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Examining the key factors behind foreign language anxiety (FLA) in online teaching of English for Specific Purposes (ESP)

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Abstract

Though foreign language anxiety (FLA) has long been recognized as an important affective factor in second language learning, its impact is worth studying in new educational contexts of emergency remote teaching in response to the COVID-19 outbreak. The present study examines the key factors behind FLA in online teaching of English for Specific Purposes (ESP). The research was conducted among a sample of 171 first-year undergraduate university students of Economics & Business economics and Informatics at the Juraj Dobrila University of Pula, Croatia, during the winter semester of 2020/2021. The research instrument used was a 33-item questionnaire adapted from the FLCAS scale (Horwitz et al., 1986) to reflect the online ESP classroom environment. The main results indicate that various background factors, such as gender, self-assessed levels of proficiency, length of learning English and frequency of English language use, significantly influence the reported levels of language anxiety. Furthermore, the study establishes the underlying structure of FLA, with five factors positively correlated with overall language anxiety at the .01 level of statistical significance: speech anxiety, evaluation and comprehension anxiety, online ESP classroom environment, anxiety of talking to native speakers, and lack of motivation for online class attendance. Finally, multiple regression analysis shows that the five aspects of FLA, alongside the variables of gender and self-assessed pronunciation proficiency, represent statistically significant predictors of the total level of FLA among online ESP learners. The other independent variables are confirmed to be unreliable in predicting the overall level of language anxiety in an online ESP classroom.

Key words: foreign language anxiety (FLA); English for Specific Purposes (ESP); online teaching; e-learning; university students.

1. Introduction

Alongside the massive use of the Internet and ICT technologies that have reshaped our personal, professional and academic lives, the COVID-19 outbreak has further contributed to significant transformations in the field of

education, affecting pedagogical methods, distance and cooperative learning, and mental health of students at different educational stages (*cf.* He & Xiao, 2020; Bilgiç, 2021; Elharake et al., 2022). In the spring of 2020, most of the European educational context rapidly migrated to virtual environments in an attempt not to disrupt the teaching processes. Teachers and students alike were challenged to adapt overnight to new methods of teaching and modes of study, and to find innovative ways of communicating, collaborating and sharing resources. At the same time, new methods of student evaluation had to be established, while keeping the learning outcomes intact and the teaching objectives consistently followed. Such abrupt transition from the conventional, face-to-face form of education to emergency remote teaching (Hodges et al., 2020) represented a tectonic shift in the way traditional study programs are delivered. The inevitability of resorting to technology and virtual environments, the loss of routine, social isolation and disrupted social ties caused our students to work under conditions of considerable stress and, most likely, experience increased levels of anxiety related to the pandemic (e.g. Islam et al., 2020; Rotas & Cahapay, 2020). In addition, they had to cope with numerous obstacles in terms of online learning: incomplete learning resources, problems with operating learning applications, limited Internet access, poor communication and decreased learning motivation, to name a few (e.g. Prayudha, 2021; Khanna & Prasad, 2020). Moreover, foreign language learners may have experienced heightened levels of perceived language anxiety, accompanied by concerns related to using new learning technologies (Russell, 2020). Language educators were invited to address these concerns and deliver effective online language teaching, often without sufficient time or adequate resources to design online language courses, and often with little or no professional training in online language pedagogy (Russell, 2020). It was this precise context that brought experiences and challenges which inspired the current study by indicating the need to examine language anxiety in the context of emergency online teaching of English for Specific Purposes (ESP).

Since the affective side of learning cannot be separated from its cognitive aspects, it should be recognized that anxiety can indeed hinder the learning process by provoking negative feelings such as frustration, self-doubt, apprehension and tension (Arnold & Brown, 1999). For some learners, the perceived levels of anxiety associated with language learning can be aggravating, and a number of studies have demonstrated its negative effects on the learner's L2 performance (e.g. Chen & Tsou, 2017; Zhao et al., 2013; Chen & Chang, 2004; Sellers, 2000; MacIntyre & Gardner, 1994; Aida, 1994; Horwitz et al., 1986). Anxiety specifically associated with language learning falls into the category of specific anxiety reactions to distinguish individuals who are anxious only in specific situations from those who are generally anxious in a variety of situations (Horwitz et al., 1986; MacIntyre & Gardner, 1991a).

Moreover, language anxiety can be differentiated from other specific anxieties related to academic tasks such as test-taking, or academic subjects such as mathematics or science (Horwitz et al., 1986). It is usually associated with an array of negative subjective feelings and beliefs around language learning, and can be defined as "the feeling of tension and apprehension specifically associated with second language contexts, including speaking, listening, and learning" (MacIntyre & Gardner, 1994: 284). Elaine K. Horwitz, whose work was pivotal in recognizing language anxiety as specific to foreign language learning within the classroom setting, conceptualized language anxiety as related to but distinguishable from other performance anxieties, namely communication apprehension, fear of negative evaluation and test anxiety (Horwitz, 1986: 561). Though parallels can be drawn among these related constructs, language anxiety is more appropriately conceived as "a distinct complex of self-perceptions, beliefs, feelings, and behaviors related to classroom language learning arising from the uniqueness of the language learning process" (Horwitz et al., 1986: 128). According to Horwitz et al. (1986), although potentially good and highly motivated learners in other situations, anxious language learners may experience mental blocks and exhibit anxious reactions and behaviors in a language classroom. For example, they might be unwilling to speak in front of others, forget previously learned contents in evaluative situations, have difficulty concentrating or even experience psycho-physiological reactions such as palpitations and trembling (Horwitz et al., 1986). Such responses to language learning may affect the communication strategies students employ in the classroom, promote avoidance behavior such as postponing homework or test-taking, and generally decrease motivation (Ushida, 2005; Horwitz et al., 1986; Ely, 1986; Gardner, 1985). In addition, anxious language learners often hold strong negative beliefs about language learning; for example, they might falsely believe nothing should be said in a foreign language until one reaches a certain level of fluency, or that it is not appropriate to guess a word or meaning from context (Horwitz et al., 1986; Horwitz, 1986). They might also be overly concerned about not being able to comprehend the content of every target language message or believe that others are better than they are in foreign languages. Such erroneous beliefs can have debilitating effects on achieving foreign language fluency and prevent any progress at all, thus contributing to the student's tension in the language classroom even further (Russell & Curtis, 2013; Horwitz, 1988). Since perceived levels of stress can interfere with language acquisition, it is no surprise that language anxiety has been at the focus of much L2 research over the last few decades (for an overview, see MacIntyre, 2017). One of the most extensively used research instruments specifically designed to measure the learner's perceived levels of FLA is the *Foreign Language Classroom Anxiety Scale* (FLCAS) developed by Horwitz, Horwitz and Cope (1986). The 33 items composing the scale were

initially developed based on students' self-reports, clinical experience, teaching experience with anxious students and a review of related instruments (Horwitz, 1986). Since its development, the FLCAS has been widely used in L2 research and today represents a reliable instrument which language educators can use to measure their students' perceived levels of language anxiety. The FLCAS was validated as reliable on several occasions; Horwitz demonstrated its validity with Cronbach's alpha coefficient, r=.93 and test-retest reliability, r=.83 (Horwitz, 1986: 560); Aida (1994: 158, 159) confirmed the scale's reliability among university students of Japanese as a foreign language, with Cronbach's alpha, r=.94 and test-retest reliability, r=.80; Cheng et al. (1999: 424) reported Cronbach's alpha, r=.95 with the Chinese version of the FLCAS. The measuring instrument used in the current study was adapted based on the FLCAS (Horwitz et al., 1986) to reflect the online ESP classroom environment. The modified version was confirmed as highly reliable among a group of Croatian L1 online ESP learners, with Cronbach's alpha coefficient, r=.95 achieved for the full scale with nine reversed items (see Section 3.3). Such results are consistent with the previous findings, which confirmed that the FLCAS is an appropriate tool for measuring FLA in both face-to-face and online environments (e.g. Pichette, 2009; Russell, 2018).

