

L2 skill-specific anxiety and communication apprehension: the role of extramural English in the Turkish context

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ABSTRACT

Purpose: The present study has three objectives: (1) to explore whether there are statistically significant relationships between Extramural English (EE) engagement, second/additional language (L2) anxiety and communication apprehension, (2) to investigate whether EE engagement predicts these two constructs, and (3) to reveal possible predictive abilities of different EE activities.

Methodology: This research implemented a survey methodology. A closed-ended questionnaire was administered to 252 L2 learners of English who studied at a state university in Northern Türkiye. In addition to the scales that measured L2 anxiety and CA, the questionnaire comprised six items related to EE activities (i.e. playing video games, watching TV, listening-related, reading-related, writing-related, and speaking-related EE). The data were analysed using Spearman's correlation and multiple regression analyses.

Findings: Significant, negative correlations were found between EE engagement and L2 anxiety at different levels, with moderate relationships between playing video games and listening anxiety; between speaking-related EE and speaking anxiety; between speaking-related EE and CA. EE engagement significantly predicted three variables in negative ways: it explained 17% of listening anxiety, 17% of speaking anxiety, and 15% of CA. While playing video games and speaking-related EE were significant predictors of listening and speaking anxiety, speaking-related EE was the only significant predictor of CA.

Originality/value: These findings indicate that frequent EE engagement decreases negative affective states and EE is one of the predictors of decreased L2 listening- and speaking- anxiety and CA. This suggests that EE could play a significant role in L2 learning by enhancing positive affective states.

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Introduction and background

Theoretical assumptions on the teaching and learning of second/additional languages (L2) approach the essentials of L2 learning from different perspectives. The constructivist perspective, for example, underlines the significance of individual characteristics such as self-autonomy, self-esteem, and critical thinking (Benson 2011). Informed by the philosophy of learner-centeredness, constructivism

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places learners at the centre of learning with the idea that learners are responsible for their own learning and actively construct meaning based on their existing knowledge and unique experiences (Naylor and Keogh 1999; Schunk 2012). In the light of these arguments, and from an L2 perspective, it has been acknowledged that language learning is not a teacher-driven activity, and hence, no longer limited to the borders of classrooms, which led to increased attention to the concept of out-of-school learning which 'is typically initiated by the learner, makes use of authentic resources, and involves pleasure and interest, as well as language learning' (Benson 2011, 139).

Several theoretical perspectives have been proposed to undergird the term out-of-school learning such as Extramural English (EE) (Sundqvist 2009), informal language learning with digital spaces (Sauro and Zourou 2019), and informal digital learning of English (IDLE) (Lee and Dressman 2018). EE is an umbrella term addressing intentional and unintentional L2 learning initiated by the learner beyond the classroom walls and covers all sorts of activities such as listening to music, watching videos, and playing games in English. Sundqvist (2019) has later coined the term extramural L_n to relate EE to the learning of L2 other than English. Reinders, Lai, and Sundqvist (2022) have recently added a teaching component to this concept and proposed a broader term: language learning and teaching beyond the classroom (LLTBC). Considering the recent theoretical developments in L2 research, EE has become an emerging and evolving research field with increased attention given to L2 input in everyday life through all sorts of media, news, and technology (Schwarz 2020).

Previous research studies have supported the assumption that EE plays an important role in language learning. The findings revealed relationships between EE and L2 development, including vocabulary knowledge (e.g. De Wilde and Eyckmans 2017; Hannibal Jensen 2019; Peters et al. 2019; Sundqvist 2009, 2019), speaking competence (Olsson 2012; Sundqvist and Wikström 2015) and listening and reading comprehension skills (De Wilde, Brysbaert, and Eyckmans 2020; Pfenninger and Singleton 2017; Sylvén and Sundqvist 2012). In addition to L2 competence, previous research revealed that EE correlates with important affective variables such as confidence (Hannibal Jensen 2019; Lai, Zhu, and Gong 2015) and willingness to communicate (WTC) (Lee and Dražati 2020; Reinders and Wattana 2015).

