Journal of Nusantara Studies 2024, Vol 9(1) 345-367
Universiti Sultan Zainal Abidin
ISSN 0127-9386 (Online)
http://dx.doi.org/10.24200/jonus.vol9iss1pp345-367

TECHNOPHOBIA, MOTIVATION, AND ACADEMIC ACHIEVEMENT IN DISTANCE LEARNING FOR GRADE 6 STUDENTS IN ABU DHABI, UNITED ARAB EMIRATES

*Nura Arabi, Wail Muin Ismail & Fonny Dameaty Hutagalung

Faculty of Education, University of Malaya,
50603 Kuala Lumpur, Malaysia.
*Corresponding author: nura.arabi@gmail.com

Received: 13.06.2023 Accepted: 26.12.2023

ABSTRACT

Background and Purpose: Limited research has explored the perceptions of technology use in distance learning education among grade six students and its potential influence on academic achievement. Addressing this gap, this study aims to investigate the relationship between technophobia, motivation and academic achievement in the context of distance learning for sixth-grade students in Abu Dhabi, United Arab Emirates.

Methodology: Data were collected through a questionnaire distributed among grade six students in Abu Dhabi, resulting in 399 responses. The respondent pool comprised 173 female students and 269 male students. The collected data underwent analysis using SPSS and the Structural Equation Model through SMART-PLS.

Findings: The study found that technophobia negatively impacts students' academic achievement in distance learning, while motivation positively affects technophobia and academic achievement in distance learning.

Contributions: The findings provide insights for educational stakeholders, teachers, and leaders in the Ministry of Education to develop policies and support students in their distance education experience.

Keywords: Technophobia, motivation, distance learning, educational technologies, academic achievement.

Cite as: Arabi, N., Ismail, W. M., & Hutagalung, F. D. (2024). Technophobia, motivation and academic achievement in distance learning for grade 6 students in Abu Dhabi, United Arab Emirates. *Journal of Nusantara Studies, 9*(1), 345-367. http://dx.doi.org/10.24200/jonus.vol9iss1pp345-367

1.0 INTRODUCTION

The Ministry of Education (MOE) manages the education system in the United Arab Emirates (UAE) in a way that students can get high-quality education through policy-making and school regulation (MOE, 2020a). Technological integration in all educational facilities has been well established at all levels, from kindergarten to university (MOE, 2020b). Regardless of this well-established technology-based infrastructure, the dropout rates in distance education classes are still increasing in higher education (Almuraqab, 2020). When students at the University of Dubai were asked about their preference between distance education and traditional education, only 26% preferred distance education (Almuraqab, 2020). The same findings were also observed with high school students in UAE (AlMahdawi et al., 2021). While technology seems to be facilitating the experience of education, technology in distance learning has raised many concerns, such as students' isolation and feeling of loneliness, which can impact students' motivation to continue their distance education class leading to higher dropout rates (DiMattio & Hudacek, 2020; Shorey et al., 2021; Szymkowiak et al., 2021). According to Khasawneh (2020a), the dropout rates could be related to how students feel when using technology in distance education.

Distance learning courses rely heavily on computer use, which can create difficulties for students being anxious about using new technology (Juutinen et al., 2011; Gerli et al., 2022). Students' reactions to technical difficulties can have a significant impact on their learning outcomes, with those who react positively were sufficiently equipped to overcome obstacles as compared to those who respond negatively (Juutinen et al., 2011; Gerli et al., 2022). The negative reaction to the use of technology in distance education is said to be technophobia (Khasawneh, 2022). Technophobia can be shown as frustration or anxiety in distance education (Szymkowiak et al., 2021). Students suffering from technophobia tend to be less motivated to carry on with their distance education lessons, which causes higher drop-out rates compared to the traditional classroom (Szymkowiak et al., 2021). Understanding adoption factors and challenges is crucial for successful usage of the distance learning system. However, there's no consensus on key adoption factors, leading to a knowledge gap (Almaiah & Al Mulhem, 2020).

Furthermore, most studies investigated students' attitudes toward distance learning, technophobia, motivation, and academic achievement and primarily focused on higher education students and teachers (Almaiah et al, 2022; Jarrah & Almarashdi, 2019; Bawa'aneh, 2021). Little research has been conducted on the middle school population until the pandemic (Bawa'aneh, 2021; Ajlouni & Rawadieh, 2022). As students move from elementary to middle school, they encounter new academic and organizational demands while navigating multiple teachers and locations (Cook et al., 2007). This can pose a challenge to maintaining their social-emotional and cognitive well-being (Erlback, 2003; Rink & Hall, 2008). Improper handling of this transition has been found to negatively affect academic performance and positively affect the stress level of students (Akos & Martin, 2003; Akos, 2006). As technology becames more integrated into education, it is crucial to examine how the option of distance learning classes during this transition may impact students' motivation and academic achievement. Previous research has suggested that motivation can act as a mediator in the relationship between technophobia and academic success (Alamri et al., 2020; Diwakar et al., 2023). When students are motivated to overcome their technophobia, they are more likely to actively engage with technology, seek help when needed and persevere through challenges (Alamri et al., 2020; Diwakar et al., 2023). Therefore, it is crucial to investigate the relationship between technophobia, motivation, and academic achievement in distance learning for middle school students. This study proposed the hypothesis that technophobia affects students' academic achievement in distance learning, and motivation mediates this relationship between technophobia and academic achievement. Understanding this relationship is vital in addressing the high dropout rates observed in distance education classes.