Though language anxiety has long been recognized as an important affective factor that can negatively impact second language learning and acquisition, it seems important to consider the phenomenon in the context of emergency online language teaching. Scholars have already recognized that not all learners are good candidates for online language learning, especially those who lack the motivation and the self-discipline to take control over the learning process without relying on teacher mediation and despite the physical and emotional isolation from their peers (Russell, 2020; White, 2003). For example, Ushida (2005) demonstrated the importance of students' motivation and attitudes in online language learning, with highly motivated learners studying regularly and productively, taking every opportunity to perfect their language skills. Furthermore, since online language learners are typically required to actively engage in communicative interactions using audio and video tools, anxious learners may experience anxiety related to both language learning and to the online technologies that are used to communicate in the target language (Russell, 2020; Pichette, 2009; Ushida, 2005). Interestingly, Pichette (2009) found that levels of language anxiety among more advanced online learners tend to decrease in comparison to language learners in traditional, face-to-face classrooms. Certain studies suggest that anxiety related to online language learning can be decreased over time through achieving familiarity with the online learning environment and due to online practice in conversing with native speakers (e.g. Russell, 2018; Ushida, 2005). Other studies have also demonstrated that collaborative

online language practices, especially with native speakers, can help alleviate language anxiety. For example, Appel & Garcia (2020) demonstrated that FLA can be reduced over time by using e-tandem, a telecollaborative language learning practice commonly involving native speakers of different languages who converse in an online setting in order to learn each other's languages. Similar results were obtained by El-Hariri (2017), who confirmed that e-tandem has the potential of reducing anxiety and raising confidence among language learners, though such effects are not necessarily transferrable to foreign language classroom. Similarly, Melchor-Couto (2016) demonstrated that oral interactions with native speakers in virtual worlds can help in decreasing FLA in comparison to oral interactions in traditional classrooms. The increased confidence and decreased nervousness which students report were attributed only partially to the anonymity afforded by the virtual world environment (Melchor-Couto, 2016). Others have suggested that blended learning, a combination of formal face-to-face language courses and meaningful oral interactions with native speakers in online environments can contribute to enriching educational contexts and add value to a sound pedagogical approach in language teaching (e.g. Jauregi & Canto, 2012). By examining the key factors behind FLA in an online ESP classroom environment, the current study aims to contribute to L2 research interested in the effects of FLA among online language learners.

2. Research questions

The present study aims to examine the key factors behind foreign language anxiety (FLA) among Croatian L1 university students attending English for Specific Purposes (ESP) courses in an online environment. The hypothesized differences in the levels of FLA among the sample are assessed with regard to the various background factors such as gender, study program and self-assessed English proficiency. The study further investigates the underlying components of FLA and their relationship with the total level of FLA and, finally, tries to determine which of the independent variables represent the best predictors of language anxiety among online ESP learners. In particular, the study aims to answer the following research questions:

RQ_1 Are there any significant differences in the reported levels of foreign language anxiety (FLA) with regard to the background factors of gender, study program, length of learning English, frequency of English language use or self-assessed English proficiency?

RQ_2 Which underlying components constitute foreign language anxiety (FLA), and what is their relationship with the total level of FLA in an online ESP classroom environment?

RQ_3 Which of the independent variables addressed by RQ_1 and RQ_2 represent the best predictors of foreign language anxiety (FLA) in online teaching of ESP?

The author hypothesizes there could be significant differences in reported levels of FLA with regard to gender, self-assessed levels of proficiency and length of learning English. It is assumed that less proficient students experience greater levels of FLA, and that levels of FLA decrease among more experienced learners. The author also speculates that the background factors and the different aspects of FLA both affect the total level of FLA which students experience in an online ESP classroom. If so, then this might help us better understand the online learners' needs and devise strategies to advance the quality and efficiency of online foreign language teaching.

3. Methodology

3.1. *Participants*

The research was conducted during the winter semester of the academic year 2020/2021 among the first-year undergraduate university students at the Faculty of economics and tourism "Dr. Mijo Mirković" (FET) and the Faculty of informatics (FIPU) of the Juraj Dobrila University of Pula, Croatia. The total number of participants was 171, with 56.1% studying Economics and Business economics, and 43.9% studying Informatics. The participants' median age was 19 (min. 18, max. 43), and 95.9 % reported Croatian as their mother tongue. The sample was well-balanced in terms of gender, with 47.4 % male and 52.6 % female participants. Over a quarter of respondents (25.7%) reported fluency in foreign languages other than English; mainly German (10.5%), Italian (9.9%), or their combination (2.9%). In addition, 16.4 % reported they were currently learning foreign languages other than English (German (5.8%), Italian (1.8%), German and Italian (1.8%), Spanish (1.2%), etc.). An overview of the basic characteristics is given in Table 1.

Regarding the English language learning profile, the respondents mostly belong to an early phase of foreign language acquisition. The vast majority started learning English either at elementary school (69.6%) or in kindergarten (19.9%), predominantly around the age of 7 (m=7.06, MDN=7). At the time of conducting the research, the study participants had been learning the language for 12 years on average (m=12.59, MDN=12) (Table 2).

Regarding the frequency of English language use, the vast majority of respondents report to use the language either on a daily (38.0%) or at least on a regular basis (38.6%). Only under a quarter use English only occasionally or never (23.4%) (see Table 3). Regarding the situations in which English is chosen as the language of preference, almost half expectedly report to use it

primarily on the Internet (48.0%), while 18.1% report academic contexts to be the second most common setting (online classes included). Only 13.5% use English for socializing, and 11.7% at work.

Table 1: The basic demographic profile of the sample (N=171)

	Frequency	Percent	Valid Percent	Cumulative Percent
Gender				
Female	90	52.6	52.6	52.6
Male	81	47.4	47.4	100.0
Total	171	100.0	100.0	
Study program*				
Economics & Business Economics (FET)	96	56.1	56.1	56.1
Informatics (FIPU)	75	43.9	43.9	100.0
Total	171	100.0	100.0	
Mother tongue				
Croatian	164	95.9	95.9	95.9
Other**	7	4.1	4.1	100.0
Total	171	100.0	100.0	

* 1st year undergraduate study programs (N=171)

** L1 other than Croatian: Macedonian (1.2%), Italian (0.6%), English (0.6%), Albanian (0.6%), Bosnian (0.6%), Istrian (regional) (0.6%)

Source: Author's research.

Table 2: Descriptive statistics on EFL learning among the sample (N=171)

The beginning and length of learning English				
	Mean	Median	Mode	SD
Age at the start of learning English	7.06	7.00	7	1.989
Length of learning English (in years)	12.59	12.00	12	2.932

Source: Author's research.

Table 3: Descriptive statistics on frequency of English use (N=171)

Frequency of English language use				
	Frequency	Percent	Valid Percent	Cumulative Percent
Very often or often	66	38.6	38.6	38.6
On a daily basis	65	38.0	38.0	76.6
Occasionally/never	40	23.4	23.4	100.0
Total	171	100.0	100.0	

Source: Author's research.

Table 4: Self-assessed English language and pronunciation proficiency

	Frequency	Percent	Valid Percent	Cum. Percent	Mean	SD
Self-assessed English language proficiency						
Very poor	2	1.2	1.2	1.2		
Poor	10	5.8	5.8	7.0		
Good	62	36.3	36.3	43.3		
Very good	72	42.1	42.1	85.4		
Excellent	25	14.6	14.6	100.0		
Total	171	100.0	100.0		3.63	.846
Self-assessed English pronunciation skills						
Very poor	4	2.3	2.3	2.3		
Poor	16	9.4	9.4	11.7		
Good	60	35.1	35.1	46.8		
Very good	65	38.0	38.0	84.8		
Excellent	26	15.2	15.2	100.0		
Total	171	100.0	100.0		3.54	.941

Source: Author's research.

