# INFLUENCE OF TECHNOPHOBIA ON ACADEMIC ACHIEVEMENT IN DISTANCE LEARNING FOR GRADE SIX STUDENTS IN ABU DHABI, UNITED ARAB EMIRATES

Nura Arabi[1]*, Wail Muin Ismail[2] & Fonny Dameaty Hutagalung[1]

ABSTRACT

Purpose: This study explores the impact of technophobia, negative emotions like anxiety and frustration towards technology, on the academic performance of sixth-grade students in Abu Dhabi, UAE, during distance learning. It also assesses whether gender moderates this relationship. **Methodology:** Drawing on Bandura's Self-Efficacy theory, data from 636 students, 474 male and 162 female, were collected via questionnaires. The collected data underwent analysis using both SPSS and Structural Model equation through SMART-PLS. **Contributions:** The study reveals that technophobia significantly hampers academic achievement in distance learning, irrespective of gender. These findings highlight the need for MOE and stakeholders to develop policies that better support students, especially the younger ones, in their distance education experiences, offering valuable insights for future studies and recommendations.

Keywords: Technophobia, Distance Learning, Academic Achievement
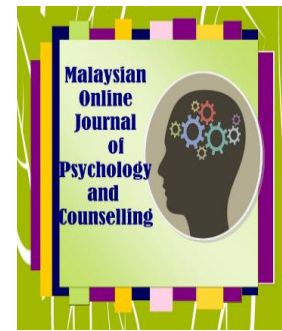
[1] Department of Educational Psychology & Counselling, Faculty of Education, Universiti Malaya, MALAYSIA

[2] Department of Educational Foundations & Humanities, Faculty of Education, Universiti Malaya, MALAYSIA

Corresponding Author:
nura.arabi@gmail.com

INTRODUCTION

United Arab Emirates (UAE) Ministry of Education (MOE) has a strong and flexible technology infrastructure in the education system at all levels, from kindergarten to university (Alawamleh et al., 2020; Raji, 2019). The strength of this technology infrastructure was tested during the Covid-19 pandemic when students and teachers had to suddenly shift from face-to-face learning to distance learning (Islam et al., 2023). The challenges during the Covid-19 pandemic were not related to the availability of technology but rather how students dealt with technology during their full-time distance education (Islam et al., 2023; Farkhani et al., 2022). Distance learning was researched in multidisciplinary fields such as technology and business where most of the research had focused on software and hardware systems and how they can help facilitate the process of learning more efficiently (Khasawneh, 2020b; Hobson & Puruhito, 2018; Weller et al, 2005; Brusilovsky et al, 2005). Much less focus has been directed towards the students' emotions especially with their relation to distance learning performance and how students feel while using technology during the learning process (Khasawneh, 2022; khasawneh, 2018b; Picard & Klein, 2002).

In most distance learning courses, the main learning device is a computer, if students was afraid or anxious towards computer or any new technology, it can make their distance learning experience difficult (Khasawneh, 2022; khasawneh, 2018b; Juutinen, Huovinen & Yalaho, 2011). Students' learning outcome in distance learning is affected by how they react to their technical difficulties (Gerli et al, 2022; Juutinen, Huovinen & Yalaho, 2011). Those who react positively are more equipped to overcome problems in their distance learning courses than those who react negatively (Khasawneh, 2022; Juutinen, Huovinen & Yalaho, 2011). Adding to the reaction of students, some studies have shown that boys have an advantage over girls in this area where boys tend to use technology more than girls (Gerli et al., 2022; Juutinen & Saariluoma, 2006).