RQ1: Is there any significant relationship between technophobia and academic achievement in distance learning for Grade six students in Abu Dhabi?

RQ2: Is there a significant mediating effect of motivation on the relationship between technophobia and academic achievement in distance learning for Grade six students in Abu Dhabi?

2.0 LITERATURE REVIEW

2.1 Technophobia

Over the years, past studies have extensively studied emotions and their impact on the learning process in traditional education (Weare, 2004; Khasawneh, 2018a, 2018b). The connection between emotions and learning in distance learning is an area that is still being studied (Hobson & Puruhito, 2019; Khasawneh, 2020b). The frustration that comes with using computers in education is a common phenomenon, and for some, this frustration has developed into technophobia, which is the fear or dislike of advanced devices in distance education (Lembani et al., 2020; Al Shamari, 2022). Since technophobia can take on various interpretations, it has become more complex with the evolution of technology (Lembani et al., 2020; Al Shamari, 2022). The reason behind this fact is the complex nature of technology and the level of difficulty in understanding it, which in turn increases a person's likelihood of experiencing anxiety related to its use (Lembani et al., 2020; Al Shamari, 2022). Negative self-talk when dealing with computers or technology can be explained by computer self-efficacy, which plays a significant role in frustration levels (Elyakim et al., 2019; Faloye et al., 2022; Gerli et al., 2022). Almost in all distance learning, students experience negative self-talk at some point during their studies, whether it relates to technical aspects, course design, lack of instructions, or overall experience of distance learning (Lembani et al., 2020; Schauffel et al., 2021; Al Shamari, 2022). For some students, negative self-talk can result in maladaptive responses, which usually exacerbate problems by creating obstacles to solving the initial problem (Khasawneh, 2018a, 2018b). Maladaptive responses can lead to aggression and withdrawal (Khasawneh, 2018a, 2018b).

2.2 Motivation

Studying the motivational perspective in distance learning is crucial as it does not require any physical presence of teachers needed to constantly motivate students while they pursue their education (Nguyen et al., 2019; Diwakar et al., 2023). Students usually show different reactions at the start of an online course, which vary according to their motives, engagement, and interest in learning and expanding their knowledge (Goksu et al., 2021). Conversely, students who engage in distance learning out of necessity are likely to drop out of the course, have a negative learning experience, and feel demotivated to continue (Nguyen et al., 2019; Diwakar et al., 2023). Distance learning often creates more responsibility for students than traditional teaching, so motivation is essential to keep up with their studies (Kan et al., 2021). Students who attended blended learning (a combination of distance and in-class learning) tend to be more motivated to continue their education (Gosku et al., 2021; Kan et al., 2021). The learning process and the excessive use of technology during distance education might leave the students with psychological trauma affecting their motivation and learning experience (Heilat & Seifert, 2019; Alamri et al., 2020; Diwakar et al., 2023).

2.3 Academic Achievement

Academic achievement encompasses a wide range of skills and competencies that enable students to succeed in their education, including communication, critical thinking, and subject knowledge (Artino, 2009). It serves as a measure of student's progress towards their learning goals and is assessed through various methods like tests, assignments, and projects (Artino, 2009). Factors like motivation, engagement, and the quality of instruction can impact academic achievement (Artino, 2009). Academic achievement is sometimes quantified as a percentage or represented by a Grade Point Average (GPA), which is calculated by assigning a numerical value to a letter grade (Artino, 2009). For the purpose of this study, students were asked to provide their GPA.

3.0 THEORETICAL FRAMEWORK

3.1 Technophobia, Motivation, and Broaden-and-Built Theory

The Broaden-and-Build theory, originally proposed by Barbra Frederickson in 1988 (Cohn & Fredrickson, 2010; Fredrickson, 1998), is a positive psychology concept focused on using positive emotions to expand an individual's thought-action repertoire and develop enduring personal resources (Fredrickson, 1998). When experiencing positive emotions such as excitement, happiness, and relaxation, a person's thinking and behavior are expected to be broadened (Fredrickson, 1998). This openness to new ideas and experiences is in stark contrast to individuals experiencing negative emotions like sadness or anger, who tend to withdraw and avoid trying new things (Fredrickson, 2004, 2005, 1998). By embracing positive emotions, individuals can gain new skills knowledge and social connections, leading to improved health and self-fulfillment (Cohn & Fredrickson, 2010; Fredrickson, 1998). The theory highlighted the importance of positive emotions in fostering personal growth and well-being (Fredrickson, 1998).

In summary, the Broaden-and build theory posits that positive emotions enable individuals to think and act more openly, which facilitates personal development and resource accumulation (Cohn & Fredrickson, 2010; Fredrickson, 1998). Embracing positive emotions leads to expanding thinking and willingness to try new things, and ultimately contributes to enhanced health and self-fulfillment (Cohn & Fredrickson, 2010; Fredrickson, 1998).

3.2 Broaden-and-Build Theory and Its Relationship to Variables

The Broaden-and-Build theory suggests that positive emotions, such as joy and happiness, broaden the individuals' awareness, and encourage the exploration and learning of new skills (Mohammadipoue et al., 2018). In the context of distance learning, positive emotions can lead students to build on their resources, like developing technical competence and the willingness to overcome challenges (Fredrickson, 2005). This cycle of building and broadening is predicted to enhance motivation and ultimately, academic achievement. Positive emotions also help students develop resilience to cope with setbacks (Mohammadipoue et al., 2018).