Despite the ample empirical evidence on the relationships between EE and several important constructs that are relevant to L2 learning, little is known about the causality of this relationship. In other words, it is not known whether EE predicts affective factors that are likely to influence L2 process. This study aims to fulfil this gap by exploring whether there is a significant relationship between EE engagement, L2 skill-specific anxiety and communication apprehension (CA) and whether EE is one of the predictive factors for the two constructs. It, therefore, aims to provide empirical evidence on the extent to which L2 anxiety and CA are predicted by the reported levels of EE engagement. This study addresses the following research questions:

1. Are there significant relationships among engagement in six EE activities, L2 skill-specific anxiety and CA?
2. How well does the engagement in EE activities predict perceived L2 skill-specific anxiety and CA?
 - 2a. How well do six EE activities predict L2 skill-specific anxiety and CA?

Literature review

The role of EE in L2 learning and teaching

As evidenced in the findings of previous research studies, EE offers considerable potential benefits to the efficiency of L2 learning and teaching. These benefits are mostly because of the limitations of L2 classroom teaching in terms of time, material, and student engagement (Leona et al. 2021), which are coupled with several other instructional problems such as large classes, form-focussed language learning and exam-driven curricula (Richards 2015). As a result, as argued by Reinders, Lai, and

Sundqvist (2022), in-class learning fails to provide the vast amount of time and the diversified experiences that are essential for L2 development. EE, however, offers independent, self-directed, and unintentional L2 experience (Benson 2011; Sundqvist 2009), and hence, is more likely to provide naturalistic, personal, authentic, and meaningful learning contexts (Lyriqkou 2019; Richards 2015). Thus, EE could contribute to overall language attainment and learning outcomes (Lai, Zhu, and Gong 2015). Considering the potential benefits of EE and possible drawbacks of in-class instruction, it is necessary to shift the conceptualisation of language learning contexts from classrooms to out-of-class environments including contexts with technological resources and multimodalities (Sundqvist and Wikström 2015).

Fifteen years of research on EE made important contributions to our understanding of L2 learning. Several research studies focussed on the relationship between EE and vocabulary development. For example, Leona et al. (2021) carried out a quantitative study with Dutch fourth graders and found that media-mediated EE exposure and familial EE played a role in the oral and written vocabulary development of young EFL learners. In a study carried out in the same context, De Wilde, Brysbaert, and Eyckmans (2021) yielded some important results, in that even though Flemish children did not have any formal training in English, their English receptive vocabulary scores were significantly higher than their receptive French vocabulary. They attributed this finding to the fact that children carried out EE activities (e.g. listening to music, using social media, and gaming in English) frequently. An experimental study conducted by Puimège and Peters (2019) to investigate whether TV viewing enhanced incidental vocabulary learning by focussing on formulaic sequences revealed a positive impact at the levels of recall and meaning recall. In a study focussing on the knowledge of certain collocations among Spanish learners of English, Fernández and Schmitt (2015) found positive correlations between EE engagement and collocation test results. Peters (2018) also revealed that, in comparison to the length of L2 instruction, EE exposure explained the larger amount of vocabulary knowledge of Dutch-speaking teenagers.

In addition to vocabulary knowledge, previous studies focussed on general L2 achievement and proficiency in different language skills. Larsson (2012), for example, examined the test scores of Swedish students in a National Test of English and found that students who were engaged in EE obtained higher grades. Sylvén and Sundqvist (2012) revealed a positive significant relationship between playing digital games and reading and listening comprehension skills of Swedish young adolescents. As for writing competence, Olsson (2012) found that the frequency of doing three EE activities (i.e. reading, writing, watching TV) correlated with the writing proficiency of 9th graders in Sweden. Also, participants with more EE engagement produced longer sentences in their tasks. Sundqvist and Wikström (2015) investigated the effect of online gaming on L2 competence in the Swedish context and found that the highest-rated essays were written by frequent gamers who used advanced vocabulary in their essays. There were significant correlations between gameplay, vocabulary knowledge, and English grades in favour of boys.