As technology develops, it demands students to adapt their studying habits. For some, this development in technology can be terrifying since they are reluctant to adopt new kind of technology to their actions even if it helps with their education enormously (Gerli et al, 2022; Saarilouoma et al. 2010). This kind of fear is said to be technophobia (Gerli et al, 2022; Schauffel et al, 2021). Technophobia is seen in many places and is increasing as technology becomes more prominent around us (Schauffel et al, 2021; Saarilouoma et al. 2010). For the purpose of this study, technophobia refers to the fear of interacting with computer or computer related-technology, the fear of facing the rapid advancement of technology and the negative self-talk when dealing with computers or technology (Gerli et al, 2022; Schauffel et al, 2021; Juuntinen & Saarilumoma., 2010). With the quick jump from face-to-face classes to distance learning during the pandemic and thinking about the future of students, it is important to investigate how comfortable students are with technology to further understand how it can affect their academic achievement in distance learning. Therefore, this research aims to answer the following two questions: 1) Is there any significant relationship between technophobia and academic achievement in distance learning for grade 6 students in Abu Dhabi, UAE? 2) Is there a significant moderating effect of gender on the relationship between technophobia and academic achievement in distance learning for grade 6 students in Abu Dhabi, UAE?

LITERATURE REVIEW

Technology usage in education can offer a lot but technology is still being underused by students where many of them in distance learning course tend to react to technical problems with fairly strong emotions (Khasawneh, 2018a; Libbebbrink-Gracia &Pekrun., 2011). People react in different ways in different situations (Ajlouni & Rawadieh, 2022; Saariluoma, 2004). Research indicated that one of

the psychological mechanisms that people use when facing frustration is regression (Ajlouni & Rawadieh, 2022; Saariluoma, 2004). Regression in a broad sense is going back to a behavior of lower maturity level when facing a problem (Ho et al, 2022; Juutinen & Saarilumoa, 2010; Saariluoma, 2004). Due to frustration that students might experience in distance learning while using technology, the learner might become unable to process new information, whether about the system or the topic of the course (Ho et al, 2022; Saariluoma, 2004). Fear of technology plays a big role in distance learning courses (Ho et al, 2022).

In most distance learning courses, the main learning device is a computer, if students have fear or anxiety towards computer or any new technology, it makes their distance learning experience difficult (Sconti, 2022; Juutinen, Huovinen & Yalaho, 2011). Students' learning outcome in distance learning is affected by how they react to their technical difficulties (Sconti, 2022; Juutinen, Huovinen & Yalaho, 2011). Those who react positively are more equipped to overcome problems in their distance learning courses than those who react negatively (Sconti, 2022; Juutinen, Huovinen & Yalaho, 2011). Frustration using computers is a common phenomenon around the world (Gerli et al, 2022; Oluwalola., 2015; Branco et al, 2005). Distance learning requires the students to have more maturity, self-discipline, which indirectly implies that overcoming emotional obstacles is important in distance education (Gerli et al, 2022; Kumar et al, 2001).

Technophobia and Gender

Some studies have been interested in studying the difference in technology usages between the genders. There are signs showing that computer are more used by males than females (Shorey et al, 2021; Mcllroy et al; 2001). This goes back to the stereotype that using computers is dominated by males. In an education setting, this will give an advantage to the male students over the female students (Wang et al, 2022; Shorey et al, 2021; Mcllroy et al; 2001). Some studies have shown that males tends to have less anxiety when using computer than females. While some other studies that have check technophobia for university students showed that gender doesn't have an effect on computer usage (Wang et al, 2022; Shorey et al, 2021; Mcllroy et al; 2001).

Theoretical Framework

Technophobia and Theory of Motivation

Albert Bandura introduced the concept of Self-efficacy in 1997 to explore why some individuals work diligently while others do the minimum necessary (Bandura, 1990, 1989). Self-efficacy theory explains why people are motivated (Bandura, 1997). It's supported by studies showing that high self-efficacy predicts better performance. Self-efficacy refers to an individual's belief in their ability to achieve specific goals or tasks, not overall superiority (Schunk &Pajares, 2009). For example, is a student believes they can write a paragraph on a topic, they are more likely to do it (Bandura, 1997). Higher self-efficacy means greater confidence in achieving a goal, while lower self-efficacy results in less effort because people won't try if they think they can't succeed (Schunk & Pajares, 2009). In essence, self-efficacy influences the effort people put into tasks (Schunk & Pajares, 2009).

Self-Efficacy Relationship to Variables

Self-efficacy theory predicts the relationship between technophobia and academic achievement. It anticipates that when students face a shift to distance learning, they will have higher confidence in handling the change itself compared to the prospect of learning without a teacher online. This aligns with the theory's principles, which considers experience, confidence, social persuasion, and body feelings as factors influencing self-efficacy (Schunk & Pajares, 2009). These questions gauge students'

perceived capabilities and their performance in various leaning scenarios: blended distance with a teacher, or independent distance learning.

