Adverse Effects of Cyber-Psychological Variables on the Productive Academic Behavior of Iranian EFL Learners with Xenoglossophobia Amid COVID-19 Pandemic

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Abstract. This study examined the possible adverse effects of cyber-psychological variables on the productive academic behavior of Iranian English as a Foreign Language (EFL) learners with Xenoglossophobia in E-learning amid the COVID-19 pandemic. According to a sequential exploratory mixed-method design, in the qualitative phase, a comprehensive meta-integration was conducted for 573 related studies to determine the possible influencing cyber-psychological variables. In the quantitative phase, to measure the adverse effects of the determined

cyber-psychological variables, a valid and reliable questionnaire was generated to be filled by 249 conveniently selected male and female Iranian EFL learners who suffered from moderate to high levels of Xenoglossophobia. The results indicated the significant adverse effects of Technophobia (fear of technology), Technostress (E-learning stress), identity trauma (conflict of online identity and real-world self-identity), COVID-19 news (infodemic or disinfodemic), Coronaphobia (fear of COVID-19 pandemic), and Atychiphobia (fear of failure) on the productive academic behavior of Iranian EFL learners with Xenoglossophobia. As an interdisciplinary study, the results may benefit different fields of science such as TEFL, cyber-psychology, and educational technology by shedding light on the ramified negative behavioral effects exposed by the cyber-psychological variables that not only affected the performance of EFL learners but also their perceptions toward E-learning.

1. Introduction

According to various recently-conducted studies and systematic literature reviews (i.e., Kumar & Nayar, 2021) since the unexpected start of the COVID-19 pandemic, most of the studies published in the field of health psychology and its sub-fields targeted the pandemic effects on mental health or mental wellbeing of the health care workers by proposing different psychiatric e-rehabilitations or telemedicine programs to handle their mental conditions without noticeably considering the pandemic effects on students not just from educational or technical points of view but from a psycho-behavioral one to examine what possible multifaceted variables have caused significant negative effects on their behaviors in academic settings especially the imposed E-learning courses even in regions with highly-developed systems of distance education such as Spain (Odriozola-Gonzlez et al., 2020), China (Cao et al., 2020) and even the US (Browning et al., 2021). It can be concluded that there are other interdisciplinary variables expect educational and technical ones that caused problems for students in their educational career during the COVID-19 lockdown.

Among different students in various fields of science, EFL learners with Xenoglossophobia were the most vulnerable and disregarded ones

during the COVID-19 pandemic as the language which is used as a medium of communication in their E-learning courses is English that is different from their mother tongue (Oraif & Elyas, 2021) and it made their problems even more complicated as even in the pre-pandemic era most of them were suffered from high levels of Xenoglossophobia or foreign language anxiety not only in face-to-face classes but in E-learning courses as well that had significant negative effects on their functions (Kaisar & Chowdhury, 2020; Valizadeh, 2021). According to Reupert (2019), the functions of the students are critically reflected in their academic behavior that refers to the general behaviors of a standard student such as being obedient in doing homework, attending the classes, behaving appropriately in academic settings, studying, and being internally motivated.

As claimed by Amichai-Hamburger (2017), one of the novel fields of health psychology that needs critical further investigations is cyberpsychology, digital psychology, web psychology, or internet psychology which deals with all of the psychological phenomena or mental conditions related to or caused by the use of technology whether an emerging technology or a dated one. During the COVID-19 pandemic by expeditiously conducting and practicing mostly pseudoscientific or irrational education policies particularly in regions with delayed vaccinations and not-prepared equipment of distance education especially most of the areas in the Middle East and North Africa (MENA), a significant number of the students suffered from serious problems in their academic behavior due to the prolonged duration of the academic settings' closure (Demetriadis et al., 2021). As reported by Guitton (2020), it is possible that different identified and not-identified variables in the field of cyberpsychology are behind the students' weak academic performance and their inappropriate and counterproductive academic behavior. Thus, this study was an attempt to find an answer to the following research question. 1. What are the possible cyber-psychological variables that influence productive academic behavior of the Iranian EFL learners with Xenoglossophobia in distance education amid the COVID-19 pandemic?