Furthermore, previous research studies reported positive findings regarding the connection between EE and several affective variables such as confidence (Lai, Zhu, and Gong 2015), WTC (Lee 2019; Lee and Dražati 2020; Lee and Dressman 2018), and enjoyment in English (Lai, Zhu, and Gong 2015). Specifically, in a mixed-methods study with 82 middle school Chinese EFL learners, Lai, Zhu, and Gong (2015) reported connections among various meaning-focussed EE, enjoyment, confidence, and English grades. The study concluded that the nature of EE activities (both being meaning-focussed and involving diverse use of technological resources) significantly predicts the positive outcomes mentioned above. In a similar vein, Lee's (2019) study showed that the diversity of IDLE experience significantly predicts WTC online, productive vocabulary, and speaking skills. Lee and Dressman (2018) found that the diversity of IDLE experiences correlated with WTC online. In a qualitative study that collected data from Thai university students in relation to their fifteen-week game-based L2 learning, Reinders and Wattana (2015) found that gameplay has a potential to lower negative affective states and increase WTC.

The studies mentioned above provided important empirical evidence on the potential connection between EE, L2 achievement and several affective variables that are likely to influence L2 learning. Although these findings demonstrate the critical role that EE play in L2 learning, they fail to show the possible predictive ability of EE. This gap calls for a need to explore whether there is a causal relationship between EE and L2 achievement and/or affective variables. Since it was not possible to test L2 achievement in the context of the present research, this study focussed on affective variables by investigating the relationship between EE, L2 skill-specific anxiety and CA and the predictive ability of EE for two affective variables that will be discussed below.

The role of L2 anxiety and CA in L2 learning and teaching

The effectiveness of L2 learning depends on an individual's cognitive, social, and affective engagement in L2 environments. L2 engagement is influenced by individual differences (IDs), in that an individual's beliefs, attitudes, and affective states determine the extent of engagement. For that reason, understanding the concept of IDs has become one of the main preoccupations of many theorists and researchers. Among IDs, L2 anxiety has been the most emerging construct that was addressed in the extant theoretical arguments and previous research studies (Teimouri, Goetze, and Plonsky 2019; Zhang 2019).

L2 anxiety is complex in nature as it is influenced by various dynamics. According to Horwitz, Horwitz, and Cope (1986), there are three types of L2 anxiety: CA, test anxiety, and fear of negative evaluation. While L2 anxiety refers to 'self-perceptions, beliefs, feelings and behaviours related to classroom language learning arising from the uniqueness of the language learning process' (Horwitz, Horwitz, and Cope 1986, 128), CA is 'an individual's level of fear or anxiety associated with either real or anticipated communication with another person or persons' (McCroskey 1977, 78). As emphasised in these definitions, CA addresses an individual's feelings about being involved in conversations in situations where the target language is used. It is a feeling of unwillingness to communicate because of fear and anxiety (Cristobal and Lasaten 2018). Individuals with higher levels of apprehension are more reluctant to talk, seek for withdrawal, and less frequently engage in communication (Mak and White 1997). This is likely to shape their interaction behaviours, seating preferences, and occupation choices; and make negative impacts on their private, social, and academic life (McCroskey 1977). The common characteristics of learners with CA involve avoiding participation and withdrawing from communication because of perceived deficiency in communication skills (Cristobal and Lasaten 2018).

There are several factors that may increase or decrease CA. McCroskey, Fayer, and Richmond (1985) claim that CA in L1 also affects CA in L2, thus, individual characteristics with regard to CA is likely to determine CA in L2. Also, self-confidence and self-esteem are found to be the predictors of CA, in that low-level of confidence escalates CA. In a study with Chinese students, Mak and White (1997) found that the language distance between L1 and L2 may be the predictor of CA, attributing Chinese participants' high level of CA to the language distance between L1 and L2. According to Cristobal and Lasaten (2018), individuals may experience apprehension at different levels: high, medium, or low levels of CA. These levels are likely to determine the engagement in L2 communication.