Table 4 shows the self-assessed levels of English language proficiency and pronunciation proficiency among the sample. Over two thirds assess their general English knowledge and pronunciation skills as either 'good' (36.3 % and 35.1 %, respectively) or 'very good' (42.1 % and 38.0 %, respectively). Around one-sixth assess their English skills and pronunciation proficiency as above average or 'excellent' (14.6 % and 15.2 %, respectively). Only a minor proportion of respondents assess their English proficiency as insuf-

ficient (5.8 % as 'poor' and 1.2% as 'very poor'), while 11.7 % believe their pronunciation skills are below average (9.4 % for 'poor' and 2.3 % for 'very poor'). For the purposes of statistical analysis with regard to self-assessed proficiency, the sample was grouped as follows: 1 Poor (for 'very poor' and 'poor'), 2 Good (for 'good'), and 3 Excellent (for 'very good' and 'excellent').

The current study takes the background factors of gender, study program, length of learning English, frequency of English language use and self-assessed levels of proficiency as important parameters under consideration in investigating the perceived levels of FLA among online ESP learners.

3.2. *The structure of the online ESP courses*

The two ESP courses that provided the context for this research are *English in Economics* with elements of *Business English*, attended by students of Economics and Business Economics, and *English of the IT Profession* for students of Informatics at the Juraj Dobrila University of Pula, Croatia. Both courses are obligatory at the first year of the two respective undergraduate study programs. Each course brings 6 ECTS credits altogether, which represents a 168-hour student workload (1 ECTS credit = 28 working hours at the University of Pula), in accordance with the European Credit Transfer and Accumulation System (ECTS). The two courses are usually conducted in traditional, face-to-face classes, and supported by direct consultations with the lecturer during office hours. Prior to the inevitable shift to distance learning during the pandemic lockdowns, e-learning had only partially been used in both ESP courses, with additional course materials available online and intended for contents revision, repetition and self-study. During the focus period, however, both ESP courses were held exclusively in the virtual environment and predominantly relied on scheduled real-time classes via the Moodle 3.9 platform, using the BigBlueButton plugin as a videoconferencing interface. The BigBlueButton is an open source virtual classroom software, developed at Carleton University's Institute for Technology Entrepreneurship and Commercialization in Ottawa, Canada, and launched in 2007. Videoconferencing was chosen as the main mode of class delivery and a substitute for the usual language classroom, used for delivering lectures, students' presentations, listening exercises, video streaming and discussions, and for holding oral exams. In order to promote engagement and group learning, the BBB's additional features were also used during online classes. For example, breakout rooms were used for pair and group work by splitting the attendants into separate sessions, polls were used for quick contents revision, shared notes for making word lists or taking group notes during classes. Aside from the synchronous classes, other e-learning options were used for individual assignments, self-study and student assessment. This primarily refers to extensive databases of online exercises and tests,

developed in order to ensure regular contents revision, as well as formal student assessment. The most extensively used format in online test design was a type of cloze-test offered by Moodle, which has proved to be the most convenient since it can easily be adapted to a wide variety of written foreign language assignments. The online tests were used both in class and for independent work, as well as for designing online written exams.

3.3. *Research instrument*

The measuring instrument used in the current study was a questionnaire examining the perceived levels of FLA students experience during online ESP classes. The 33 questionnaire items were adapted from the *Foreign Language Classroom Anxiety Scale* (FLCAS) developed by Horwitz, Horwitz and Cope (1986), which has long been validated as reliable (Cheng et al., 1999; Aida, 1994; Horwitz et al., 1986; Horwitz, 1986). The modifications made for the purposes of the current study reflect the online classroom environment in which both ESP courses were conducted at the time. The study participants were asked to express levels of agreement with each of the 33 statements using a five-degree scale (from 5 – strongly agree, to 1 – strongly disagree). The adaptation method used was adding the word "*online*" to "foreign language class", so the formulation became "*online* foreign language class". Similarly, "language class" became "*online* language class", and "language classroom" became "*online* language classroom". In addition, "my other classes" became "my other *online* classes" (Item 26); the words "during tests in my language class" were replaced with "*while taking online* tests *during* my *online* language class" (Item 8), the wording "…not going to my language class" was replaced with "…not *attending my online* language class" (Item 17). The words "*during online language class*" were added to Item 15, the words "*in an online class*" were added at the end of Item 31, and "a language test" in Item 21 became "*an online* language test". The wording of item 28, "When I'm on my way to language class…" was replaced with "When I'm *about to sign into my online language classroom*". The modified list of 33 items comprising the scale is given in the *Appendix*. Altogether, nine questionnaire items were reversed and recoded prior to statistical analysis due to positive or negative wording (Items 2, 5, 8, 11, 14, 18, 22, 28, 32), so that the highest scores always indicate the highest levels of FLA. The value of Cronbach's alpha coefficient, r=.95 achieved for the full 33-item scale with nine reversed items, indicates a high level of internal consistency (see Section 3.4). In addition, the questionnaire included a brief cover letter and data confidentiality note, informing the participants on the subject of the research, voluntary participation, assurance of anonymity and the right to discontinue further participation at any time. Further, it asked the participants to provide the basic demographic profile (age, gender, mother

tongue), and other key information relevant to their English learning, such as self-assessed levels of English proficiency, and the frequency and purposes of using English. Finally, the questionnaire included an open-ended question on issues of anxiety and discomfort during online ESP classes. The qualitative contribution was substantial and will hopefully be published at a later date. The questionnaire was translated into Croatian to ensure accuracy and distributed in an online format (via Google forms) during regular online classes, with the total number of 171 responses returned.

3.4. *Data analysis*

The data were analyzed by means of the SPSS statistical package. The statistical procedures used to answer the main research questions are as follows: descriptive statistics, a series of one-way ANOVA tests, exploratory factor analysis (PCA), Pearson's correlation coefficient and multiple regression. Levene's test was used to confirm homogeneity of variance, and Scheffe's post-hoc test to compare group means in analysis of variance (ANOVA). Cronbach's alpha coefficient was used to analyze the internal consistency of the full scale and the five subscales determined through factor analysis. The modified version of the FLCAS was confirmed as highly reliable, with the Cronbach's alpha coefficient, r=.86 achieved for the full 33-item scale, and an even greater value of Cronbach's alpha, r=.95 achieved for the full scale with nine reversed items so that the highest scores always indicate the highest levels of FLA (Items 2, 5, 8, 11, 14, 18, 22, 28, 32).

4. Results and discussion

In order to present the findings and answer the research questions, the results are organized into three sections: 4.1. The impact of background factors on reported levels of FLA; 4.2. The main components of FLA in an online ESP classroom; 4.3. The main predictors of FLA in an online ESP classroom.

4.1. *The impact of background factors on reported levels of FLA*

In order to answer the first research question, the assumed differences in reported levels of FLA are examined with regard to the background factors of gender, study program, self-assessed English proficiency and pronunciation proficiency, length of learning English and frequency of English language use. A series of one-way ANOVA tests confirms that all factors under consideration significantly influence the perceived levels of FLA students experience in an online ESP classroom environment. The assumption of homogeneity is confirmed by means of Levene's statistic in all cases under

consideration. The results are presented in the following subsections (4.1.1. to 4.1.6.).