2. Literature Review

This study is generally based on E-learning theory or theory of online learning which refers to the description of how learning occurs in cognitive science but in regard to the electronic or online environment and via digital devices or platforms (Garrison, 2011). According to Picciano (2017), while grand theories in most fields of science go under a few changes as time passes, but in E-learning, they need significant revision due to many different reasons such as rapid technological changes including the emergence of virtual intelligence and the internet of things. In the following, the final model of some key studies which attempted to influence E-learning theory will be described. For example, Aparicio et al. (2016) developed an E-learning theoretical model which lacks several external influencing components and is limited to the associations between teachers and students and how they interact with the resource in the field.

As mentioned by Paudel (2021), apart from the factors related to online teaching and learning, there are many cyber-psychological and psycho-behavioral variables that influenced the effectiveness of E-learning, particularly during the COVID-19 pandemic. The findings of the previous study were confirmed by Haider and Al-Salman (2020) in a comprehensive research project in which 775 Jordanian university students were negatively affected by distinct psychological variables during the COVID-19 pandemic that significantly decreased their educational achievements in online courses. Among the psychological and cyber-psychological factors that influenced the outcome of E-learning courses, to be a technophobe, a technophile, or a neutral individual toward using technology-based devices during the COVID-19 pandemic was a significant variable particularly among digital immigrants or adult users who were raised prior to the digital age (Nimrod, 2021). As technophobia is a general category of being afraid of using any technology-related deceives, technostress is the imposed anxiety or stress while using any aspect of technology whether digital devices or even participating in online courses (Christian et al., 2021). While techno-eustress includes positive impacts and features of using technology such as being motivated toward online

learning, technostress highlights the dark side of using technology which has gained scholars' attention especially since the start of the COVID-19 outbreak (Tarafdar et al., 2019).

Unlike real-world identity which is being formed in the real-world setting, internet persona, digital identity, or online identity is a social identity that different types of internet users establish in virtual or online contexts (Bozkurt & Tu, 2016). In a recently conducted study, Neville et al. (2021) examined the effects of the COVID-19 pandemic on social identities and developed a theory of how crises such as pandemics influence the social identity of individuals in different contexts including the online one. By exploring a huge number of teachers' tweets during the COVID-19 pandemic including remote learning and remote teaching hashtags, Carpenter et al. (2020) found an unexpected number of tweets describing the significant identity changes and psychological conditions of E-learning and E-teaching users during the online sessions due to reported identity trauma or conflict of real-world self-identity and online identity. Finally, Breakwell and Jaspal (2021) confirmed that not only the COVID-19 pandemic changed the general identity of the individuals but some of them with frequent use of the internet were more vulnerable in confronting and handling these effects as online communication itself played a significant role in constructing identity changes.

A critical factor influencing the psychological states of the students especially during the COVID-19 pandemic was determined as infodemic or disinformation (Tagliabue et al., 2020). Moreover, it was revealed that the individuals who struggled with online context to handle their daily duties and routines such as students in different levels suffered from some sort of psychosomatic syndromes including mental stress and anxiety mainly due to the widespread pandemic news mostly disinformation taking over the social media which resulted in low function and poor educational achievements in online courses (Fitriyana et al., 2020). According to Paul (2020), unlike the psychological effects of the COVID-19 infodemic which is caused by misinformation in social media, nosophobia or hypochondriasis is an uncontrollable fear of catching a particular disease especially in times of crisis. He found that the nosophobia of COVID-19 significantly limited the potentials of Indian university stu-

dents as they struggled to achieve their educational goals in the online courses during the Coronavirus outbreak. Following his work, Okoi and Etim (2021) found that COVID-19 hypochondriasis was the top inhibitor factor among Nigerian individuals which has negatively affected their job and educational careers in a critical way that even healthcare-seeking was not beneficial for them to tackle this irrational fear.

Atychiphobia (fear of failure) as a sub-branch of social anxiety is the fear and stress of being judged or evaluated in a wrong or negative way which is being observed among different types of learners in on-line contexts after the shutdown of schools and academic context since the outbreak of the Coronavirus (Keskin et al., 2020). According to Doyum?a et al. (2021), Turkish university students were more afraid of being negatively evaluated in E-learning contexts in comparison to the pre-pandemic face-to-face sessions which acted as an inhibitor vari-able to not only influence their psychological state but also their opin-ions toward the usefulness and appropriacy of online sessions. In the field of EFL, very limited studies reflected the significant effects of psy-chological or cyber-psychological variables on E-learning outcomes dur-ing the COVID-19 pandemic such as a study conducted by Purwantoro et al. (2021) in which EFL teachers and learners suffered from a wide range of psychological symptoms caused by whether imposed E-learning courses or the COVID-19 pandemic that impacted their performance in E-learning courses amid the Coronavirus outbreak.