On the other hand, L2 anxiety has been conceptualised differently throughout the history. In their comprehensive meta-analysis of L2 anxiety and achievement, Teimouri, Goetze, and Plonsky (2019) identified three different orientations to the concept of L2 anxiety: (1) defining L2 anxiety in general terms, (2) distinguishing situation-specific anxiety, and (3) focussing on the language skill-specific anxiety. In the first orientation, anxiety was seen either as a state or a trait anxiety (Spielberger, Gorsuch, and Lushene 1970). Accordingly, state anxiety is situation-specific in nature, and therefore, may fluctuate over time in various situations. Trait anxiety, on the other hand, is independent of situations and a stable personality trait (Papi 2010). In the second orientation, L2 researchers drew attention to the situation-specific nature of L2 anxiety. Horwitz, Horwitz, and Cope (1986) made a

distinction between foreign language anxiety and general anxiety, defining the former as a type of situation-specific anxiety related to classroom learning that is unique to the foreign language learning process. The emphasis placed on the situation-specific anxiety led to the third orientation where researchers adopted a narrower perspective to L2 anxiety by focussing on specific language skills, which gave rise to the concept of L2 skill-specific anxiety which is underpinned by the assumption that learners may encounter situations which increase or decrease anxiety when they use different L2 skills. In the light of this assumption, research on L2 anxiety focussed on particular language skills such as reading (Saito, Garza, and Horwitz 1999), listening (e.g. Elkhafaifi 2005), speaking (e.g. Woodrow 2006) and writing (Cheng 2004); and several scales were developed to measure L2 anxiety with reference to a particular language skill such as Reading Anxiety Scale (FLRAS) (Saito, Garza, and Horwitz 1999), the Foreign Language Listening Anxiety Scale (Elkhafaifi 2005) and L2 language-skill-specific anxiety scale (Cheng 2017).

The skill-specific nature of L2 anxiety was confirmed by the findings of previous studies. For example, Mills, Pajares, and Herron (2006) investigated the relationships between self-efficacy, anxiety, and French proficiency at a university in the south-eastern United States. The findings showed that L2 reading and listening anxiety played distinct roles in French proficiency, in that while reading anxiety was not connected with reading proficiency, listening anxiety was significantly correlated with listening proficiency. In a study that investigated the moderating effect of foreign language anxiety, Zhou, Xi, and Lochtman (2020) found that foreign language anxiety moderated the relationship between writing competence and WTC but did not moderate the relationship between listening and speaking competence and WTC. These findings showed that the impact of anxiety may vary according to the L2 skill in focus.

Systematic reviews and meta-analyses on L2 anxiety showed the role of L2 anxiety in L2 learning by scrutinising and synthesising previous research studies. Teimouri, Goetze, and Plonsky (2019) meta-analysed 97 papers that reported 105 samples from 23 countries. Although they voiced concerns about validity and reliability issues related to the language proficiency tests employed, their analyses yielded a significant negative correlation ($r = -.36$) between L2 anxiety and language achievement. This result is in line with Zhang's (2019) meta-analysis which focussed on the research studies that were conducted in the foreign language (FL) context. The analysis, which is a collection of 52 independent samples with more than 10,000 participants, revealed an overall significant correlation between FL anxiety and FL performance ($r = -.34$). Similarly, in their meta-analyses of the relationship between FL classroom anxiety and general academic achievement and FL-related academic achievement (i.e. reading, writing, listening and speaking), Botes, Dewaele, and Greiff (2020) reviewed 67 studies that included 14,128 participants in total. They revealed negative significant correlations between FL classroom anxiety and all categories of academic achievement. The r values ranged from -25 to -52 .

