Sökmen (2021) that self-efficacy may facilitate learner engagement. Moreover, self-efficacy in online learning technology is positively associated with student motivation in using online learning technology (Wang et al., 2013). This finding is aligned with Bandura's (2001) social cognitive theory which states that personal factors such as self-regulation, self-efficacy, and interest are of relevance in the distance education context. Therefore, with 69 percent of respondents in the 3rd year of their programme, it is conceivable to accept that with better experience in online learning, the distance learners are more motivated and confident during online learning, and thus, will be more enthusiastic in their online courses. Consequently, they are highly engaged in online learning.

CONCLUSION

The findings from this study have contributed to the literature through the moderating effect of self-efficacy on online teaching competencies and student engagement. These findings were unlike past studies as this study was conducted amongst distance learners within the Malaysian context. Furthermore, the results have established a vital implication in improving distance learners' engagement which focuses on the development of self-efficacy as an essential personal psychological resource.

One implication is that distance learners with high self-efficacy could engage in challenging online activities, in the online learning environment. In contrast, distance learners with low self-efficacy could become socially isolated and eventually disengage. Therefore, distance learners are encouraged to employ the strategy(s) mentioned in managing online courses as compared to traditional classes. For example, assigning a particular venue or time to focus on assigned

tasks and learning materials when engaging in the learning process. Furthermore, this study suggests that online instructors develop courses that encourage high self-efficacy amongst distance learners. Thus, it is critical for instructors to acquaint themselves with the learning atmosphere and platform in order to assist distance learners. Instructors can offer introductory workshops that encompass knowledge students need to comprehend during the initial stages of online classes and to offer constructive feedback.

Based on this study, it can be stated that online learning still has its shortcomings, especially in terms of student engagement. Therefore, the recommendations based on these findings must be conveyed to the online instructors. Moreover, instructors are encouraged to upgrade their online teaching competencies by: allowing students to contribute their knowledge and expertise amongst the learning community; delivering supplementary resources that inspire students to make more meaningful connections with the course content; practising respect for students during communication; creating visibility during grading to help students keep track of their own progress; giving prompt, constructive feedback on assignments and exams that enhance learning, showing consideration and concern to ensure students learn the course content such as helping to sort out issues which arise during teamwork/group assignments, and efficiently managing course communication through appropriate, acceptable conduct.

Distance education institutions are believed to be vital as they integrate learner support, learner activities, and learning resources in online learning settings. They need to develop strategies to ensure that students are prepared to optimise instruction-related technologies and identify how introductory exercises can be constructed to improve learning efficacy and mitigate anxiety levels. Furthermore, these institutions are encouraged to offer conducive and convenient online learning platforms to enhance learners' intention and self-efficacy to participate in online learning programmes. Training should also be conducted regularly to improve the familiarity of learners and instructors with available online learning platforms.

This research has several limitations. One of the limitations is that this study utilised self-reported data that requires Harman's single factor test to estimate the potential risk for result interpretation. Secondly, as this research used a cross-sectional method, the outcomes may vary as compared to using the longitudinal method. The third limitation is that a low number of samples was utilised. Thus, it is beneficial if future research utilised comparative research designs to investigate

the relationships between teaching competencies, self-efficacy, and student engagement from various online distance learning institutions in Malaysia.

Interviews and focus groups with distance learners are recommended to be conducted in the future to identify other elements that could improve teaching competencies, self-efficacy, and student engagement in Malaysian private higher educational institutions. In terms of research model, longitudinal studies provide solid inferences and better indications, and thus would be more beneficial. Future studies could also compare private and public higher educational institutions to identify dominant cultures in online learning. In addition, future research could also look into identifying the generalisability of the results of this study to other settings in Malaysia.

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