3. Method

3.1. Design and context
The current study utilized an exploratory sequential mixed-method de-sign with a bolded qualitative phase and a less weighted quantitative one to find an answer for the research question in focus. The quali-tative phase included a comprehensive meta-integration (meta-analysis and meta-synthesis) among the studies in the literature to identify the related influencing cyber-psychological variables. In the second step of the qualitative phase and to analyze the qualitative findings, a grounded theory-based analysis was employed to construct a theory with the aim

of developing a tentative theorized model and a valid and reliable Likert-scale based questionnaire. In the first and second steps of the quantitative phase and to collect the subsequent data, the results of the questionnaire were collected and a set of statistical procedures were utilized to analyze the data. To have a better understanding of the design of this study, Figure 1 illustrates the included steps of the qualitative and quantitative phases. Fanpardazan institute of higher education as an accredited institute in Isfahan, Iran with valid licenses issued by the Ministry of Science, Research, and Technology was selected as the context of this study.
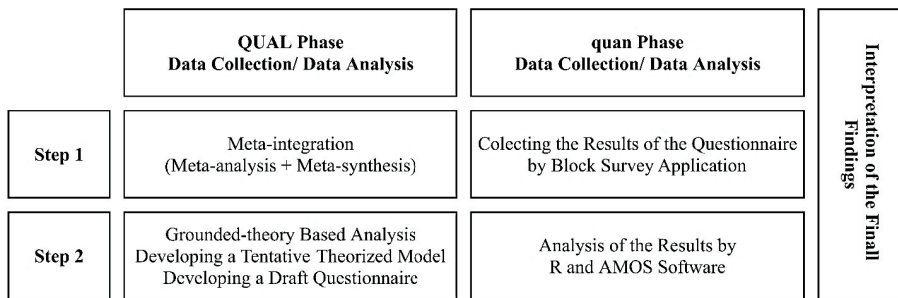
	QUAL Phase Data Collection/ Data Analysis	quan Phase Data Collection/ Data Analysis	Interpretation of the Finall Findings
Step 1	Meta-integration (Meta-analysis + Meta-synthesis)	Colecting the Results of the Questionnaire by Block Survey Application	
Step 2	Grounded-theory Based Analysis Developing a Tentative Theorized Model Developing a Draft Questionnaire	Analysis of the Results by R and AMOS Software	

Figure 1. Research Design

3.2 Participants

Taking into account the attempts made in the selection of the participants, in the first attempt of selecting the participants, 458 male and female intermediate, upper-intermediate, and advanced EFL learners who were positioned between B1-C1 levels according to the Common European Framework of Reference (CEFR) and registered for the E-learning courses in the Fanpardazan institute of higher education amid the COVID-19 pandemic were chosen according to convenience method in sampling. After conducting Foreign Language Classroom Anxiety Scale (FLCAS) in Block Survey and considering involuntary or imposed attrition and voluntary attrition rates 249 EFL learners with moderate to high levels of Xenoglossophobia were selected. To sum up the participants' information, Table 1 shows the characteristics of the participants and courses. In terms of controlling sample selection bias, the researchers selected male and female EFL learners with a wide age range and various

CEFR levels, and considering attrition bias, they meticulously tracked every dropped-out participant in this study and classified them into different categories to check the reasons behind their withdrawal which mentioned above. It should be mentioned that before selecting the required participants and while conducting this not-clinical-trial study certain last versions of ethical guidelines and codes of conduct in social science research provided by the National Committee for Research Ethics in the Social Sciences and the Humanities (NESH), and the National Committee on Research in the Social Sciences and Humanities (NCRSH) were strictly followed.