In addition to the relation between L2 anxiety and L2 achievement, previous studies revealed that anxiety impacts other affective constructs. For example, in an Iranian university context, Papi (2010) investigated the theory of L2 motivational self-system (Dörnyei 2005, 2009) and found a negative correlation between L2 anxiety and ideal L2 self (i.e. an individual's aspirations, hopes and wishes as an L2 learner), which indicated that L2 anxiety is closely linked to an individual's motivational regulation. Furthermore, Hashimoto (2002) revealed a negative correlation between L2 anxiety and perceived L2 competence in a Japanese university context. In a large-scale study conducted in the Iranian secondary school context, Khajavy, MacIntyre, and Barabadi (2018) investigated the relations between emotions, classroom environment and WTC and found that L2 anxiety hinders WTC. These findings suggest that anxiety may hinder L2 engagement because anxious L2 learners tend to avoid using the language (Mercer, Ryan, and Williams 2012), and hence, receive little L2 input (Kumaravadivelu 2006), avoid producing L2 output (Uztosun 2021), and do not take part in L2 interaction. These in turn delay L2 development. For that reason, L2 anxiety plays a critical role in L2 learning and teaching.

EE, L2 anxiety and CA in the Turkish context

There are several studies that investigated L2 anxiety in the Turkish context. When L2 anxiety levels reported by Turkish learners of English are examined, it is clear that L2 anxiety is one of the problems that learners experience. For example, a longitudinal study carried out by Elaldi (2016) compared L2 anxiety levels of learners at the beginning and at the end of their university education at English language teaching (ELT) and English literature departments. The findings revealed slightly higher levels of anxiety, with an increased mean score of the Foreign Language Classroom Anxiety Scale (Horwitz, Horwitz, and Cope 1986) from 3.10–3.14. Similarly, Aydın's (2008) study revealed that Turkish L2 learners of English at an ELT department suffer from anxiety especially when they are not well prepared for the lesson. Participants also reported to have high levels of CA when they communicate with teachers and native speakers. In a large-scale study that investigated the instructional problems that English language teachers ($N = 2476$) encounter while teaching English, Uztosun (2017) reported 'negative affective states' as the sources of major instructional problems. These affective states included such feelings as 'feeling shy when speaking in English' and 'being afraid of making mistakes'. These findings suggest that L2 anxiety is a problem in the Turkish context. This study was designed to further our knowledge of this problem by providing empirical evidence on the possible relationship between L2 anxiety, CA and EE engagement.

Research context

Türkiye is a monolingual, dubbing country where English is not spoken outside the class and on television. Hence, Turkish learners' exposure to oral and written L2 input is limited to their formal education. This increases the importance of EE as a means to find opportunities to engage in English activities in everyday situations. However, the global tendency to investigate EE has not inspired researchers in Türkiye as, to the best of our knowledge, there are only two published research articles on EE in the Turkish context.

The first study was carried out by Coşkun and Mutlu (2017) at a high school setting where students ($N = 292$) were between 15 and 17 years old. They developed a 34-item scale entitled 'the EE use scale' and investigated learners' frequency of EE engagement. The findings showed that learners did not engage in EE frequently: they reported to rarely do writing, reading, and speaking-related activities and sometimes do listening-related EE activities. The second study was carried out at a university (İpek and Mutlu 2022). The researchers administered the EE use scale to 242 preparatory students and conducted interviews with twelve students to investigate the relationship between EE frequency and different variables such as gender and academic achievement. The results showed that students do listening-related EE activities most ($\bar{x} = 3.35$), followed by reading-related EE ($\bar{x} = 2.93$), writing-related EE ($\bar{x} = 2.26$) and speaking-related EE ($\bar{x} = 2.24$). These findings indicate that Turkish learners do not engage in EE activities frequently. The paucity of research on EE in the Turkish context calls for more studies especially with further statistical analyses. This study is the first of its type that investigates the relationship between EE and important affective variables and explores the predictive ability of EE in the Turkish context.

Research methodology

This cross-sectional study employed a survey methodology to collect quantitative data from a large group of participants (Creswell and Creswell 2018). The study was conducted at an ELT department at a university located in a Northern city in Türkiye. ELT Departments in Türkiye offer 4-year pre-service teacher education programmes and bachelor's degrees are awarded to graduates who are entitled as teachers of English.

The data were collected after obtaining ethical permission from the faculty. Participation was on a voluntarily basis. Participants signed an informed consent letter that provided information about the research aim and ethical issues.