Distance learning, which involves using technology, can be challenging for students who have technophobia or fear of using technology in education (Mohammadipoue et al., 2018). However, the Broaden-and-Build theory proposes that positive emotions, like interests and excitement, can help students overcome technophobia and increase their motivation to engage in distance learning (Mohammadipoue et al., 2018). By fostering positive emotions through effective instruction and support, educators can create a positive learning environment that enhances motivation and encourages students to explore and interact with technology. Therefore, this paper presents a straight forward theoretical framework based on the mentioned theory, Figure 1. How the students feel while using technology in distance education is key.

Emphasizing positive emotions in distance learning can lead to better academic performance and a greater sense of self-efficacy among students. Hence, based on the Broaden-and-Build theory, it is crucial to examine the impact of technophobia and motivation on academic achievement in distance education for Grade 6 students in Abu Dhabi, UAE. Thus, the hypothesis was specified as:

H1a: There is a significant effect of technophobia on academic achievement for Grade 6 students in Abu Dhabi, United Arab Emirates.

H1b: There is a significant effect of motivation on academic achievement for Grade 6 students in Abu Dhabi, United Arab Emirates.

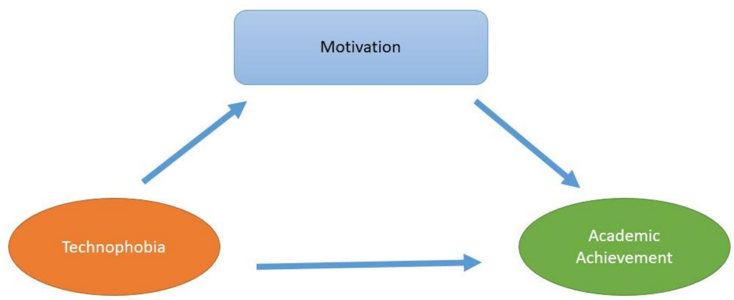

Figure 1: Theoretical framework

4.0 RESEARCH METHODOLOGY

4.1 Population and Sampling

To achieve more dependable and accurate findings, this study aims to collect data from a large population of students. The target group consisted of Grade 6 students in Abu Dhabi, United Arab Emirates (UAE). The MOE reports that the number of female students in government schools in Abu Dhabi is 7856 females and 7290 males (MOE, 2018). The sample size was determined by utilizing Krejcie and Morgan's (2011) sample table to identify the most appropriate sample for the research. According to this formula, the sample size for this study was calculated to be a minimum of 636 participants.

4.2 Sampling Method

A cluster sampling method was employed in this study to obtain a representative sample of students. The selection of students was conducted as follows: (i) the number of students was first identified in the city of Abu Dhabi by dividing them into sub-groups or clusters, differentiated by school types; (ii) schools were selected randomly from these clusters; and (iii) students from the selected schools were then randomly chosen and asked to complete a questionnaire. To determine the cluster size, the total expected sample was divided by the average number of schools in Abu Dhabi. For instance, the research has divided 400 by 8 schools, resulting in 50 students being selected from each school.

4.3 Research Instrument

This research used a questionnaire as a tool to collect the data. The questionnaire was divided into three sections. The first section collected the demographic characteristics of the participants, including gender (male/ female) and Grade Point Average (GPA) to measure academic achievement. The second section has questions related to technology use in distance learning or the Technophobia scale. The scale for technophobia was adopted from Churchill (1979). This scale was developed and later improvised by Rosen and Weil in 1992 and the scale is still being used today. The third section had questions regarding the motivation variable. The Motivation in Distance Learning (MiDL) scale was used (Pintrich et al., 1991). This scale was adopted from an 81-item reported instrument designed by Pintrich et al., 1991. The model is still being used by many educational psychologists (Duncan & McKachei, 2005).

The questionnaire encompassed a 5-point Likert scale ranging from 1 as “strongly disagree” to 5 as “strongly agree”. Two professional translators collectively translated the questionnaire into Arabic to avoid any mistakes. Permission from the Ministry of Education in Abu Dhabi to collect the data was taken first.

4.4 Data Analysis Method

The Statistical Package for Social Sciences (SPSS) software version 25 was used to answer questions. The questionnaire responses were coded by using SPSS as it also was used to clean and prepare data. Then, data was screened for the following issues: normality, outliers, missing data, and multicollinearity. The z-score helped to find out outliers. Variance inflation factor (VIF) was used to check for multicollinearity, while normal distribution and skewness were also assessed.

Confirmatory Factor Analysis (CFA) was conducted to empirically test the reliability and validity of the measurement model. Assessment of the measurement model went through two stages: (i) the assessment of the measuring model’s goodness of fit, (ii) the assessment of convergent validity, discriminant validity, and reliability. During this stage, the variables went under scrutiny.

After assessing the goodness of fit, the composite reliability and two types of validity (convergent and discriminant validity) were checked. Strong evidence for validity and reliability should be present at this stage. Reliability was then assessed by composite reliability (CR). CR should be more than 0.7. The model assessment also tested convergent validity by four conditions: (i) the standardized factor loading of the constructs, which should be more than 0.7; (ii) the average variance extracted (AVE), which should be 0.5 or more; (iii) CR which should be more than 0.7; and (iv) a comparison between the values of CR and AVE to make sure that CR is higher than AVE.