Table 1: Characteristics of the Participants and Courses

Participants	Preliminary sample size	458
	Sample size with Xenoglossophobia	271
	Levels of Xenoglossophobia	Moderate to high
	Attrition rates	Voluntary: 4
		Involuntary: 18
	Final sample size	249
	Proficiency levels	Intermediate, upper-intermediate, advanced
	CEFR levels	B1-C1
	Gender	Male/ Female
	Age range	23-41
Courses	Type of courses	Intensive E-learning courses/ Distance education
	Aims of courses	Improving General English Proficiency (GEP)
	Duration of courses for every participant	≤ 120 ninety-minutes sessions in about 4 months
	Course organizer institution	FanPardazan institute of higher education
	Location of the institution	Isfahan, Iran

3.3 Instruments

Foreign Language Classroom Anxiety Scale (FLCAS) which is a valid and reliable five-point Likert-scale-based questionnaire developed by Horwitz et al. (1986) to measure foreign language anxiety through 33 items with a range of strongly agree to disagree was used to determine the

Iranian EFL learners with moderate to high levels of Xenoglossopho-bia. As the second instrument, a valid and reliable 16-items 5-point Likert-scale-based questionnaire based on the two main constructs of the tentative developed model was generated. To check the reliability of the questionnaire, a pilot study was conducted for 92 respondents both male and female who were selected randomly based on their IPs (Internet Protocols) from a larger group of Iranian B1-C1 EFL learners in FanPardazan institute of higher education. According to the find-ings that are available in the analysis, 4 items were omitted and some were modified by the researchers. To make sure about the validity of the questionnaire, a series of feedbacks were collected from experts that were associate professors in the field of TEFL, educational technology, and psychology regarding the questionnaire's structure, grammar, jar-gon, and the rationale behind each item and its subsequent Likert-scale response anchors. Finally, the last version of the questionnaire (Table 2) that included 12 items was named the Questionnaire of Academic Be-havior and Cyber-psychological Variables (QABCV). According to some guidelines in designing Likert-scale based questionnaires and feedbacks of the experts in the related fields, a not-balanced unipolar response anchor was selected including slightly effective (one score), moderately effective (two scores), considerably effective (three scores), very effective (four scores) and extremely effective (five scores).

Table 2: Structure of the QABCV

Constructs/ Sub-constructs	No. of item(s)
1. Cyber-psychological Variables	
a. Technophobia (fear of technology)	2
b. Technostress (E-learning stress)	2
c. Identity trauma (conflict of online identity and real-world self-identity)	2
d. Pandemic or COVID-19 news (infodemic and disinfodemic)	2
e. Fear of pandemic (Nosophobia and coronaphobia)	2
f. Fear of failure in E-learning (Atychiphobia)	2
2. Academic Behavior	
Total items	12

3.4 Data collection procedure

In the qualitative phase, a meta-integration (meta-analysis and meta-synthesis) was conducted for the related studies in the literature to determine the related influencing variables. Subsequently, according to grounded-theory-based analysis, a tentative version of the developed model and a draft version of the required questionnaire were generated. In the quantitative phase, the required permissions for undertaking this study were obtained from the heads of the FanPardazan institute of higher education. Considering the dropout rate and after conducting the FLCAS questionnaire, 249 male and female intermediate, upper-intermediate, and advanced EFL learners (B1-C1 CEFR levels) with moderate to high levels of Xenoglossophobia who registered for the E-learning courses in the Fanpardazan institute of higher education amid the COVID-19 pandemic were conveniently selected. To make sure about the validity of the questionnaire, the researchers asked for some experts' feedbacks in the fields of TEFL, educational technology, and psychology in terms of the overall structure and content of the questionnaire. The reliability of the questionnaire was checked by Cronbach's Alpha based on an online pilot study among 92 Iranian EFL learners (B1-C1 CEFR levels). Due to the restrictions caused by the COVID-19 outbreak, only soft copies of the questionnaire were available in Block Survey online application, and the subsequent link was sent through different channels such as SMS or social groups of EFL learners made over Clubhouse and WhatsApp. Normally, it took around 15-20 minutes for the questionnaire to be filled in by each respondent.

3.5 Data analysis procedure

The latest Lavaan statistical package of the powerful R software and AMOS were used for the analysis in this study. The internal consistency of the questionnaire was checked by Cronbach's coefficient through a pilot study. Face, content, and construct validities of the questionnaire were investigated prior to checking the reliability and piloting phase which are described in the results section. To check the fitness of the developed model, fit indices (GFI, RMSEA, NFI, CFI, TLI, PNFI, PGFI) were calculated. To investigate the underlying assumptions of SEM, Common-Method Bias (CMB) or Common-Method Vari-

ance (CMV), multivariate normality, multicollinearity, homoscedasticity, standard distribution, and positive definiteness were checked to flag and remove the possible outliers in the data.