Self-efficacy also impacts motivation, learning, self-regulation and achievement, indicating that educators can positively influence those outcomes by enhancing students' self-efficacy (Paradeda et al, 2022; Schunk & Pajares, 2009; Bandura, 1997). It's important to note that high self-efficacy doesn't compensate for a lack of ability; even students with similar abilities can achieve more positive outcomes when their self-efficacy is slightly higher (Paradeda et al., 2022; Maddux, 1995). In this research, self-efficacy correlates with lower technophobia and better academic achievement, while increased anxiety or phobia regarding online classes leads to the opposite effect.

Why Intermediate Level Students?
Transitioning from elementary to middle school is a challenging phase for young adolescents, marked by shifts in academic demands, teacher interactions, and organizational expectations (DiMattio &Hudacek, 2020; Rink & Hall, 2008; Erlback, 2003). Research suggests this transition can negatively impact students' academic performance and emotional well-being (Elyakim et al, 2019; Zins & Elisa, 2006). To address these challenges, developmentally appropriate strategies are recommended (Elyakim et al, 2019; Akos, 2006; Kopping, 2004; Akos & Martin, 2003). Given the increasing use of technology in education, it's worth exploring how the option of distance learning during this transition affects students' academic achievement.

METHODOLOGY

Research Design
The research aims to study the influence of technophobia on academic achievement for grade 6 students in United Arab Emirates (UAE) with gender as a moderator. To measure this relationship between the variables, a statistical step of correlation will be conducted using quantitative research.

Participants
This research will use a large population to produce more reliable and valid results. The research will question students from grade 6 in Abu Dhabi, UAE. According to MOE in UAE, the number of students in Abu Dhabi in grade 6 are 7856 females and 7290 males in government schools (MOE, 2018).
According to Krejcie and Morgan's formula, the sample size for this study needs to be a minimum of 380 participants. To avoid any unexpected errors and have more accurate results, the sample size will be 500 participants. The students will be randomly selected, and the sampling frame will include males and females.

The researcher was granted permission to visit several schools for the purpose of gathering data. Despite having the necessary authorization, the researcher encountered difficulties in obtaining the required number of boys and girls. The primary reason was that the researcher's access to schools was restricted to specific times and days. The researcher was allowed to access the schools near the end of a school day. As boys and girls learn in separate buildings due to regulations by the MOE, the researcher was allowed to survey the boy's building, then then the girl's building which left the girls not interested in finishing the questionnaire due to their desire to go home. The researcher was given access to one class at a time as given by the administrator.

Procedures
This study uses a random sampling to draw a representative sample of students. Selecting the students will be as follows: (1) the number of students will be identified first in the city of Abu Dhabi

(2) The names of the schools in Abu Dhabi will be written down and uploaded on a Google website that will select the schools where the questionnaires will be distributed (3) Students from the selected school will be randomly selected and asked to fill a questionnaire. The researcher would divide 500 by 8 schools. This totals to 63 students from each school. Approval to carry on with this study was taken from the Ministry of Education in Abu Dhabi, UAE. Table 1 has more details.

Verbal consent was gained from each student at the time of doing the survey. Some students were simply not interested in doing the survey and want to go home as the questionnaire seemed as an extra schoolwork for the day.

Table 1. Response Rate of the Collected Data

	Number of Questionnaires	Percentage
Distributed Questionnaires	700	100%
Completed Questionnaires	636	90.86
Unreturned Questionnaires	64	9.14%
Unstable Questionnaires (Outliers)	0	0%
Stable Questionnaires	636	90.86%
Male Students	474	74.53
Female Students	162	25.47

Instruments

The questionnaire is divided into two sections. First section collects demographics of the participants, if they are male or female, their GPA score, if they have had a prior experience with distance learning or not. The second section has questions related to technology use in distance learning or the Technophobia scale. This section includes 21 items. 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 till today. The questionnaire encompasses a likert scale ranging from 1="strongly disagree" to 5="strongly agree". The questionnaire was translated into Arabic by two professional translators to avoid any mistakes.