Participants

The participants were sampled using the convenience sampling method. 252 students participated in the study. 166 participants were female, and 77 were male (9 preferred not to say). The age range was 18–44, the mean and median of age were 21, and the mode was 20. They were distributed homogeneously in terms of year of study: 69 participants were first-year (27.4%) and second-year students (27.4%), 51 participants were third-year (20.2%) and 63 participants were fourth-year students (25%) at the time of data collection.

Measures

The data were collected face-to-face through a questionnaire that comprised 69 items in four parts: (a) demographic information (i.e. age, gender, and year of study), (b) the frequency of EE activities, (c) skill-based L2 anxiety, and (d) CA. The instruction for EE activities was adapted from Sundqvist and Uztosun (2023) and Sylvén and Sundqvist (2012). In these items, participants were asked to think about a regular school week and write how many hours they spent on each activity (see Appendix 1). If, for example, they watched TV series three days a week for around two hours, they were expected to write six hours. This allowed for collecting continuous data. EE activities involved six activities and the relevant item is written in parentheses: playing video games (I play video games that require using English), watching TV (I watch TV series, films, podcasts or videos in English), listening-related EE (I listen to English materials – songs, podcasts, radio, audiobooks, etc. – in English), reading-related EE (I read in English – books, short stories, articles, web-sites, etc.), writing-related EE (I write in English – e-mails, posts, blogs, stories, poems, diaries, etc.) and speaking-related EE (I speak in English – online or face to face – with people I know/I do not know). These items were selected because they were common EE activities in different contexts (e.g. De Wilde, Brysbaert, and Eyckmans 2021; Lai, Zhu, and Gong 2015) and required using different English language skills.

L2 anxiety was measured through the L2 language-skill-specific anxiety scale developed by Cheng (2017) in Taiwan. The scale was informed by recent theoretical arguments that underline the assumption that L2 anxiety is a complex, multi-dimensional and skill-specific trait (Horwitz, Horwitz, and Cope 1986). For that reason, the theoretical underpinning of the scale conforms the objective of the present study. The scale is a 5-point agreement scale with 5 being strongly agree and 1 being strongly disagree and comprises four sections that focus on a different language skill (i.e. listening, reading, speaking and writing). Each section has nine items that are worded similarly. For example, in the listening section, the item ‘I often worry that I will miss information’ is preceded by the phrase ‘when listening to English’. As for internal reliability, Cheng (2017) reported high Cronbach’s alpha values for each section, with $\alpha = .89$ for listening, $\alpha = .87$ for reading, $\alpha = .93$ for writing, and $\alpha = .88$ for speaking anxiety. The internal reliability analyses of each section in the present study yielded high reliability scores as well: listening ($\alpha = .92$), reading ($\alpha = .87$), speaking ($\alpha = .93$) and writing ($\alpha = .88$) anxiety. McDonald’s omega coefficient was .85 for listening, .83 for reading, .93 for speaking, and .86 for writing anxiety.

CA was measured by the Personal Report of Communication Apprehension (PRCA-24) tool that was developed by McCroskey (1982). This instrument has been commonly used in international settings. The instrument comprises 24 items on a 5-point agreement scale with 5 being strongly agree and 1 being strongly disagree. The scale included such items as ‘I am tense and nervous while participating in group discussions’. The instrument yields 4 sub-scores: group discussion, meetings, interpersonal conversations, and public speaking. The scoring formula of the instrument leads to

a CA score out of 120. McCroskey (1982) reported high internal reliability of the scale ($\alpha = .90$). The scale also yielded high internal reliability in the present with Cronbach's alpha value .88 and McDonald's omega coefficient value .96.