4. Results

4.1. Results of the qualitative phase

4.1.1. Analysis of the meta-integration

For the purpose of conducting meta-integration, two analytically separate but parallel and inter-related meta-analysis and meta-synthesis were employed. The meta-analysis inclusion criterion consisted of the indexed related studies published during the COVID-19 pandemic across different accredited publications with valid scientific indexes. The last version of Beall's list of predatory publishers generated in 2020 was used for the exclusion criterion of the meta-analysis. To avoid publication bias or file drawer problem which is considering only the studies with positive or desired findings in the meta-analysis, unlike fixed-model that considered homogeneous participants for all of the studies, the random-effects statistical model was utilized that included the calculation of Fail-Safe N test or test of combined significance. Table 3 is a representation of the meta-analysis' characteristics.

Table 3: Characteristics of the conducted Meta-integration: Meta-analysis

	Total studies	Excluded studies			Aggregated studies
		PP	NR	QL	
Number	1012	242	197	133	440
Overall z-score					19.86
Failsafe-N					796
Ad-hoc rule					FALSE

Note. PP stands for Predatory Publishers, NR for not-related, and QL for qualitative studies.

According to Table 3, 1012 studies were found in which 242 studies were published in possible predatory journals, 267 studies were not associated with the focus of this study, and 133 studies were conducted qualitatively. Finally, 403 quantitative studies were selected as the aggregated ones. According to the value of Rosenthal's Failsafe-N test that is more

than 500 and the result of the ad-hoc rule that is false (large), it can be concluded that the conducted meta-analysis was free of publication bias. For conducting meta-synthesis, 133 qualitative studies that mostly focused on the attitudes, perceptions, and beliefs of the EFL teachers and EFL learners about E-learning courses during the COVID-19 pandemic were explored based on Inductive Content Analysis (ICA) that led to the formation of seven main constructs. Table 4 shows the characteristics of the meta-synthesis. As shown in Table 4, the findings confirmed the significant effects of six cyber-psychological variables including Technophobia (fear of technology), Technostress (E-learning stress), identity trauma (conflict of online identity and real-world self-identity), COVID-19 news (infodemic or disinfodemic), Coronaphobia (fear of COVID-19 pandemic), and Atychiphobia (fear of failure in E-learning) were found.

Table 4: Characteristics of the conducted Meta-integration: Meta-synthesis

	Total studies	Excluded studies	Targeted studies
	133	0	133
Main constructs (Initial phase)			6
Main constructs (Final phase)			6

4.1.2 Description of the found cyber-psychological variables

(a) Technophobia is defined as being afraid or anxious while using complex devices with advanced technology particularly computers but its definition extends as the technology develops and it has been extended to the use of different smart technological-base devices such as cellphones, laptops, tablets, and even home appliances with the Internet of Things (IoT) (Khasawneh, 2018a, 2018b). (b) Technostress is defined as being unable to cope with digital devices and smart technologies including computers and cell phones due to their psychological or psychosomatic side effects on some individuals including irrational fear, anxiety, or stress while using them (Mahboob & Khan, 2016). (c) Identity trauma is the conflict between online identity or internet persona and real-world self-identity which causes significant mental conditions for an individual as he/she attempts to change his/her self-image, beliefs, and val-

ues by forming a different online identity rather than their real-world self-identity (Garbasevschi, 2020). (d) Pandemic or COVID-19 news, infodemic refers to the accurate and inaccurate information about the pandemic while disinfodemic as coroneologism or corona coinage created during the COVID-19 pandemic to mention the inaccurate fast-spread disinformation about the Coronavirus such as blow-drying sinuses and nasal cavity to kill the virus (Mahmoudi-Dehaki et al., 2020). (e) Fear of pandemic, nosophobia, or Coronaphobia is defined as an uncontrollable fear of catching a particular disease such as Coronavirus infection during the COVID-19 pandemic (Paul, 2020). (f) Fear of online negative evaluation or Atychiphobia refers to the fear of failure or fear of being judged or evaluated negatively because of possibly not being good enough (Wood, 2017).