Analysis

The questionnaire responses were coded by using SPSS as it also was used to clean and prepare data. Then, data was screened for any of the following issues: normality, outliers, missing data, and multicollinearity. The Z-score helped figuring out outliers. Variance inflation factor (VIF) was used to check for multicolinearity and assessment of normal distribution and skewness was checked. For this study VIF factor should not be more than 10 and tolerance values must be greater than 0.10 (Hair et al, 2014).

The SEM is an appropriate mean for predicting the mutual strength of several variables. Moreover, by using SMART-PLS the researcher can examine a group of independent moderating relationships between variables concurrently (Hair et al., 2010). For this study, the analysis using SMART-PLS will be used to examine the moderating effect of gender on the strength of the relationship between the independent variables and the dependent variable. The big advantage for the researcher here using SMART-PLS is that the researcher will be able to assess the reliability and validity of the data accurately.

Confirmatory Factor Analysis (CFA) will be conducted during this stage to empirically test the measurement model. Assessment of measurement model will go through two stages: (1) the assessment of the measuring model's goodness of fit, (2) the assessment of convergent validity, discriminant validity and relativity.

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

RESULTS

The research started by looking at the participants' response rates and their descriptive statistics. 700 questionnaires were distributed, 636 were completed. Zero questionnaires were unstable, so all 636 returned questionnaires were used in the analysis process.

Detection for outliers when checking the responses of 636 participants. There was 0 omitted analysis. Outliers were diagnosed by calculating the standardized z-score for each variable, as recommended by Tabachnick and 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 who z-scores were <-3.29.

Normality of the data was checked through skewness and kurtosis. Hair et al (2014) stated that skewness value should be between -2 and +2 and kurtosis between -2 to +2; the researcher followed these guidelines in this study. The assumption of normality was not violated. Therefore, all variables were considered normal.

Hair et al. (2014) 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. This indicated the collinearity between the variables was very low, therefore, multicollinearity is not a problem (Table 2).

Table 2. The Correlation between Variables

Construct	AA	Technophobia	Tolerance	VIF
AA	1.000			
Technophobia	0.342	1.000	0.819	1.221

Confirmatory Factor Analysis of Technophobia (T)
The initial confirmatory factor analysis for Technophobia indicated that some of the indices were not within the acceptable values. The factor loading should be more than 0.5 therefore, this measurement model needed to be revised. Accordingly, all items with a loading less than 0.5 were omitted from the model. After the problematic items were omitted, the final measurement model for technophobia achieved a good model fit to the data and all 16 items were significant reflective indicators of the linked construct of Technophobia.

All the remaining items had factor loadings higher than 0.70, indicating sufficient variance in the corresponding variable. Secondly, Cronbach's Alpha of the technophobia variable was 0.947 and the Composite Reliability of the technophobia variable was 0.949, which was higher than 0.70 and indicated to have excellent reliability as seen in Table 3.

Table 3. 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			

To assess discriminant validity, the Heterotrait-Monotrait (HTMT) ratio matrix and the Fornell-Larcker Criterion matrix were calculated for the measurement model. Results indicated that the Heterotrait-Monotrait ratio was less than the threshold level of 0.85 leading to the establishment of the HTMT ratio. Furthermore, the Fornell-Larcker Criterion matrix indicated that the square root of average variance extracted by each construct was greater than the correlation between the constructs (Henseler, et al., 2015), indicating that the Fornell-Larcker principle has been achieved. This indicated that the model had good discriminant validity. Additionally, the variance inflation factor (VIF) was assessed to test the multi-collinearity issue. The study found that the VIF scores of the variables were less than 10, as Henseler, et al., 2015 suggested. Hence, there was no multicollinearity issue.

The standard root mean square residual (SRMR), d_ULS, d_G, Chi-Square, and Normed Fit Index (NFI) are the fit measures used to assess the model fit in PLS-SEM. The SRMR estimate in both saturated and estimated models had a value of less than 0.80, which indicated that the model has a good fit (Table 4). Furthermore, the higher NFI indicated a good model fit as suggested by Hair et al. (2016). In addition to this, R-square values exhibited that the model explains more than 50% variances in all dependent and mediating variables i.e., academic achievement.