Lastly, the study also conducted the Structural Equation Model (SEM) in SMART-PLS version 4 software, which allowed examining more than one regression equation/ relationship in one model. The SEM was an appropriate method for predicting the relationship of several variables.

5.0 ANALYSIS AND RESULTS

Table 1 identified the response rate of the collected data. Firstly, the study attempted to detect outliers when checking the responses of 399 participants. There was 0 omitted analysis. Outliers were diagnosed by calculating the standardized z-score for each variable (Tabachnick & Fidell, 2013). A z-score greater than +3.29 or less than −3.29 initiated the presence of an outlier. Assessment of the data in this study indicated 0 outliers whose z-scores fell within the range of −3.29 and +3.29.

Table1: Response rate of the collected data

	Number of Questionnaires	Percentage
Distributed Questionnaires	442	100%
Completed Questionnaires	399	90.86
Unreturned Questionnaires	39	9.14%
Unstable Questionnaires (Outliers)	0	0%
Stable Questionnaires	399	90.86%
Male Students	269	60.8%
Females Students	173	39.2%

Table 2: Reliability & convergent validity

Constructs	Items	Factor Loading	Cronbach's Alpha	Composite Reliability	Average Variance Extracted
Technophobia			0.947	0.949	0.526
	T2_r	0.728			
	T4	0.731			
	T5_r	0.712			
	T6	0.735			
	T7	0.734			
	T8	0.719			
	T10	0.722			
	T11	0.720			
	T12	0.724			
	T14	0.736			
	T15	0.728			
	T16	0.735			
	T17_r	0.721			
	T18_r	0.707			
	T20_r	0.741			
	T21	0.733			
	T22_r	0.714			
	T23_r	0.713			
Motivation			0.946	0.947	0.587
	M1	0.786			
	M2	0.786			
	M4	0.783			
	M5	0.778			
	M6	0.747			
	M7	0.764			

http://dx.doi.org/10.24200/jonus.vol9iss1pp345-367

Table 2 (Continue)

Constructs	Items	Factor Loading	Cronbach's Alpha	Composite Reliability	Average Variance Extracted
	M8	0.774			
	M9	0.743			
	M10	0.786			
	M11	0.786			
	M14	0.741			
	M16	0.776			
	M17	0.772			
	M18	0.736			

The reliability was tested using Composite Reliability (CR) and Cronbach's alpha in the measurement model. Firstly, the factor loadings of 7 items that measure motivation and 5 items that measure technophobia were less than the acceptable level of 0.70. Hence, these items are deleted from the model. All the remaining items had factor loadings higher than 0.70, indicating to have sufficient variance in the corresponding variable (Table 2).

Secondly, the Cronbach's Alpha scores of the variables 'technophobia' and 'motivation' were 0.947 and 0.946 respectively, while the Composite Reliability scores of the variables 'technophobia' and 'motivation' were 0.949 and 0.947 respectively, which were higher than 0.70 and indicated to have excellent reliability. Thirdly, the average variance extracted (AVE) scores of the variables 'technophobia' and 'motivation' was 0.526 and 0.587, which was higher than 0.50 and indicated to have achieved acceptable convergent validity.

The normality of the data was checked through skewness and kurtosis. Hair et al. (2017) stated that the skewness value should be between −2 and +2 and kurtosis between −2 to +2; the researcher followed these guidelines in this study. Table 3 shows skewness and kurtosis values for all variables, which indicate that the assumption of normality was not violated. Therefore, all variables were considered normal.

Table 3: Skewness and Kurtosis for all constructs

constructs	mean	std. deviation	skewness	kurtosis
Technophobia	2.1712	0.82455	0.678	-0.673
Motivation	3.8486	0.77253	-0.417	-0.970
Academic Achievement	3.0298	0.74790	-0.932	0.266

Table 4: The correlation between independent variables

Construct	AA	Technophobia	Motivation	Tolerance	VIF
Academic Achievement	1.000				
Technophobia	0.679 (< 0.001)***	1.000		0.819	1.221
Motivation	–0.621 (< 0.001)***	–0.760 (< 0.001)***	1.000	0.259	3.862

Note. AA = Academic Achievement.

*** $p < 0.001$

Multicollinearity is the problem of high linear relationships ($r = 0.9$ or above) between independent variables in a regression model (Pallant, 2016). Hair et al. (2017) suggested that the variance inflation factor (VIF) should be no more than 10 and tolerance must be greater than 0.10; this means that a VIF above 10 and tolerance below 0.10 in the regression model indicate multicollinearity which should be remedied before further analysis. In this study, the tolerance values for all independent variables were more than 0.10, while all the VIF values were less than 10 (Table 4). This indicated that multicollinearity between the variables did not exist.

To aid the interpretation of the results, the categories for each mean score are either low (1.00-2.33), moderate (2.34-3.67), or high (3.68-5.00) (Pihie et al., 2011; Bagheri & Pihie, 2014). The overall mean score and standard deviation for students' technophobia were 2.17 and 0.824 respectively, indicating a moderate level of technophobia. From the results, it can be said that Grade 6 students in Abu Dhabi have technophobia in distance learning within the moderate range.