4.1.1. *Reported levels of FLA with regard to gender*

Descriptive statistics shows that female participants (m=3.0923, SD=.84032) report higher levels of FLA in comparison to male learners (m=2.6476, SD=.73922). The ANOVA test confirms that the difference in perceived levels of FLA with regard to gender is statistically significant (F (1.169)=13.369, p=.000, p<.05) (Table 5). Such results confirm previous findings, which demonstrate that female learners experience significantly increased levels of language anxiety in comparison to male learners (Gerencheal, 2016; Park & French, 2013), including higher levels of speaking anxiety (Öztürk & Gürbüz, 2013). Interestingly, Kitano (2001) found that male students become more anxious than their female peers when they perceive themselves as less competent L2 users. Other studies, however, suggest there is no significant effect of gender on perceived levels of FLA (e.g. Aida, 1994; Kimura, 2008). It seems the overall findings regarding the association between gender and perceived levels of FLA still require additional clarification.

Table 5: Difference in reported levels of FLA with regard to gender

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	8.430	1	8.430	13.369	.000
Within Groups	106.563	169	.631		
Total	114.992	170			
Levene's test, F=2.368, p=.126, p>.05					

Source: Author's research.

4.1.2. *Reported levels of FLA with regard to study program*

The analysis of variance (ANOVA) further shows there is a statistically significant difference in the perceived levels of FLA between the two observed student profiles, regarding the choice of the study program (F (1,169)=12.833,p=.000, p<.05) (Table 6). The participants studying Economics and Business economics (m=3.0742, SD=.85318) report significantly greater levels of language anxiety than the students of Informatics (m=2.6352, SD=.71400). Previous research has already shown that it is not uncommon for students of different majors to experience varied levels of FLA (e.g. Tien, 2018; Wang, 2014). Considering additional parameters such as the learner's

achievement in the language class or levels of prior L2 proficiency might be crucial in comparing various student profiles.

Table 6: Difference in reported levels of FLA with regard to study program

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	8.116	1	8.116	12.833	.000
Within Groups	106.877	169	.632		
Total	114.992	170			
Levene's test, F=3.711, p=.056, p>.05					

Source: Author's research.

4.1.3. *Reported levels of FLA with regard to length of learning English*

Since the study participants report to have been learning English for 12 years on average, the sample is grouped accordingly into three subsets. The results show that participants who learn English for more than 12 years report the lowest levels of FLA (m=2.6634, SD=.83174), average scores are achieved by those who learn English for 12 years (m=3.0108, SD=.80911), while those who learn English for less than 12 years achieve the highest scores (m=3.1143, SD=.72972). The ANOVA test confirms the differences among the sample groups with regard to reported length of learning English are statistically significant (F (2,168)=4.994, p=.008, p<.05) (Table 7).

Table 7. Differences in reported levels of FLA with regard to length of learning English

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	6.453	2	3.226	4.994	.008
Within Groups	108.539	168	.646		
Total	114.992	170			
Levene's test, F=.728, p=.484, p>.05					

Source: Author's research.

Scheffe's post-hoc test reveals that students who learn English the longest report significantly lower levels of FLA than those who learn English for 12 years on average (p=.045, p <.05), and those who learn the language for less than 12 years (p=.026, <.05). On the other hand, no statistically significant difference is found between respondents who learn English for 12 years and those who learn it for less than 12 years (p=.831, p>.05). Nevertheless, it seems that levels of FLA students experience in an online ESP classroom decline with longer years of learning English. Such results are consistent

with other studies which suggested that more experienced learners exhibit lower levels of language anxiety (e.g. Liu & Chen, 2013).

4.1.4. *Reported levels of FLA with regard to frequency of English use*

Regarding the frequency of English language use among the sample, the results show that students who use English on a daily basis score lowest on the adapted FLCAS scale (m=2.4629, SD=.80443), those who use it frequently achieve average scores (m=2.9454, SD=.66357), while those who use the language only occasionally or never report the highest levels of FLA (m=3.4568, SD=.71718). The ANOVA test confirms the differences among the sample groups with regard to frequency of English language use are statistically significant (F (2,168)=23.212, p=.000, p<.05) (Table 8).

Table 8: Differences in reported levels of FLA with regard to frequency of English language use

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	24.896	2	12.448	23.212	.000
Within Groups	90.096	168	.536		
Total	114.992	170			
Levene's test, F=.666, p=.515, p>.05					

Source: Author's research.

In addition, Scheffe's post-hoc test confirms that students who use English on a daily basis achieve significantly lower scores than those who use it frequently (p=.001, p<.05) or only occasionally (p=.000, p<.05). The difference between students who use English frequently and only occasionally is also statistically significant (p=.003, p<.05). In other words, the total level of FLA significantly decreases in parallel to the increased frequency of use, though the direction of causality between the two remains unclear.

4.1.5. *Reported levels of FLA with regard to self-assessed English proficiency*

Regarding the self-assessed levels of English proficiency, students who assess their English language skills as excellent report the lowest levels of FLA (m=2.5667, SD=.74121), those who assess their English knowledge as good report average levels of FLA (m=3.1544, SD=.68246), while less proficient students report the highest levels of anxiety in an online ESP classroom (m=4.0177, SD=.61174). The ANOVA test confirms that the differences among the sample groups with regard to self-assessed English proficiency are statistically significant (F (2,168)= 29.280, p=.000, p<.05) (Table 9).

Table 9: Differences in reported levels of FLA with regard to self-assessed English proficiency

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	29.723	2	14.861	29.280	.000
Within Groups	85.270	168	.508		
Total	114.992	170			
Levene's test, F=.373, p=.689, p>.05					

Source: Author's research.

In addition, Scheffe's post-hoc test confirms that less proficient students report significantly higher levels of FLA in comparison to those who assess their English proficiency as either average (p=.001, p<.05) or excellent (p=.000, p<.05). The difference between the most proficient students and those who assess their English proficiency as average is also statistically significant (p=.000, p<.05). The current findings demonstrate that students who perceive their language skills as insufficient experience significantly higher levels of FLA in comparison to language learners who are more confident about their language skills. Such results indicate that self-assessed levels of proficiency may influence the perceived levels of language anxiety. However, the opposite is also a valid assumption; Cornwell & McKay (2000: 116) have already suggested that anxious students tend to underestimate their linguistic skills as opposed to less anxious learners, who tend to overestimate their competence. In addition, Sparks & Ganschow (2007) also suggested that self-perceived competence may represent a confounding variable in the research of language anxiety. Nevertheless, the current results regarding the relationship between FLA and self-perceived proficiency are consistent with those by Kitano (2001), who demonstrated that levels of anxiety increase among learners who perceive their L2 competence as lower in comparison to other speakers. Other studies have also asserted that language anxiety is negatively correlated with the learners' self-rated proficiency (e.g. Liu & Jackson, 2008; Sultan, 2012).

4.1.6. *Reported levels of FLA with regard to self-assessed pronunciation proficiecy*

Similar results are obtained with regard to self-assessed pronunciation proficiency. Students who assess their pronunciation skills as excellent report the lowest levels of FLA in an online ESP classroom (m=2.5118, SD=.75495), those who assess their pronunciation as good achieve average scores (m=3.1773, SD=.60808), while students who assess their pronunciation skills

as insufficient report the highest levels of language anxiety (m=3.6773, SD=.77901). The ANOVA test confirms the differences among the sample groups with regard to self-assessed pronunciation proficiency are statistically significant (F (2,168)=30.120, p=.000, p<.05) (Table 10).

Table 10: Differences in reported levels of FLA with regard to self-assessed pronunciation proficiency

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	30.350	2	15.175	30.120	.000
Within Groups	84.642	168	.504		
Total	114.992	170			
Levene's test, F=2.070, p=.129, p>.05					

Source: Author's research.

Finally, Scheffe's post-hoc test confirms that statistically significant differences lie between the participants who assess their pronunciation skills as poor and those who assess them as excellent (p=.000, p<.05) or average (p=.026, p<.05). The difference between those who excel in English pronunciation and those who assess it as average is also statistically significant (p=.000, p<.05), thus confirming that self-assessed levels of pronunciation proficiency significantly influence levels of FLA among online language learners. Such results further corroborate previous findings, which suggest there is a strong negative association between FLA and self-perceived proficiency (e.g. Kitano, 2001).