4.2 Results of the quantitative phase

4.2.1 Assumptions of the Structural Equation Model (SEM)

To investigate the underlying assumptions of SEM, Common-Method Bias (CMB) or Common-Method Variance (CMV), multivariate normality, multicollinearity, homoscedasticity, and standard distribution were checked to flag and remove the possible outliers in the data. (a) To avoid possible CMB, different ex-ante and ex-post remedies were considered. The ex-ante remedy was consisted of providing a comprehensive guideline of how to take and respond to QABCP in the online environment for all of the participants. The ex-post remedy was determined by the researchers to be the use of Harman's single factor tests to identify possible CMB. It should be mentioned that in the procedure of performing Harman's single factor test, Principal Axis Factor (PAF) model with no rotation was employed. Thus, a single factor was extracted and it explained 10.63 percent of the total variance is far less than 50 percent which verifies the rejection of the possible presence of CMB. (b) Multivariate normality was checked by the Mahalanobis distance D2 as it was more accurate, advantageous, and sensitive to outliers compared to the Euclidean distance. The minimum value was 19.30, and the maximum value was 57.08 that were placed in the acceptable range of 0 to 100. To check the Mahalanobis values for each participant against

the critical value (.001), the Cumulative Distribution Function (CDF) function of the chi-square distribution was used that none of the values were lower than the critical value (.001) that indicated no violation in terms of multivariate normality. (c) To check multicollinearity, collinearity statistics was used to investigate the values of tolerance and Variance Inflation Factor (VIF) and it was found that none of the tolerance values were below 0.01 and none of the values of VF were above 10.0 that showed the assumption of collinearity was not violated. (d) To check the assumption of homoscedasticity, a scatterplot of ZPRED (the standardized predicted values) and ZRESID (the standardized residuals, or errors) was drawn. It should be mentioned that a fake dependent variable, in this case, ID numbers, was used to find the Loess (locally weighted smoothing) line. According to Figure 2, the Loess line did not show any sharp angle and it was almost a straight line that was the verification of the homoscedasticity assumption. (e) Due to the sensitivity of SEM in terms of the outliers' presence, values of normality assumption, included variances, Skewness and Kurtosis, Kolmogorov-Smirnov and Shapiro-Wilk tests were checked. the related skewness and kurtosis ratios were something between -1.96 to +1.96, and none of the variance values were greater than 10 times more than any other variances, thus the dispersion for the values was normal. In terms of Kolmogorov-Smirnov and Shapiro-Wilk tests, all significance indices were above the critical value (.05).
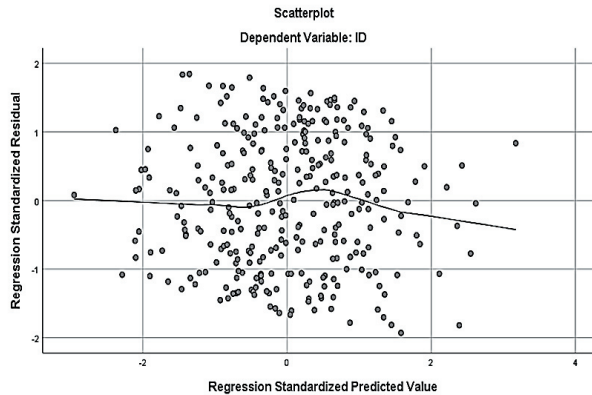

Figure 2. Scatterplot of ZPRED and ZRESID

Finally, the Kaiser-Meyer-Olkin measure (KMO) and Bartletts' Test of Sphericity were run. the KMO value was .877 which was in the meritorious range (KMO¿0.8) and showed the appropriateness of sampling adequacy in factor analysis. In addition, the critical value in Bartletts' Test (.000) was lower than .005 that ruled out the presence of an identity matrix. Thus, factor analysis was supposed to be useful with the gathered data. In the model specification phase, Exploratory Factor Analysis (EFA) was conducted to check the number of constructs (2 distinct constructs suggested for the tentative theorized model). The extraction and rotation methods were set to the Principal Component Analysis and Varimax with Kaiser Normalization (KN) respectively. According to Table 5, the Principal Component Analysis (PCA) showed a two-construct solution was perfect and suitable for grouping the items in the questionnaire and model. In addition, the determinant value (1.24) was not zero, so the assumption of positive definiteness was not violated.