The Heterotrait-Monotrait ratio matrix and the Fornell-Larcker Criterion matrix were calculated to assess discriminant validity in the measurement model. Results indicated that the

Heterotrait-Monotrait ratio was less than the threshold level of 0.85 (Henseler et al., 2015), leading to the establishment of the HTMT ratio (Table 5). Furthermore, the Fornell-Larcker Criterion matrix indicated that the square root of average variance extracted by each construct was higher than the correlation between the constructs (Henseler et al., 2015), indicating that the Fornell-Larcker principle has been achieved (Table 5). This suggested that the model had good discriminant validity. Moreover, the variance inflation factor (VIF) was assessed to test the multicollinearity issue. The study found that the VIF scores of all variables were less than 10, as Henseler et al. (2015) suggested. Hence, there was no multicollinearity issue. Later, hypotheses were checked using correlation.

Table 5: Heterotrait-Monotrait ratio (HTMT) & Fornell-Larcker criterion

	Heterotrait-Monotrait Ratio			*Fornell-Larcker Criterion*		
	AA	M	T	AA	M	T
Academic Achievement	1			1		
Motivation	0.695	1		0.679	0.766	
Technophobia	0.621	0.774	1	–0.616	–0.752	0.725

Note. AA = Academic Achievement, M = Motivation, T = Technophobia.

5.1 Hypothesis Testing

Structural Equation Model (SEM) was conducted to examine more than one regression equation/ relationship in one model in this study. To test the hypothesis (H1a), the results in Table 6 indicated that there was a significant negative relationship between technophobia and academic achievement (β = –0.238; p < 0.001). Also, CR (t = 3.674) was more than 1.96. This means that technophobia has a significant negative influence on academic achievement. Therefore, the results support this hypothesis (H1a).

Similarly, to test the hypothesis (H1b), the results in Table 6 indicated that there was a significant relationship between motivation and academic achievement (β = 0.316; p < 0.001). Also, CR (t = 7.165) was more than 1.96. This means that motivation has a significant effect on academic achievement. Therefore, the results support this hypothesis (H1b).

http://dx.doi.org/10.24200/jonus.vol9iss1pp345-367

Table 6: Hypothesis testing – Direct relationships

	Path	Path Coefficient	Standard Deviation	T statistics	P values	Results
Direct Relationship						
H1a	T → AA	–0.238***	0.065	3.674***	0.000	Supported
H1b	M → AA	0.316***	0.044	7.165***	0.000	Supported

Note. AA = Academic Achievement, M = Motivation, T = Technophobia.

*** $p < 0.001$

Table 7: Hypothesis testing – Mediation analysis

	Path	Path Coefficient	Standard Deviation	T statistics	P values	Results
Total effect						
	T → AA	–0.707***	0.049	14.539***	0.000	Supported
Direct effect						
	T → AA	–0.238***	0.065	3.674***	0.000	Supported
Indirect effect						
H2	T → M → AA	–0.237***	0.034	6.939***	0.000	Supported

Note. AA = Academic Achievement, M = Motivation, T = Technophobia,

*** $p < 0.001$

To test the mediation of motivation, direct and indirect effects were analyzed separately to determine if there is a direct relationship between technophobia and academic achievement or if there is an indirect relationship between the variables through motivation as mediation. Firstly, direct effects were examined; it was found to be negatively significant. However, with the inclusion of the mediating variable, i.e., motivation, the impact of technophobia on academic achievement decreased (Table 7). In other words, the indirect effect of technophobia on academic achievement through motivation was also found to be significant. This shows that the relationship between technophobia on academic achievement was partially mediated by motivation (Table 7).

6.0 DISCUSSION

Here, the findings of this hypothesis were aligned with previous research. It revealed that students with technophobia tend to experience reluctance and negative emotions when using computers in distance learning. Technophobia, or the fear of utilizing technology in distance education, can have a detrimental effect on academic success in remote learning (Henderson & Corry, 2021; Khasawneh, 2022). This may be attributed to the heavy reliance on technology in distance learning, where students, especially younger ones who require additional support, may encounter difficulties if they are apprehensive or hesitant about using technology (Henderson & Corry, 2021; Khasawneh, 2022). For instance, if students feel uncomfortable operating a computer or navigating an online platform, they may encounter challenges while completing assignments, accessing resources, or communicating with teachers and peers (Henderson & Corry, 2021; Khasawneh, 2022; Ndibalema, 2022). Consequently, this can lead to frustration, lack of motivation and ultimately impact their academic performance (Khasawneh, 2022).

Technophobia also increases anxiety and stress, which affect students' capacity to learn and retain information (Lembano et al., 2020; Ndibalema, 2022). Extensive research has demonstrated that students experiencing heightened levels and stress tend to underperform academically compared to their more relaxed and comfortable peers within the learning environment (Lembani et al., 2020; Khasawneh, 2022). Numerous studies have yielded similar findings in their regard. For instance, enjoyment significantly influences students' inclination to engage in e-learning experiences. Ulfert-Blank and Schmidt (2022) also found comparable results, highlighting the impact of self-efficacy on students' feelings in distance learning classes, ultimately affecting their academic achievement. Magen-Nagar and Shonefeld (2018) and Khasawneh (2022) found that negative emotions experienced during participation in distance learning courses tend to demotivate students, while positive emotions associated with using technology in such learning courses serve as a driving force to continue their education. Consequently, emotions can exert either a positive or negative influence on academic performance in distance learning.