As shown in Tables 5–10, data analysis confirms that various background factors significantly influence the reported levels of FLA among university students attending online ESP classes. The results indicate that gender, study program, self-assessed levels of proficiency, length of learning English and frequency of English language use, represent significant factors behind the overall levels of language anxiety students experience in an online ESP classroom. While female and less proficient students exhibit significantly higher levels of language anxiety, students who learn English the longest and those who use it on a regular basis report significantly lower levels of FLA in an online foreign language classroom environment.

4.2. *The main components of FLA in an online ESP classroom*

The next step in data analysis is aimed at answering the second research question. Exploratory factor analysis (PCA) is used to explore the relationships among the 33 questionnaire items and identify the underlying compo-

nents that constitute FLA in an online ESP classroom environment. The factorability of the correlation matrix is examined by means of the Kaiser-Meyer-Olkin Measure of Sampling Adequacy and Bartlett's test of sphericity. As shown in Table 11., the KMO MSA value of .922 indicates the appropriateness of the sample size, since KMO values above 0.9 can be considered "perfect" in terms of sampling adequacy (Field, 2009: 679). In addition, Bartlett's test is statistically significant (X^2 (528) = 3417.997, p=.000), suggesting that the correlation matrix is significantly different from the identity matrix and thus suitable for factor analysis. The extraction criteria used are eigenvalues greater than 1.0, in accordance with Kaiser's criterion, which produces the most accurate solutions in situations with fewer than 40 variables and an adequate sample size (Loewen & Gonulal, 2015). Both assumptions have been met in the current study.

Table 11: The values of KMO MSA and Bartlett's Test

KMO Measure of Sampling Adequacy		.922
Bartlett's Test of Sphericity	Approx. Chi-Square	3417.997
	df	528
	Sig.	.000

Source: Author's research.

The PCA method initially extracted six factors, accounting for 64.005% of the total variance, which represents a strong argument for retaining the 6-factor solution. Although the initial matrix groups the items into logical subsets, it does not seem fully informative since a large proportion of items show either very low factor loadings (below .30), or factor loadings for several different factors, with numerous overlaps. In order to clarify the factor matrix and make it more interpretable, the cumulative percentage of extracted variance is used as the main factor retention criterion. Though there are no well-established thresholds, certain authors suggest that the minimum cumulative percentage of explained variance should be around 55-65% (Field, 2009). According to Plonsky & Gonulal (2015), the average cumulative percentage of variance in factor analytic L2 research is approximately 60 %. In order to determine the fewest number of factors that would still explain a substantial amount of variance, the author decided to adopt a 5-factor solution, accounting for 60.5 % of the total variance (see Table 12).

Table 12: Total variance explained, initial eigenvalues > 1.0

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Var-iance	Cum. Percent	Total	% of Var-iance	Cum. Percent
1	13.334	40.407	40.407	13.334	40.407	40.407
2	2.082	6.308	46.716	2.082	6.308	46.716
3	1.788	5.418	52.133	1.788	5.418	52.133
4	1.542	4.674	56.807	1.542	4.674	56.807
5	1.223	3.705	60.512	1.223	3.705	60.512
6	1.153	3.493	64.005	1.153	3.493	64.005

Extraction Method: Principal Component Analysis.

Source: Author's research.

Finally, the factor rotation method had to be determined since rotating the factor matrix produces a more differentiated solution. Oblique rotation, which produces factors which are correlated, was chosen since factors related to human cognition and language learning are assumed to be related (Loewen & Gonulal, 2015: 197). The PCA is thus performed with five fixed factors and the loading criteria of .40, alongside Promax rotation with Kaiser normalization and the default Kappa value of 4, providing the most suitably defined factor structure. Table 13. presents the factor pattern matrix after rotation and the items with primary loadings above .40, crystalizing five underlying components of FLA in an online ESP classroom environment.

Table 13: The rotated 5-factor pattern matrix; loading criteria >.40

Pattern Matrix[a]	**Component**				
	1	2	3	4	5
COMPONENT 1: SPEECH ANXIETY					
Item 13. It embarrasses me to volunteer answers in my online language class.	.885				
Item 20. I can feel my heart pounding when I'm going to be called on in an online language class.	.829				
Item 1. I never feel quite sure of myself when I am speaking in my online foreign language class.	.792				
Item 9. I start to panic when I have to speak without preparation in an online	.783				

language class.	
Item 24. I feel very self-conscious about speaking the foreign language in front of other students.	.755
Item 3. I tremble when I know that I'm going to be called on in an online language class.	.751
Item 27. I get nervous and confused when I am speaking in my online language class.	.720
Item 16. Even if I am well prepared for an online language class, I feel anxious about it.	.686
Item 31. I am afraid that the other students will laugh at me when I speak the foreign language in an online class.	.678
Item 33. I get nervous when the language teacher asks questions which I haven't prepared in advance.	.656
Item 12. In an online language class, I can get so nervous I forget things I know.	.603
Item 10. I worry about the consequences of failing my foreign language class.	.563
Item 18. I feel confident when I speak in an online foreign language class.	.551
Item 19. I am afraid that my language teacher is ready to correct every mistake I make. **Item 15*. I get upset when I don't understand what the teacher is correcting during online language class.**	.472
COMPONENT 2: EVALUATION AND COMPREHENSION ANXIETY	
Item 25. My online language class moves so quickly I worry about getting left behind.	.860
Item 29. I get nervous when I don't understand every word the language teacher says.	.769
Item 30. I feel overwhelmed by the number of rules you have to learn to speak a foreign language.	.763
Item 21. The more I study for an online	.683

language test, the more confused I get.				
Item 26. I feel more tense and nervous in my online language class than in my other online classes.	.618			
Item 4. It frightens me when I don't understand what the teacher is saying in the foreign language.	.613			
Item 23. I always feel that the other students speak the foreign language better than I do.	.606			
Item 7. I keep thinking that the other students are better at languages than I am.	.588			
COMPONENT 3: ONLINE ESP CLASSROOM ENVIRONMENT				
Item 8. I am usually at ease while taking online tests during my online language class.		.681		
Item 5. It wouldn't bother me at all to take more online foreign language classes.**		.575		.425
Item 2. I don't worry about making mistakes in an online language class.		.518		
Item 22. I don't feel pressure to prepare very well for an online language class.		.471		
Item 28. When I'm about to sign into my online language classroom, I feel very sure and relaxed.		.469		
COMPONENT 4: ANXIETY OF TALKING TO NATIVE SPEAKERS				
Item 14. I would not be nervous speaking the foreign language with native speakers.			.842	
Item 32. I would probably feel comfortable around native speakers of the foreign language.			.816	
Item 11. I don't understand why some people get so upset over foreign language classes.			.438	
COMPONENT 5: LACK OF MOTIVATION FOR ONLINE CLASS ATTENDANCE				
Item 17. I often feel like not attending my online language class.				.817
Item 6. During online language class, I find myself thinking about things that have nothing to do with the course.				.778

Extraction Method: Principal Component Analysis. Rotation Method: Promax with Kaiser Normalization.[a]
a. Rotation converged in 8 iterations.

* Item 15 excluded from the final analysis (factor loading below .40)

** Item 5 included in component 3 (factor loading .575)

Source: Author's research.