Data analysis

The data were analysed using IBM SPSS Statistics (version 25). Since this research was designed to reveal the possible predictive abilities of EE activities on different dependent variables, multiple regression analyses were carried out (Pallant 2010). Several assumptions of multiple regression analyses were checked. To conduct multiple regression analysis with six predictive variables, it is recommended to have a sample size more than 98 (Tabachnick and Fidell 2013). The data should have no outliers and be normally distributed (Plonsky and Ghanbar 2018) and the predictor variables should not be multicollinear (Pallant 2010). Considering these assumptions, the sample size was appropriate. To handle missing data, listwise deletion was used on 14 participants with missing data and six outliers in dependent variables were disregarded from the analysis. The correlations between all independent variables were below .06 which indicated no multicollinearity (see Appendix 2). To check the normality of the dependent variables, skewness and kurtosis values of the scales were examined. As suggested by Kim (2013), z-score skewness and kurtosis values were calculated by dividing these scores by their standard errors. While the scores of reading anxiety and writing anxiety were higher than the cut-off value of 3.29; the scores of speaking anxiety, listening anxiety, and CA were lower than 3.29. This showed that three dependent variables (i.e. speaking anxiety, listening anxiety, and CA) were normally distributed. These scores made it possible to conduct multiple regression analyses only on these three dependent variables. Hence, reading and writing anxiety were disregarded from the multiple regression analysis. Since the data were not normally distributed, the relationships between the variables were tested using Spearman's correlation coefficient.

Results

RQ1. The relationships between EE, L2 skill-specific anxiety and CA

To check whether there are statistically significant relationships between the three constructs, Spearman's correlation analysis was performed. The results are displayed in Table 1.

As can be seen in Table 1, six EE activities that are addressed in the present study negatively correlated with anxiety in four language skills. When the significant correlations of different EE activities

Table 1. Correlations between EE activities, L2 anxiety and CA (N = 246).

	VG	TV	LE	RE	WE	SE	LA	RA	SA	WA	CA
VG	1										
TV	.287**	1									
LE	.170**	.555**	1								
RE	.182**	.416**	.448**	1							
WE	.170**	.305**	.385**	.570**	1						
SE	.163*	.220**	.261**	.308**	.459**	1					
LA	-.337**	-.258**	-.286**	-.167**	-.091	-.256**	1				
RA	-.284**	-.144*	-.161*	-.137*	-.042	-.181**	.710**	1			
SA	-.210**	-.190**	-.192**	-.238**	-.292**	-.487**	.556**	.437**	1		
WA	-.200**	-.111	-.226**	-.112	-.105	-.094	.454**	.592**	.291**	1	
CA	-.227**	-.127	-.233**	-.225**	-.278**	-.393**	.390**	.276**	.700**	.227**	1

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

*Correlation is significant at the 0.05 level (2-tailed).

Note: VG = playing video games, TV = watching TV, LE = listening to English, RE = reading in English, WE = writing in English, SE: speaking in English, LA: listening anxiety, RA: reading anxiety, SA: speaking anxiety, WA: writing anxiety, CA: communication apprehension

Table 2. EE Engagement and L2 Listening Anxiety.

Model	Unstandardized Coefficients		Standardized Coefficients		
	B	Std. Error	Beta	t	Sig.
Constant	2.327	.067		34.836	.000
Video games	-.027	.006	-.307	-4.552	.000
Watching TV	-.005	.007	-.055	-.723	.470
Listening-related EE	-.008	.005	-.125	-1.495	.136
Reading-related EE	.004	.007	.051	.599	.550
Writing-related EE	.020	.014	.113	1.375	.170
Speaking-related EE	-.020	.006	-.234	-3.182	.002

and L2 anxiety and CA are examined, it is evident that 'playing video games' and 'listening-related EE' negatively correlated with L2 anxiety in all four skills and CA. L2 speaking anxiety was the only type of anxiety that correlated with all EE activities. On the other hand, no significant relationships were found between writing anxiety and four EE activities: watching TV, reading-related EE, writing-related EE, and speaking-related EE. Writing-related EE also did not correlate with L2 listening and reading anxiety. The other variables with no significant relationship were watching TV and CA.