Research studies examining the role of motivation in distance learning have discovered that, despite students' initial motivation to enroll in online courses for improved grades, dropout rates are higher when technophobia is present (Hobson & Puruhito, 2019). Abou El-Seoud et al. (2014) found that increased technology usage does not necessarily lead to higher motivation to participate in distance learning classes, and it does not foster a positive perception of the distance learning experience. Some studies have contended that students who possess strong motivation to learn and actively engage with online platforms are more likely to overcome technophobia and achieve favorable academic outcomes, whereas students lacking motivation may struggle to overcome their fear of technology, leading to poor academic performance (Konecki, 2020; Shaheen, 2022)

Moreover, using technology for educational purposes can still negatively impact academic achievement (Magen-Nagar & Shonefeld, 2018). While motivation plays a crucial role in education and can help students overcome their fear of technology and engage with online learning platforms, it may not be sufficient to eliminate the negative impact of technophobia. Several studies have highlighted the difficulties students face when using technology, and how technophobia can impact their learning abilities and information retention, which ultimately have affected academic achievement (Konecki, 2020; Shaheen, 2022). Furthermore, highly motivated students who embrace technology are less likely to experience technophobia and are more likely to thrive in distance education (Konecki, 2020; Shaheen, 2022). Motivation can be influenced by various factors such as personal interest in the subject matter, perceived usefulness of technology, and the presence of supportive peers or instructors (Oliveira et al., 2019).

7.0 CONCLUSION

Emotions are a big part of the education process. As identified, technophobia had a negative impact on academic achievement in distance learning. It is crucial to explore the role of motivation as a significant variable within the context of the distance learning environment. Consequently, the finding of this study demonstrated that technophobia and motivation shape the experience of Grade 6 students in distance learning and impact their academic performance.

Future research can examine the development process of technophobia, especially in younger students and leaders. Also, more studies can be conducted to identify the specific aspect of technology that causes anxiety and frustration. This information can be used to develop plans to support future students in distance learning environments. It is also crucial to address any misconceptions or previous beliefs that students may have about learning through technology, to provide accurate information, and to alleviate any concerns they may have. Although the younger generation is often assumed to be more technology-savvy and highly comfortable with technology, it is not always the case. It is necessary to distinguish between being technology-savvy and being a digital learner and to explore the learning styles that can develop from distance education. More research is needed to gain a deeper understanding of this issue.

This study sample consisted of students in schools where this area of study was rarely addressed in the literature for distance learning outcomes and never examined Emirati schools to the researcher's knowledge. Consequently, students might attempt to fake the questionnaire by giving socially desirable answers. Lastly, considering the objective nature of the research, students' responses to the questionnaires were limited to their understanding and realization of the questions.

As technology is expanding and schools are employing it more than ever before, especially after the pandemic, everyone had a sudden shift from face-to-face to distance learning. With that being said, more technology is being introduced into the education system and more testing is being done to determine the effectiveness and efficiency of the technology in use. These tests also determine the efficiency of technology in students' usability and how students feel about technology in distance education.

This research sheds light on this area and discusses technophobia where the results showed that some students are not comfortable with technology being used in their education. If technophobia exists, it can affect their academic achievement. The results showed that technophobia has a negative influence on academic achievement. It also sheds light on the role of motivation in distance learning that can help students overcome technophobia.

The area of study needs further research as there are so many factors that can play a role in this distance education experience, especially for young ones. Not enough research is done for this age group. In other words, this research on technophobia and academic achievement in distance learning for Grade 6 students is crucial for understanding the factors that impact students' engagement and success in an online learning environment. Technophobia, which is the fear, anxiety, or frustration when using technology, can greatly impact students' ability to effectively use technology and participate in online learning.

Research on these topics can inform interventions and strategies to support students in overcoming technophobia. This can ultimately lead to improved academic achievement for Grade 6 students. The Ministry of Education (MOE) should take those factors into consideration to improve the distance learning experiences, especially for young students.

Overall, this research on the effect of technophobia on motivation academic achievement in distance learning for Grade 6 students provides valuable insight for educators, institutions, technology developers, the Ministry of Education, and parents to support students' engagement and success in their distance learning education.

REFERENCES

Abou El-Seoud, M. S., Taj-Eddin, I. A., Seddiek, N., El-Khouly, M. M., & Nosseir, A. (2014). E-learning and students' motivation: A research study on the effect of e-learning on higher education. *International Journal of Emerging Technologies in Learning*, *9*(4), 20–26.

Akos, P. (2006). Extracurricular participation and the transition to middle school. *Research in Middle-Level Education Online, 29*(9), 1-9.

Akos, P., & Martin, M. (2003). Transition groups for preparing students for middle school. *Journal for Specialists in Group Work, 28*(2), 139-154.

Ajlouni, A. O., & Rawadieh, S. M. (2022). Technophobia and technophilia among undergraduates: Cross-national research in Jordan, Qatar, and Egypt. *Journal of Social Studies Education Research, 13*(4), 24-55.

Alamri, H., Lowell, V., Watson, W., & Watson, S. L. (2020). Using personalized learning as an instructional approach to motivate learners in online higher education: Learner self-determination and intrinsic motivation. *Journal of Research on Technology in Education, 52*(3), 322-352.

Almaiah, M. A., Hajjej, F., Lutfi, A., Al-Khasawneh, A., Shehab, R., Al-Otaibi, S., & Alrawad, M. (2022). Explaining the factors affecting students' attitudes to using online learning (Madrasati platform) during COVID-19. *Electronics, 11*(7), 1-15.