Table 4. Model Fit

	Saturated model	Estimated model
SRMR	0.060	0.078
d_ULS	4.983	9.181
d_G	1.317	1.405
Chi-square	4499.592	4744.414
NFI	0.811	0.801
	R-square	R-square adjusted
Academic Achievement	0.566	0.562

Hypothesis testing

Table 5. Correlations, Findings of Hypothesis One (H₁)

	Academic Achievement	Interaction	Motivation	Technophobia
Academic Achievement	1	0.699*** < 0.001	0.679*** < 0.001	−0.621*** < 0.001
Technophobia	−0.621*** < 0.001	−0.775*** < 0.001	−0.760*** < 0.001	1

*** $p < 0.001$

Hypothesis one (H_1): aims to examine the relationship between the independent variables which is Technophobia and academic achievement; the dependent variable/ Pearson's correlation analysis was used to analyze the association between the variables under study (Table 5). Results indicated that there is a negative correlation between academic achievement and technophobia ($r = -0.621$, $p < 0.001$).

Hypothesis (H_1): specified that there is a significant negative influence of technophobia on academic achievement for grade 6 students in Abu Dhabi, United Arab Emirates. The results in table 6 indicated that there is a significant negative relationship between technophobia and academic achievement where ($p < 0.001$) and the path coefficient is $\beta = -0.238$. Also, CR ($t = 3.674$) which is more than 1.96. This means that technophobia has a significant negative influence on academic achievement. Therefore, the results support these hypotheses.

Table 6. Hypothesis Testing – Direct Relationships

	Path	Path Coefficient	Standard Deviation	T statistics	P values	Results
Direct Relationship						
H1	T → AA	−0.238***	0.065	3.674***	0.000	Supported

Note. AA = Academic Achievement, T = Technophobia.
*** $p < 0.001$

Moderation Analysis
With respect to moderation analysis for the demographic variables, it was conducted using the path coefficient among the groups. Following the test of path relationships direct hypotheses, the next stage of the analysis involved assessment of moderating effect. The second hypothesis (H_2) aims to

examine the moderating effect of gender on the relationship between technophobia and academic achievement.

According to Table 7, the results indicated that gender did not moderate the relationship between technophobia and academic achievement (β = 0.006, t = 0.080, p = 0.936). The simple slope plot was made to portray the interaction of gender on the relationship between technophobia and academic achievement (Figure 1). It indicated that technophobia has a negative influence on students whether they are male or female.

Table 7. Hypothesis Testing – Moderation Analysis

	Path	Path Coefficient	Standard Deviation	T statistics	P values	Results
H2	G x T → AA	0.006	0.076	0.080	0.936	Not Supported

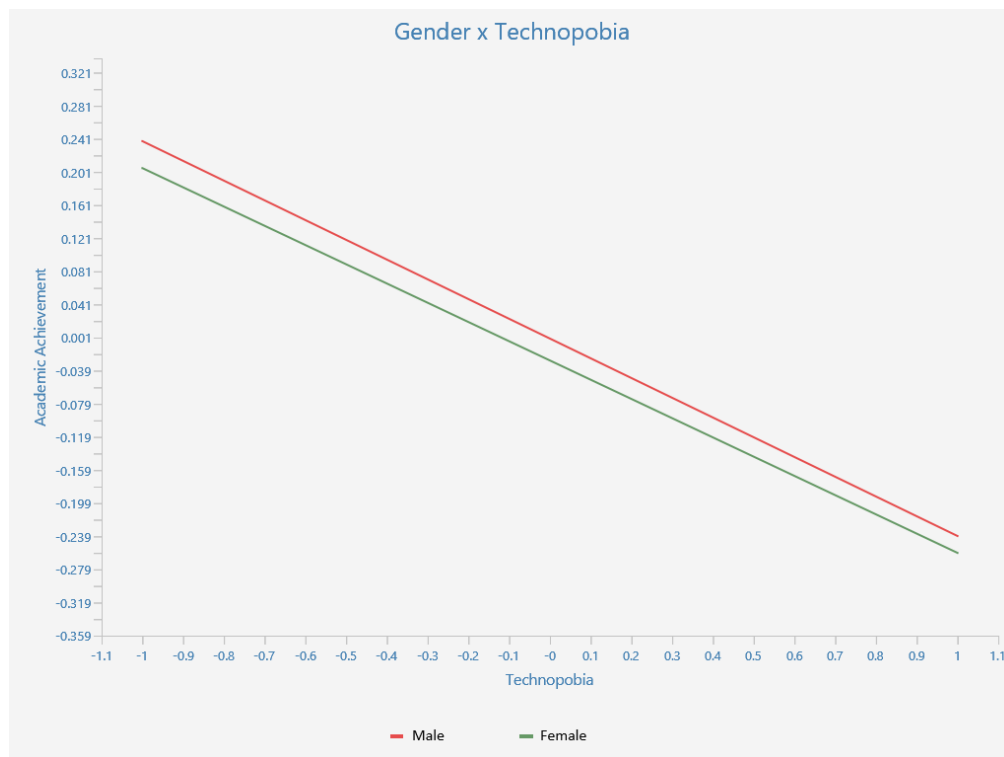Note. AA = Academic Achievement, T = Technophobia, G = Gender,
*** p < 0.001