Table 5: Rotated Component Matrix

	Components					
Name	1	2	3	4	5	6
Cyber-psychological 1	.975					
Cyber-psychological 2	.964					
Cyber-psychological 3	.922					
Cyber-psychological 4	.932					
Cyber-psychological 5	.936					
Cyber-psychological 6	.936					
Academic Behavior		.992				
Determinant: 1.24						

Note. 1. Extraction method: principal component analysis 2. Rotation method: varimax with Kaiser normalization

4.2.2 Validity, reliability, and fitness of the model

To check the model fitness, absolute, incremental, and parsimonious fit indices were calculated. Absolute fit indices included GFI (Goodness of Fit Index), and RMSE (Root Mean Square Error of Approximation). Incremental fit indices consisted of NFI (Normed Fit Index), CFI (Comparative Fit Index), and TLI (Tucker-Lewis Index), or NNFI (Non-Normed Fit Index). Finally, parsimonious fit indices included PNFI (Parsimony

Normed Fit Index), and PGFI (Parsimony Goodness-of-Fit Index) were calculated. Table 6 shows the related findings.

Table 6: Fit Indices of the Developed Model

	Absolute		Incremental			Parsimonious	
	GFI	RMSEA	NFI	CFI	TLI	PNFI	PGFI
Model	.973	.042	.956	.966	.969	.785	.749
Recommended	≥.95	≤.05	≥.95	≥.95	≥.95	≥.5	≥.5

As seen in Table 6, all of the fit indices are in the recommended range. Hence, the developed model was fit, so the collected data supported the model. To make sure about the validity and reliability of the final version of the developed model, convergent validity, discriminant validity, and composite reliability were calculated. To compute convergent validity, Average Variance Extracted (AVE) was calculated according to ? (Sum of the square of standardized loadings)/No. of indicators formula. It was revealed that all of the AVE values were above 0.5, which showed convergent validity is established across each construct in the model. In addition, it was revealed that all of the indicator variables significantly impacted their subsequent main construct. To check the discriminant validity, the square root of AVE and correlation values were calculated. The findings indicated that all of the values of the square root of AVE were more than the correlation values between latent variables so, discriminant validity was established across each construct. The composite reliability was checked according to the following formula (? standardized loadings)2/ ($\sum$ standardized loadings)2+ ?(ME). The related values were more than 0.9 that confirming the establishment of the composite reliability. Figure 3 shows the final version of the developed model.

5. Discussion

This study found six distinct cyber-psychological variables that influenced the productive academic behavior of Iranian EFL learners in E-learning courses amid the COVID-19 pandemic. The first cyber-psychological variable was Technophobia or fear of technology that has signifi-

cantly affected the academic behavior of the Iranian EFL learners in E-learning courses amid the COVID-19 pandemic.
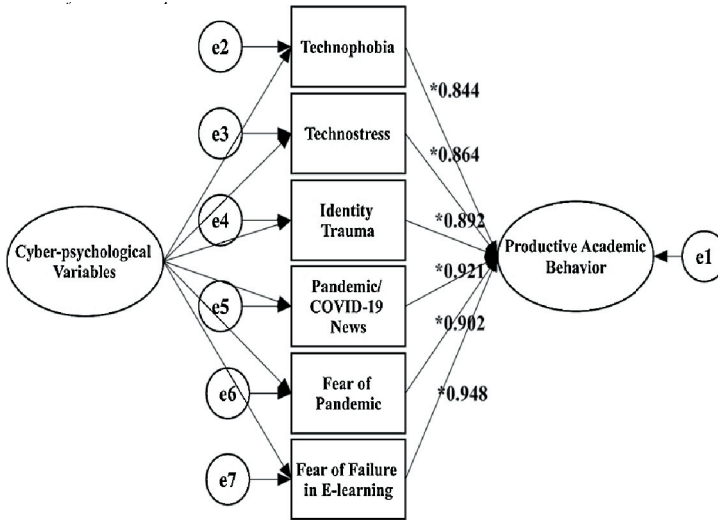

Figure 3. Final Version of the Developed Model

The findings are pursuant to that of Al-Maroof et al. (2020), in which Technophobia affected not only the performance but the academic behavior of some university students at the British University in Dubai during the COVID-19 pandemic in Google Meet courses. Based on the rationales, the researchers expected the observed findings but more research is needed to investigate Technophobia in terms of age, gender, context, and particularly digital-divide status of the E-learning users.