AlMahdawi, M., Senghore, S., Ambrin, H., & Belbase, S. (2021). High school students' performance indicators in distance learning in chemistry during the COVID-19 pandemic. *Education Sciences, 11*(11), 1-26.

Almaiah, M., & Al Mulhem, A. (2020). Thematic analysis for classifying the main challenges and factors influencing the successful implementation of e-learning system using NVivo. *International Journal of Advanced Trends in Computer Science and Engineering, 9*(1), 142-152.

Almuraqab, N. (2020). Shall universities at the UAE continue distance learning after the Covid-19 pandemic? Revealing students' perspective. *International Journal of Advanced Research in Engineering and Technology, 11*(5), 226–233.

Al Shamari, D. (2022). Challenges and barriers to e-learning experienced by trainers and training coordinators in the Ministry of Health in Saudi Arabia during the COVID-19 crisis. *Plos One, 17*(10), e0274816.

Artino, A. R. (2009). Think, feel, act: Motivational and emotional influences on military students' online academic success. *Journal of Computing in Higher Education, 21*(1), 146–166.

Bagheri, A., & Pihie, Z. A. L. (2014). *The factors shaping entrepreneurial intentions*. Cambridge Scholars Publishing.

Bawa'aneh, M. S. (2021). Distance learning during COVID-19 pandemic in UAE public schools: Student satisfaction, attitudes and challenges. *Contemporary Educational Technology, 13*(3), 1-13.

Cohn, M. A., & Fredrickson, B. L. (2010). In search of durable positive psychology interventions: Predictors and consequences of long-term positive behavior change. *The Journal of Positive Psychology, 5*(5), 355-366.

Cook, P., MacCoun, R., Muschkin, C., & Vigdor, J. (2007). *Should sixth grade be in elementary school? An analysis of grade configuration and student behavior.* (Working paper series). National Bureau of Economic Research.

Churchill, G. A. (1979). A paradigm for developing better measures of marketing constructs. *Journal of Marketing Research, 16*(1), 64–73.

DiMattio, M. J. K., & Hudacek, S. S. (2020). Educating generation Z: Psychosocial dimensions of the clinical learning environment that predict student satisfaction. *Nurse Education in Practice, 49*(1), 102901.

Diwakar, S., Kolil, V. K., Francis, S. P., & Achuthan, K. (2023). Intrinsic and extrinsic motivation among students for laboratory courses-assessing the impact of virtual laboratories. *Computers & Education, 198*(1), 104758.

Duncan, T. G., & McKeachie, W. J. (2005). The making of the motivated strategies for learning questionnaire. *Educational Psychologist, 40*(2), 117-128.

Elyakim, N., Reychav, I., Offir, B., & McHaney, R. (2019). Perceptions of transactional distance in blended learning using location-based mobile devices. *Journal of Educational Computing Research*, *57*(1), 131-169.

Erlback, A. (2003). *The middle school survival guide*. Walker Publishing Inc.

Faloye, S., Ranjeeth, S., & Ako-Nai, S. (2022). Understanding age differences in technophobia: A South African case study. *South African Computer Journal*, *34*(1), 33-60.

Fredrickson, B. L. (1998). What good are positive emotions? *Review of general psychology*, *2*(3), 300-319.

Fredrickson, B. L. (2004). The broaden–and–build theory of positive emotions. *Philosophical Transactions of The Royal Society of London. Series B: Biological Sciences*, *359*(1449), 1367-1377.

Fredrickson, B. L. (2005). The broaden-and-build theory of positive emotions. In F. A. Huppert, N. Baylis, & B. Keverne (Eds.), *The science of well-being* (pp. 803-855). Oxford University Press.

Gerli, P., Clement, J., Esposito, G., Mora, L., & Crutzen, N. (2022). The hidden power of emotions: How psychological factors influence skill development in smart technology adoption. *Technological Forecasting and Social Change*, *180*(1), 121721.

Göksu, İ., Ergün, N., Özkan, Z., & Sakız, H. (2021). Distance education amid a pandemic: Which psycho-demographic variables affect students in higher education? *Journal of Computer Assisted Learning*, *37*(6), 1539-1552.

Hair, J. F., Hult, G. T. M., Ringle, C., & Sarstedt, M. (2017). *A primer on partial least squares structural equation modeling (PLS-SEM)* (2nd ed.). Sage.

Henderson, J., & Corry, M. (2021). Teacher anxiety and technology change: A review of the literature. *Technology, Pedagogy and Education*, *30*(4), 573-587.

Heilat, M. Q., & Seifert, T. (2019). Mental motivation, intrinsic motivation and their relationship with emotional support sources among gifted and non-gifted Jordanian adolescents. *Cogent Psychology*, *6*(1), 1587131.

Henseler, J., Ringle, C. M., & Sarstedt, M. (2015). A new criterion for assessing discriminant validity in variance-based structural equation modeling. *Journal of the Academy of Marketing Science*, *43*(1), 115-135.

Hobson, T., & Puruhito, K. (2019). Going the distance - Online course performance and motivation of distance-learning students. *Online Learning*, *22*(4), 129-140.

Jarrah, A., & Almarashdi, H. (2019). Mathematics teachers' perceptions of teaching gifted and talented learners in general education classrooms in the UAE. *Journal for the Education of Gifted Young Scientists*, *7*(4), 835-847.

Juutinen, S., Huovinen, T., & Yalaho, A. (2011). Technophobia as an emotional obstacle in e-learning. *International Journal for e-Learning Security*, *1*(2), 104-109.