Figure 1. Moderating Effect of Gender on Relationship between Technophobia & Academic Achievement

DISCUSSION

The first hypothesis checks for the influence among the variable technophobia on academic achievement for grade 6 students in Abu Dhabi, United Arab Emirates. The results showed that there is a significant negative influence of technophobia on academic achievement for grade 6 students in Abu Dhabi, United Arab Emirates. The negative significance means that if technophobia was present in distance learning for the student, it will affect their academic achievement negatively.

The results of the SEM analysis indicated that as student's emotions towards the use of technology in positive their academic achievement will increase. If the student's attitude and emotions towards technology is negative, the academic achievement of that student will decrease. The following was demonstrated in the results of the research with grade 6 students in Abu Dhabi, United Arab Emirates. This finding can offer positive support to teachers and students who are involved in distance learning courses. Additionally, through the SEM analysis, it was also found that the model of belief adopted from Self-efficacy Theory of Motivation was a good fit for the data and predicted a significant influence of technophobia and academic achievement.

Theory proposes that if an individual has a higher self-efficacy in doing a task will be more capable at achieving that task. While those who have a lower self-efficacy will be less likely to complete the task at hand. For this study variable technophobia, when students have technophobia, they are less likely to have positive academic achievement results. The results have supported this prediction. Similar results were supported by Juutinen and Saariluoma, (2006). Their research found that students who get anxious or frustrated when using technology in their distance learning class are more likely to drop out of the course. Alenezi and Karim (2010) also found that computer anxiety, computer self-efficacy and enjoyment play a significant role in students' intention of going for an E-learning experience and that played an important role in their academic performance.

As for the questionnaire item analysis, the item T18, which states "I feel relieved when there is a computer use in my education" had a percentage of the respondents who marked this item 'strongly disagree' was 48.3%. The item T2 which states 'I am comfortable using technology during distance learning" had a percentage of the respondents who market this item 'strongly agree' was 2.0% and 56.6% 'strongly disagree' with the statement. 73% of the participants have used technology in education before. The following results show that regardless of students having the previous experience of taking distance learning classes before the pandemic, they are still not comfortable using technology for distance education.

According to Odai and Khasawneh (2022), they have argued that regardless of the fact that technology has been around for a good time and the education system is seen to be shifting more towards the online education world, students are still not understood in this online dynamic and technophobia is one of the areas that need to be looked at to better understand students' academic performance. They also argue that it is important that the instructor understands students' belief and behavior when using technology in distance learning to maximize the benefits of technology in education. Sanchez-Caballe et al. (2020) found that digital literacy and competency in younger generation doesn't necessarily mean technical skills. This manifests itself as a negative attitude toward the use of technology in education.

It is not enough to examine technophobia without examining the relationship involving other variables that can help the field of distance education to improve for students and for teachers as

well. The discussion now is not only about academic achievement for students in distance learning, but also about how success can be achieved without barriers.