The first aspect of FLA refers to *speech anxiety* in an online environment, with the belonging questionnaire items describing situations of heightened anxious reactions when presented with an opportunity to talk in front of others, to volunteer answers or engage in discussions during online ESP classes. Anxious language learners are generally less willing to actively participate in oral classroom activities (Horwitz et al., 1986; Ely, 1986) and often tend to avoid more complex linguistic structures that less anxious students would be willing to attempt (Horwitz et al., 1986; Kleinmann, 1977). Speech anxiety in an online ESP classroom seems to be largely guided by one's fear of being called upon to speak without prior preparation or being ridiculed by the other students in the class. Moreover, certain items classified by Horwitz et al. (1986) as indicative of fear of negative evaluation (Items 3, 13, 20, 31, according to Aida, 1994: 161) are grouped under the component of speech anxiety. It is interesting to notice these items describe negative feelings that arise when engaging in communicative interactions, such as feelings of embarrassment, uncertainty, nervousness and confusion, or even physical reactions such as trembling or feeling one's heart pounding. The current results indicate these negative feelings and reactions are triggered by one's fear of speaking in front of others, rather than by fear of being negatively evaluated by them. The other two items that supposedly indicate evaluation anxiety (Items 7 and 23, according to Aida, 1994: 162) are grouped under the second component and seem to be more indicative of negative self-evaluation in comparison to the other learners in an online ESP class. Speech anxiety is probably the most common concern of anxious language learners, inherently connected with the construct of communication apprehension (McCroskey, 1977, 1984) and well recognized in L2 literature (e.g. Honeycutt et al., 2009; Tsiplakides & Keramida, 2009; Shimotsu & Mottet, 2009; McCroskey, 2008; Bourhis et al., 2006).

The second aspect of FLA groups together questionnaire items that illustrate *evaluation and comprehension anxiety*. Anxious language learners often believe their language skills are inferior to those of the other students in the classroom (Items 7, 23), and thus show a tendency towards negative self-evaluation (Young, 1991). Accordingly, they may also fear being negatively evaluated by others, be it by the teacher or by their colleagues (Horwitz et al., 1986). Moreover, even in non-evaluative situations, anxious language learners may falsely believe they are constantly being evaluated, and thus

try to avoid any interaction in an attempt to alleviate their anxiety. Similarly, Kitano (2001) also confirmed a strong relationship between language anxiety levels and fear of negative evaluation. At the same time, this aspect of FLA among online ESP learners seems to be marked by one's worry of not being able to keep up with the class contents due to a lack of comprehension. It is important to emphasize that comprehension in this context refers not only to understanding all language input from the teacher (Items 4, 29) as explained by Horwitz et al. (1986), but even more so to one's fear of learning burdens demanded by the language course (Items 21, 25, 30). In other words, anxious learners may feel overwhelmed by the course contents or by the speed at which the class progresses, which can cause a sense of constantly falling behind (Tobias 1986, as cited in MacIntyre & Gardner, 1991b: 296). Such debilitating fear of failure can sometimes lead more anxious students to set unrealistic goals and believe that anything less than perfect performance in the language class represents a failure. Needless to say, such inclination towards perfectionism is certainly undesirable in a foreign language class, hindering the language learning process and supporting feelings of language anxiety and inadequacy in language learners (*cf.* Shimotsu & Mottet, 2009; Gregersen & Horwitz, 2002).

The third aspect of FLA extracted through factor analysis is labelled *online ESP classroom environment*, with the corresponding questionnaire items addressing the general atmosphere that is created in an online ESP classroom. Such atmosphere among more anxious language learners seems to be largely marked by fear of making mistakes in front of others and anxiety over online testing during regular classes, which excludes grading. It should be emphasized that both ESP courses attended by the study participants included regular online testing of grammar and vocabulary, where students were required to take online tests and quizzes for contents revision and practice. The online tests were held during regular classes and, though they were not graded, the strategy most certainly contributed to the general atmosphere created in the online environment. The results indicate that, even when testing excludes grading, the student might feel under pressure not to make a mistake, or else feels unsuccessful. Since the students were demanded to discuss individual tasks with their colleagues, this might have contributed to raising discomfort of presenting to others, as well as fear of making mistakes in the target language. Students who are less confident about their language skills are often afraid of making errors and embarrassing themselves in front of their peers (Pichette, 2009; Horwitz et al., 1986). Anxious learners may thus feel pressured to always be well prepared for a language class in order to avoid error correction. Such error-centered mindset can have an aggravating impact considering the amount of trial and error required to reach foreign language fluency. The current results stress the importance of positive feedback and indicate the necessity to create a friendly

and supportive atmosphere in an online language classroom. L2 researchers have already emphasized the key role of teachers in creating a positive class environment (e.g. Young, 1999; Aida, 1994).

The fourth component, termed *anxiety of talking to native speakers*, refers to an aspect of FLA where communicative interactions with native speakers are viewed as substantially different from interactions in an online language classroom. As Russell explains, FLA primarily concerns classroom-based language learning, as opposed to learning through immersion while travelling or living abroad (Russell, 2020: 340-41). Students who experience increased levels of FLA in an online language classroom need not necessarily experience tension and unease when talking to a native speaker of English; however, the opposite might also be true. The current results indicate that the study participants view communicative interactions in the language classroom as essentially different from interactions in more naturalistic settings such as conversing with native speakers. However, which of the two environments causes more stress among anxious L2 learners remains unclear. Interestingly, previous research has suggested that learners who feel comfortable with native speakers of the target language show more resilience to foreign language anxiety; or more specifically, "[…] individuals who do not see the language as truly foreign and feel comfortable with the native speakers of the language have a lower filter of anxiety" (Aida, 1994: 159).

The fifth component extracted through factor analysis is labelled *lack of motivation for online class attendance*. This aspect of FLA is represented by two questionnaire items addressing one's unwillingness to attend online ESP classes and the inability to focus on the class contents. The results are consistent with previous research, which has established that lack of learner motivation is common among online language learners and often a more important factor than the distance classroom context itself or the use of instructional technologies (e.g. Russell, 2020; White, 2003). In addition, Ushida (2005) affirmed the critical role of the language teacher in affecting students' motivation by creating a unique class culture in an online language course. Djafri & Wimbarti (2018) established that the teacher's behaviors significantly affect their learners' levels of FLA, suggesting that more attention should be given to teaching methods and behaviors employed inside a language classroom. However, the authors also found that the learner's motivation does not affect the perceived levels of FLA among learners of different foreign languages (Djafri & Wimbarti, 2018). Although motivation has been extensively investigated in relation to language anxiety (for an overview of L2 motivation research, see Dörnyei, 2005), its role in online language learning might need special attention.

The five factors of FLA, as described above, contribute to the overall level of language anxiety students experience in an online ESP classroom envi-

ronment. In addition, it is important to notice that questionnaire items that might be considered indicative of test anxiety and fear of failing the language class (e.g. Items 2, 8, 10, 12, 19, 21, 25, 26) are distributed among the first three components extracted through factor analysis. It therefore seems safe to suggest that in the present sample of online ESP learners, test anxiety is not a factor contributing to FLA. Similar results were obtained by Aida (1994: 163) with students of Japanese as a foreign language, whose conclusions also contradict the idea that test anxiety is an inherent aspect of language anxiety (Horwitz et al., 1986).

The next step in data analysis is conducted in order to examine the relationship between the total level of FLA and its various aspects. The value of Cronbach's alpha coefficient achieved for the full 33-item scale, r=.95 has already confirmed a high level of internal consistency. Furthermore, since factor analysis crystalized five relevant components of FLA and therefore defined five subscales within the modified version of FLCAS, internal consistency coefficients are measured for each. Table 14. represents an overview of the five subscales, with the corresponding questionnaire items and levels of internal consistency for each.

Table 14: The five subscales with internal consistency coefficients (FLCAS, modified)

Component of FLA	Questionnaire items	Cronbach's α
1. Speech anxiety	1, 3, 9, 10, 12, 13, 16, 18*, 19, 20, 24, 27, 31, 33	.942
2. Evaluation and comprehension anxiety	4, 7, 21, 23, 25, 26, 29, 30	.905
3. Online ESP classroom environment	2*, 5*, 8*, 22*, 28*	.649
4. Anxiety of talking to native speakers	11*, 14*, 32*	.699
5. Lack of motivation for online classes	6, 17	.725

* Items reversed so that the highest scores on the modified FLCAS represent the highest levels of FLA.