Kan, S. G., Çaltikusu, Ç., & Sensoy, S. (2021). The views of university students about the achievements and motivations of the distance education process during the pandemic period. *Journal of Educational Psychology - Propositos y Representaciones*, *9*(3), e1165.

Khasawneh, O. Y. (2022). Technophobia: How students' technophobia impacts their technology acceptance in an online class. *International Journal of Human–Computer Interaction*, *39*(13), 2714-2723.

Khasawneh, O. Y. (2020a). Transformational leaders help their employees overcome their technophobia. *International Journal of Technology and Human Interaction*, *3*(16), 70–85.

Khasawneh, O Y. (2020b). Technical knowledge and ability: Expectation verses reality the dunning-kruger effect. *International Journal of Business Management and Commerce*, *2*(5), 21-29.

Khasawneh, O. Y. (2018a). Technophobia: Examining its hidden factors and defining it. *Technology in Society*, *54*(1), 93-100.

Khasawneh, O. Y. (2018b). Technophobia without borders: The influence of technophobia and emotional intelligence on technology acceptance and the moderating influence of organizational climate. *Computers in Human Behavior*, *88*(1), 210–218.

Konecki, M. (2020). Impact of distance learning on motivation and success rate of students during the COVID-19 pandemic. In *2020 43rd International Convention on Information, Communication and Electronic Technology* (pp. 813-817). IEEE.

Lembani, R., Gunter, A., Breines, M., & Dalu, M. T. B. (2020). The same course, different access: The digital divide between urban and rural distance education students in South Africa. *Journal of Geography in Higher Education*, *44*(1), 70-84.

Magen-Nagar, N., & Shonfeld, M. (2018). The impact of an online collaborative learning program on students' attitude towards technology. *Interactive Learning Environments, 26*(5), 621-637.

MOE. (2018). Reports and statistics. https://www.moe.gov.ae/En/OpenData/Pages/ReportsAndStatistics.aspx

MOE. (2020a). The launch of the distance learning initiative targeting all students in the country for two weeks. https://www.moe.gov.ae/Ar/MediaCenter/News/pages/elearning2.aspx

MOE. (2022b). Digital transformation journey in education. https://www.moe.gov.ae/En/ImportantLinks/Pages/DigitalTransformation.aspx

Mohammadipour, M., Rashid, S. M., Rafik-Galea, S., & Thai, Y. N. (2018). The relationships between language learning strategies and positive emotions among Malaysian ESL. *International Journal of Education and Literacy Studies*, *6*(1), 86-96.

Ndibalema, P. (2022). Constraints of transition to online distance learning in higher education institutions during COVID-19 in developing countries: A systematic review. *E-Learning and Digital Media*, *19*(6), 595-618.

Nguyen, T. M., Nham, T. P., Froese, F. J., & Malik, A. (2019). Motivation and knowledge sharing: A meta-analysis of main and moderating effects. *Journal of Knowledge Management*, *23*(5), 998-1016.

Oliveira, E. C., Bittencourt, R. A., & Trindade, R. P. (2019). Introduction to computational thinking for K-12 educators through distance learning. In *2019 IEEE Frontiers in Education Conference* (pp. 1-9). IEEE.

Pallant, J. (2016). *SPSS survival manual: A step by step guide to data analysis using SPSS*. Open University Press.

Picard, R., & Klein, J. (2002). Computers that recognize and respond to user emotion: Theoretical and practical implications. *Interacting with Computers, 14*(1), 141-169.

Pihie, Z. A. L., Sadeghi, A., & Elias, H. (2011). Analysis of head of departments leadership styles: Implication for improving research university management practices. *Procedia-Social and Behavioral Sciences, 29*(1), 1081-1090.

Pintrich, P. R., Smith, D. A. F., Garcia, T., & McKeachie, W. J. (1991). *A manual for the use of the Motivated Strategies for Learning Questionnaire (MSLQ) (Report No. NCRIPTAL-91-*

B-004). University of Michigan, National Center for Research to Improve Postsecondary Teaching and Learning.

Rink, J., & Hall, T. (2008). Research on effective teaching in elementary school physical education. *The Elementary School Journal, 108*(3), 207-218.

Schauffel, N., Schmidt, I., Peiffer, H., & Ellwart, T. (2021). Self-concept related to information and communication technology: Scale development and validation. *Computers in Human Behavior Reports, 4*(1), 100149.

Shaheen, M. (2022). Self-determination theory for motivation in distance music education. *Journal of Music Teacher Education, 31*(2), 80-91.

Shorey, S., Chan, V., Rajendran, P., & Ang, E. (2021). Learning styles, preferences and needs of generation Z healthcare students: Scoping review. *Nurse Education in Practice, 57*(1), 103247.

Szymkowiak, A., Melović, B., Dabić, M., Jeganathan, K., & Kundi, G. S. (2021). Information technology and Gen Z: The role of teachers, the internet, and technology in the education of young people. *Technology in Society, 65*(1), 101565.

Tabachnick, B. G., & Fidell, L. S. (2013). *Using multivariate statistics* (6th ed.). Pearson.

Ulfert-Blank, A. S., & Schmidt, I. (2022). Assessing digital self-efficacy: Review and scale development. *Computers & Education, 191*(1), 104626.

Weare, K. (2004). *Developing the emotionally literate school*. Paul Chapman Publishing Ltd.