Technostress or being stressed or anxious in E-learning courses was the second influencing cyber-psychological variable among the Iranian EFL learners in E-learning courses. The results are consistent with that of Christian et al. (2021), in which Indonesian university students were highly stressed and anxious in E-learning courses during the Coronavirus outbreak that critically affected their academic performance and this led to their inappropriate academic behavior. Thus, it can be concluded that low academic performance can be a reason behind inappropriate, unproductive academic behavior. the observed results were not far from the

mind of researchers as Upadhyaya (2021) reported the catastrophic impacts of Technostress on academic productivity and academic behavior among Indian university students amid the social distance era.

In terms of the third cyber-psychological variable, identity trauma or the conflict of online identity and real-world self-identity significantly affected the academic behavior of the Iranian EFL learners amid the COVID-19 pandemic. The results are in line with that of Bentley et al. (2020) that found the online identity which is formed during online communication such as E-learning courses significantly affected the behavior of E-learning users not only in their academic contexts but in different contexts of their daily lives. It should be mentioned that the researchers did not expect the observed findings as they thought identity trauma was not a serious issue and could be easily handled by the Iranian EFL learners without affecting their academic behavior in E-learning courses. As stated by (Garbasevschi, 2020; Luzn, 2018) most of the university students and teachers attempted to show a different self-image mostly an enhanced one of their actual identities in online communications that due to the wide gap between their constructed enhanced self-image in online communications and their actual real-world self-identity some psychological issues appeared among them that led to short-term and long-term mental conditions that were detrimental to their academic performance and academic behavior.

With the fourth cyber-psychological variable in focus, the results indicated that the fear of pandemic or Coronaphobia has significantly impacted the academic behavior of Iranian EFL learners in E-learning courses amid the Coronavirus pandemic. The findings are congruent with (Rahman et al., 2021; Toprak et al., 2020) in which Coronaphobia was determined to cause serious physical symptoms such as musculoskeletal pain and mental symptoms including stress, dysfunctional anxiety, and stress for the university students in Turkey and Bangladesh amid the COVID-19 pandemic that led to low academic performance and aggressive behavior in academic contexts like E-learning courses. The researchers expected the observed findings particularly in the Iranian context with various problems in the healthcare system such as delayed vaccinations which was a rationale-based reason behind fear of pandemic

and catching COVID-19 that not only had critical effects on students' mindsets but on other individuals in the society as well.

As the cyber-psychological variabke with the highest impact, fear of online negative evaluation, fear of failure, or Atychiphobia had significantly affected the Iranian EFL learners' academic behavior. The findings are in accordance with (Abdullah, 2018; Downing et al., 2020) in which fear of negative evaluation and fear of failure significantly affected students' performance in different contexts whether in a primary school or a college with various ages by triggering a sense of stress and anxiety among them. As the researchers are university instructors and had observed the presence of unfair competition among students in E-learning courses amid the COVID-19 pandemic, they had experienced how the fear of being failed or negatively judged by teachers particularly in the virtual space of the E-learning courses had increased Iranian EFL learners' stress and anxiety which were reflected in their academic performance as well as their academic behavior.

Concerning the last influencing cyber-psychological variable in focus, pandemic or COVID-19 news including infodemic or disinfodemic had significant effects on the Iranian EFL learners' academic behavior amid the COVID-19 outbreak. The findings are in agreement with that of Freiling et al. (2021), in which misinformation about the COVID-19 pandemic had significantly increased the general stress among the Jordanian university students that affected their mental conditions by making them anxious about the necessity of participating in the imposed E-learning courses that resulted in low academic performance and inappropriate academic behavior. The observed findings were expected by the researchers as the effects of both infodemic and disinfodemic were noticeable among different classes of individuals in society.

6. Conclusion

As many studies conducted in multidisciplinary fields of study attempted to find different answers for the question "Who is to blame?" regarding the low academic performance and unproductive academic behavior of students particularly the ones who attended the imposed E-learning

courses in the section of higher education during the COVID-19 pandemic by putting the blame on educational policymakers, teachers, parents, and most probably students, this study followed a different path by determining how possible cyber-psychological variable mostly exposed by the pseudoscientific education policies conducted and practiced amid the social distance era of the COVID-19 pandemic influenced the productive academic behavior of Iranian EFL learners with Xenoglossophobia. The results revealed significant cyber-psychological variables that affected productive academic behavior of Iranian EFL learners with Xenoglossophobia which needs further critical investigations particularly in the Iranian context of higher education. Due to the limitations in the COVID-19 era, this study was limited in adding more participants from diverse contexts of distance education to its sample.

Conflict of Interest

The authors declare that they have no competing interests.

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