Moderating effect of Gender on Technophobia and Academic Achievement in Distance Learning

The second question in this research is: Is there a significant moderating effect of gender on the relationship between technophobia and academic achievement in distance learning for grade 6 students in Abu Dhabi, United Arab Emirates? The results indicated that gender did not moderate the relationship between technophobia and academic achievement (β = 0.006, t = 0.080, p = 0.936). The simple slope plot was made to portray the interaction of gender on the relationship between technophobia and academic achievement (Figure 2). It indicated that technophobia has a negative influence on students whether they are male or female.

The moderating effect of gender between technophobia and academic achievement in distance learning refers to the idea that a student's gender influences their level of technophobia and its impact on their academic achievement in distance learning environment. One gender might be more susceptible to technophobia than the other. The result from this research shows that gender doesn't play a moderating role between technophobia and academic achievement in distance learning environment. Once technophobia is found with the student, whether male or female, it is expected that the student will have a reduction in their academic achievement.

Previous research suggested that females might be more susceptible to technophobia than males, and therefore be more negatively impacted by technophobia in terms of academic achievement in distance learning (Kotze et al., 2016; Mcllroy et al; 2001). The following has been explained by referring to the use of technology being more by males than females (Kotze et al., 2016; Mcllroy et al; 2001). As a result, males tend to have less anxiety when using technology (Kotze et al., 2016; Mcllroy et al; 2001).

Other studies have found that there are no significant differences in technophobia between males and females (Simsek, 2011; Poynton, 2005). Computer anxiety was not related to gender and both males and females could suffer from a low computer anxiety specially after getting close to the 21st century. It was found that males tend to use computer more than girls for academic work (Simsek, 2011; Poynton, 2005The reason can be associated with the different ways that males prefer to take advantage of technology than girls (Simsek, 2011; Poynton, 2005).

The results in this area are not consistent among multiple studies. More research needs to be done in this area to fully understand the moderating effect of gender on technophobia and academic achievement. It is also important to note that gender is not the only factor that moderate the relationship between technophobia and academic achievement in distance learning but other factors such as age, prior-experience, education level, learning style and many more.

CONCLUSION

Amidst the increased integration of technology in education, particularly following the pandemic, the focus has shifted towards assessing the effectiveness of technology rather than considering student's usability and comfort with it in distance education. This research addresses this gap, especially technophobia and its impact on academic achievement, The findings reveal that technophobia negatively affects academic performance. This area of study requires further investigation, especially for young students, as limited research exists for this age group.

Understanding the role of technophobia and its related fear, anxiety, and frustration when using technology is crucial for enhancing students' engagement and success in online learning. Research in this area can inform interventions to mitigate technophobia, ultimately improving the academic achievement of grade 6 students. The MOE should consider these factors to enhance the distance learning experience for young students. In summary, this research provides valuable insights for educators, institutions, technology developers, the MOE, and parents.

Recommendations for Future Studies

More research about technophobia should be done to dive deep into what aspects are causing students anxiety and frustration which can help provide plans for future students who will use distance learning, more specifically young ones. Understanding what miss-conceptions students have about learning through technology or any previous beliefs should help address those issues directly and provide accurate information to help alleviate them for the students.

Assuming that the younger generation is more tech savvy and comfortable with technology is not necessary the case. This doesn't mean that the younger generation is a digital eLearning. More research should be done in this area to explore the difference between being tech-savvy and a digital learner and what are the learning styles that are developing from distance education.

Limitations of the Study

This study sample consisted of students in schools where this area level of study was rarely addressed in the literature for distance learning outcome and never examined Emirati schools to researcher's knowledge. Consequently, students might attempt to fake on the questionnaire by giving socially desirable answers, more specifically with their GPA score. Also, students' answers will depend on how they understand and realize the questions. Including only government schools in this study positions this study with biased perceptive limitation. When private schools are excluded, the study might not be able to capture different perspective, approaches and practices that exist within the education system.

The lack of equal sample between boys and girls is another limitation in this research. The research believes this is not a bias as the girls didn't respond due to issues related to the time of accessing the school and no other reasons.

Statement of Conflicting Interests

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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