Source: Author's research.

As shown in Table 14., the first two subscales show high levels of internal consistency: *speech anxiety* (α=.942), and *evaluation and comprehension anxiety* (α=.905). The other three subscales show moderate levels of internal consistency: *online ESP classroom environment* (α=.649), *anxiety of talking to native speakers* (α=.699), and *lack of motivation for online class attendance* (α=.725). Moderate reliability coefficients can be viewed as a result of a fewer number

of items composing the subscales, or as a result of a broader concept covered by a particular group of questionnaire items. The five subscales were retained nevertheless, though the final results should not be considered fully reliable. Finally, Pearson's Correlation Coefficient is used to investigate if there are associations between the overall level of FLA and its five underlying components. Correlations are obtained based on the calculated mean score for the total level of FLA measured by the modified version of FLCAS and the calculated mean scores for each of the five subscales. The results show that the total level of FLA is positively correlated with all five aspects of FLA at the 0.01 level of statistical significance (2-tailed) (see Table 15).

Table 15: Pearson's correlations of FLA and its five components

	The total level of FLA (FLCAS, modified)		
	Pearson Correlation	Sig. (2-tailed)	N
The total level of FLA (FLCAS, modified)	1		171
Component 1. Speech anxiety	.954**	.000	171
Component 2. Evaluation and comprehension anxiety	.882**	.000	171
Component 3. Online ESP classroom environment	.705**	.000	171
Component 4. Anxiety of talking to native speakers	.556**	.000	171
Component 5. Lack of motivation for online classes	.326**	.000	171

**. Correlation is significant at the 0.01 level (2-tailed).

Source: Author's research.

The results show there is a strong positive correlation between the total level of FLA and *speech anxiety* (r=.954, p=.000, p<.01), and between the total level of FLA and *evaluation and comprehension anxiety* (r=.882, p=.000, p<.01). A moderate positive correlation is found between the total level of FLA and the aspect of *online ESP classroom environment* (r=.705, p=.000, p<.01), and between the total level of FLA and *anxiety of talking to native speakers* (r=.556, p=.000, p<.01). Finally, there is a weak positive correlation between the total level of FLA and *lack of motivation for online class attendance* (r=.326, p=.000, p<.01). The findings indicate a significant positive association between each of the five aspects of FLA and the overall level of language anxiety students experience in an online ESP classroom environment. Nevertheless, the results for components 3, 4 and 5 should be taken with caution (see Table 15).

4.3. *The main predictors of FLA in an online ESP classroom*

A multiple regression analysis is conducted in order to answer the third research question and find out which of the variables included in the study represent the best predictors of language anxiety in an online ESP classroom environment. In the first step, the total level of FLA measured by the modified version of FLCAS is determined as the dependent variable, while various background information (gender, study program, length of learning English, frequency of English use, self-assessed levels of proficiency) are selected as independent variables. The ANOVA test confirms that the regression model is statistically significant (F (6,164) = 21.254, p=.000) (Table 16a).

Table 16a: The results of ANOVA test for regression model (1)

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	50.302	6	8.384	21.254	.000[b]
	Residual	64.691	164	.394		
	Total	114.992	170			

a. Dependent Variable: The total level of FLA (FLCAS, modified)

b. Predictors: (Constant), gender, study program, length of learning English (in years), frequency of use, self-assessed English proficiency, self-assessed pronunciation proficiency

Source: Author's research.

The results of the initial step in regression analysis (R=.661, R^2=.417, F (6,164) = 21.254, p=.000*) show that background information such as gender, length of learning English and self-assessed levels of proficiency explain only 41.7 % of the variance in the total level of FLA measured by the modified version of FLCAS. As shown in Table 16b, as many as four background factors initially emerge as significant predictors of foreign language anxiety: *gender* (ß=.238, p=.000), *self-assessed English proficiency* (ß= -.172, p=.039), *self-assessed pronunciation proficiency* (ß= -.316, p=.000) and *frequency of English language use* (ß= -.193, p=.009). Interestingly, the results indicate that *length of learning English* has no statistically significant impact on the overall level of FLA as the outcome variable (ß= -.067, p=.287) (Table 16b).

Table 16b: Results of regression analysis with background factors as predictors of FLA

	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	4.531	.331		13.672	.000

Gender	.391	.107	.238	3.642	.000*
Study program	-.123	.111	-.074	-1.103	.271
Length of learning (in years)	-.071	.067	-.067	-1.068	.287
Self-assessed English proficiency	-.225	.108	-.172	-2.086	.039*
Self-assessed pronunciation proficiency	-.376	.088	-.316	-4.251	.000*
Frequency of English use	-.205	.077	-.193	-2.649	.009*

a. Dependent Variable: The total level of FLA (FLCAS, modified)

b. Model summary: R=.661; R^2=.417; F (6,164) = 21.254, p=.000* (p<.001)

Source: Author's research.

The next step in regression analysis aims to investigate the five aspects of FLA extracted through factor analysis as potential predictors of the overall levels of language anxiety among online ESP learners. Therefore, the five components of FLA are included in the model as additional independent variables. The ANOVA test again confirms that the overall regression model is statistically significant (F (11,159) = 10809.561, p=.000*) (Table 17a).

Table 17a: The results of ANOVA test for regression model (2)

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	114.839	11	10.440	10809.561	.000[b]
	Residual	.154	159	.001		
	Total	114.992	170			

a. Dependent Variable: The total level of FLA (FLCAS, modified)

b. Predictors: (Constant), gender, study program, length of learning (in years), frequency of use, self-assessed English proficiency, self-assessed pronunciation proficiency, (C1) speech anxiety, (C2) evaluation and comprehension anxiety, (C3) online ESP classroom environment, (C4) anxiety of talking to natives, (C5) lack of motivation for online class attendance

Source: Author's research.

With the five components of FLA included in the second step of regression analysis, the results (R=.999, R^2=.999, F (11,159) = 10809.561, p=.000*) demonstrate that all variables together explain up to 99.9% of the variance in the total level of FLA measured by the modified version of FLCAS. As shown in Table 17b, with all independent variables included in the analysis, the five aspects of FLA emerge as significant predictors of the total level of language anxiety: *speech anxiety* (ß=.553, p=.000), *evaluation and comprehension anxiety* (ß=.326, p=.000), *online ESP classroom environment* (ß=.145, p=.000), *anxiety of talking to native speakers* (ß=.111, p=.000), and *lack of motivation for*

online class attendance (ß=.090, p=.000). In addition, the background factors of *gender* (ß= -.008, p=.026) and *self-assessed pronunciation proficiency* (ß=.008, p=.035) are also proved to be reliable predictors of the overall level of FLA among online ESP learners. At the same time, the other independent variables included in the model are proved to be unreliable in predicting the total level of FLA students experience in an online ESP classroom environment (Table 17b).

Table 17b: Results of regression analysis with background factors and aspects of FLA as predictors of FLA

	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	-.038	.027		-1.417	.158
Gender	-.013	.006	-.008	-2.246	.026*
Faculty	.002	.006	.001	.263	.793
Length of learning (in years)	.002	.003	.002	.728	.468
Self-assessed English proficiency	.000	.006	.000	.078	.938
Self-assessed pronunciation proficiency	.010	.005	.008	2.127	.035*
Frequency of English language use	.005	.004	.005	1.205	.230
(C1) Speech anxiety	.441	.004	.553	106.266	.000*
(C2) Evaluation anxiety	.256	.004	.326	62.920	.000*
(C3) Online ESP classroom environment	.145	.004	.145	37.077	.000*
(C4) Anxiety of talking to NSs	.097	.003	.111	29.321	.000*
(C5) Lack of motivation	.066	.002	.090	28.522	.000*

a. Dependent Variable: The total level of FLA (FLCAS, modified)

b. Model summary: R=.999; R^2=.999; F (11,159)=10809.561, p=.000* (p<.001)

Source: Author's research.

As shown in Table 17b, the results of regression analysis reveal that the five components of FLA obtained through factor analysis represent statistically significant predictors of the total level of language anxiety at the .001 level of statistical significance. In addition, the variables of *gender* and *self-*

assessed pronunciation proficiency are also proved to be reliable in predicting the total level of FLA among online ESP learners, both at the .05 level of statistical significance. The other independent variables included in the model are proved to be unreliable in this regard (Table 17b).

The results of the final step in data analysis offer a valuable insight in understanding what triggers learner anxiety in an online ESP class context. The five components of FLA determined through factor analysis are confirmed as reliable predictors of language anxiety, which is not entirely surprising since each of the five aspects showed significant positive correlation with the overall level of FLA. In light of the current results, far more interesting are the independent background factors that emerge as significant predictors of language anxiety in an online ESP classroom. Gender has already been established as a significant factor that influences self-perceived levels of language anxiety (Gerencheal, 2016; Park & French, 2013; Kitano, 2001), though there are conflicting arguments as well (e.g. Aida, 1994; Kimura, 2008). Based on the current results, it seems safe to confirm that gender differences do, in fact, significantly influence levels of language anxiety students experience in an online language classroom. However, the author does not wish to imply that such variations can be explained within the confines of the current study. As Dörnyei has already suggested, the variable of gender is problematic since it affects every aspect of second language acquisition, including individual differences among language learners (Dörnyei, 2005: 8). The variations in self-perceived levels of FLA with regard to gender might have been influenced by other factors, from personality traits to learning strategies used or familiarity with the online learning technologies, and it would be advisable to consider some of these in future explorations. On the other hand, the fact that *self-assessed pronunciation proficiency* emerges as a significant predictor of FLA calls for special attention, especially since self-assessed English proficiency has proved to be irrelevant in this regard. Though researchers have already established a strong negative association between self-perceived language proficiency and language anxiety (e.g. Sultan, 2012; Liu & Jackson, 2008; Kitano, 2001), the current findings indicate that online language learners might be far more concerned over their pronunciation skills, and less focused on achieving overall L2 proficiency. In other words, language learners might overly value "how one sounds" in the target language, rather than focusing on the contents and the overall coherence of the target language message. The author would suggest it is crucial for language educators to raise awareness among their students that pronunciation itself is not the only – or even the most – important aspect in developing the language skills needed to achieve foreign language fluency. At the same time, students who are concerned over their pronunciation might greatly benefit from targeted training in pronunciation skills, as well as from online conversational practices, both in class and in conversing with native

speakers. Such demand is in line with previous findings, which have already established the benefits of telecollaborative language practices (e.g Appel & Garcia, 2020; El-Hariri, 2017; Melchor-Couto, 2016). Interestingly, Martin et al. (2022) demonstrated that anxious language learners highly welcome video feedback in online pronunciation tasks, which is certainly something to be considered, especially in the context of online language learning. In conclusion, education on the relative importance of pronunciation in relation to the overall language skills, targeted pronunciation training and online conversational practices might help in alleviating the learner's anxiety over their pronunciation skills. Such approach might help in creating a friendly and supportive language learning environment and, in turn, help in decreasing the overall levels of FLA in an online ESP classroom.

5. Conclusions

The current study reveals some interesting insights into the key factors behind foreign language anxiety (FLA) among online ESP learners, and establishes the modified version of the FLCAS (Horwitz et al. 1986) as highly reliable in measuring FLA in an online language classroom context. The main findings indicate that various background factors significantly influence the perceived levels of FLA among online language learners; while female participants and less proficient students report significantly higher levels of language anxiety in comparison to their counterparts, students who assess their proficiency above average, those who learn English the longest and those who use it on a regular basis report significantly lower levels of FLA in an online ESP classroom context. The author suggests taking additional parameters under consideration in future explorations, such as language learning strategies employed by individual learners, personality traits, prior language knowledge and/or formal assessment of language proficiency.

The study further reveals five underlying components of FLA, all of which positively correlated with overall language anxiety at the .01 level of statistical significance. The results show that factors which had an impact on students' anxiety among online ESP learners include speech anxiety, evaluation and comprehension anxiety, online ESP classroom environment, anxiety of talking to native speakers, and lack of motivation for online class attendance. In line with previous L2 research, speech anxiety and fear of negative evaluation are confirmed as the most dominant aspects of language anxiety, accompanied by fear of a lack of comprehension. The aspect that emerges as specific to online language learning is the online classroom atmosphere that is seen as essentially different from the traditional, face-to-face classroom environment. Such atmosphere is significantly marked by an array of online

technologies and learning methods that are used in class delivery, self-study and student assessment. Technology-supported distance learning is also seen in sharp contrast to communicative interactions in more naturalistic settings, especially with native speakers of the target language. In addition, maintaining motivation for online class attendance seems to be a serious concern among online ESP learners, which is far from surprising given the context of emergency remote language teaching. It is also important to emphasize that in the present sample of online ESP learners, test anxiety is not a factor that contributed to increased levels of FLA in an online ESP classroom. Such results further corroborate the idea that test anxiety does not necessarily represent an inherent aspect of language anxiety (cf. Aida, 1994). Overall, the main findings indicate that an online language classroom does not seem any more comfortable to an anxious language learner than the traditional, face-to-face classroom environment.

Finally, the five aspects of FLA, alongside the variables of gender and self-assessed pronunciation proficiency, emerge as statistically significant predictors of the overall levels of language anxiety among online ESP learners. Such results are not entirely surprising due to significant positive associations between language anxiety and its five components. The significant effect of gender on perceived levels of FLA seems to be confirmed in light of the current research. Nevertheless, considering additional parameters might be crucial in clarifying the reasons behind gender differences in relation to perceived levels of FLA. The emergence of self-assessed pronunciation proficiency as a significant predictor of FLA seems particularly interesting, especially since self-assessed language proficiency has proved to be irrelevant in this regard. Such results indicate that online language learners might be overly concerned over their pronunciation skills, and less focused on achieving overall fluency in the target language. The author suggests that providing students with an understanding of the relative importance of pronunciation in relation to the overall language skills, as well as targeted pronunciation training and positive feedback might help in alleviating their anxiety over pronunciation and, consequently, help in lessening the overall levels of FLA in an online ESP classroom.

Overall, the current findings confirm that language anxiety is indeed present among online language learners, with important pedagogical and methodological implications for online language teaching. It is essential for language instructors to invest efforts in developing low-stress learning environment and nurture an atmosphere of solidarity and support, where errors are accepted as an integral part of language learning. While FLA might be hard to eliminate altogether, certain pedagogical interventions can be used to mitigate its negative effects (e.g. Russell & Murphy-Judy, 2020; Russell, 2020; Gregersen & MacIntyre, 2014). Online language instructors should

consider using relevant topics for class discussions, support group work and collaborative practices, consider decreasing the amount of material to be covered throughout semester, take care of the learning styles and preferences of their students, and hear and appreciate their concerns and suggestions for improvement. Such approach might help in creating a friendly and supportive language learning environment and, in turn, help in decreasing the overall levels of language anxiety among online ESP learners.

The present study is certainly not without its limitations, including a rather small sample and a limited student profile of study participants. In addition, self-assessed levels of proficiency might have been over- or underestimated, and thus a type of formal assessment is a variable to be considered. The internal consistency coefficients of the subscales extracted through factor analysis might not be fully reliable due to a small number of items loading on components 3, 4 and 5. For future research, the author advocates larger samples, a greater diversity of student profiles and incorporating additional parameters, such as individual characteristics, personality traits or learning strategies employed by individual learners, as these might help in clarifying the nature and impact of FLA in online ESP teaching.

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