Cohen's (1988) guidelines were followed to determine the strengths of the relationships. Accordingly, r values between .10 and .29 indicate a small relationship, values between .30 and .49 indicate a medium relationship, and values between .50 and 1.0 indicate a strong relationship. Considering these, moderate levels of negative correlations were found between playing video games and L2 listening anxiety ($r_s = -.337, p < 0.00$), and between speaking-related EE and L2 speaking anxiety ($r_s = -.487, p < 0.00$) and CA ($r_s = -.393, p < 0.00$). The strengths of other significant relationships were small with r values ranging from $-.137$ to $-.292$.

RQ 2. EE engagement, L2 skill-specific anxiety and CA

Multiple regression analyses were performed on three dependent variables (i.e. L2 listening-anxiety, L2 speaking-anxiety and CA) using six EE activities as independent variables (i.e. playing video games, watching TV, listening to English, reading in English, writing in English, and speaking in English). As for L2 listening anxiety, the results showed that the model was statistically significant ($F_{(6, 226)} = 7.83, p < .01$), with an R^2 value of 0.17, which indicated that six variables could predict 17% of the variance. Video games and speaking-related EE were found to be a negative, significant predictor of L2 listening anxiety. This indicates that learners' engagement with video games and speaking-related EE activities determined their levels of anxiety in listening. The predictive abilities of each variable are displayed in Table 2.

The findings were similar in L2 speaking anxiety, in that the model was statistically significant ($F_{(6, 226)} = 7.11, p < .01$), with an R^2 value of 0.17 and six predictive variables explained 17% of the variance in L2 listening anxiety. Similar to L2 listening anxiety, two variables (i.e. video games and speaking-related EE) were negative, significant predictors of L2 speaking anxiety. The predictive abilities of each variable are displayed in Table 3.

Table 3. EE Engagement and L2 Speaking Anxiety.

Model	Unstandardized Coefficients		Standardized Coefficients		
	B	Std. Error	Beta	t	Sig.
Constant	3.137	.100		31.241	.000
Video games	-.021	.009	-.158	-2.354	.019
Watching TV	-.007	.011	-.051	-.674	.501
Listening-related EE	-.004	.008	-.045	-.538	.591
Reading-related EE	.008	.010	.068	.806	.421
Writing-related EE	-.006	.022	-.023	-.281	.779
Speaking-related EE	-.046	.010	-.355	-4.835	.000

Table 4. EE Engagement and Communication Apprehension.

Model	Unstandardized Coefficients		Standardized Coefficients		
	B	Std. Error	Beta	t	Sig.
Constant	77.826	2.058		37.826	.000
Video games	-.347	.180	-.132	-1.921	.056
Watching TV	.077	.219	.027	.350	.727
Listening-related EE	-.185	.163	-.096	-1.136	.257
Reading-related EE	-.012	.210	-.005	-.055	.956
Writing-related EE	.179	.444	.034	.402	.688
Speaking-related EE	-.895	.196	-.341	-4.569	.000

Regarding the predictive ability of EE engagement upon CA, the results of the regression analysis showed that the model was statistically significant ($F_{(6, 224)} = 6.72, p < .01$). The R^2 value was 0.15, which indicated that six predictive variables explained 15% of the variance in CA. Out of six variables, speaking-related EE activities was the only significant predictor of CA. The predictive abilities of each variable are displayed in Table 4.

Discussion

The present research revealed that EE is one of the variables that predicts decreased L2 anxiety and CA. This finding goes beyond the previous studies that revealed correlations between EE and positive affective states (e.g. Hannibal Jensen 2019; Lai, Zhu, and Gong 2015; Lee and Drajiati 2020; Reinders and Wattana 2015) by adding the issue of causality in the relationship between EE and variables mentioned above. This finding provides evidence to the significant role of EE in promoting positive affective states that are accepted to influence L2 learning.

When the predictive abilities of EE activities are compared, it is seen that two EE activities predicted L2 anxiety and CA significantly: video games and speaking-related EE. This suggests that, in contrast to other EE activities that are addressed in the present study, playing video games and doing EE activities that require speaking in English contribute to the prediction of L2 anxiety and CA. Furthermore, playing video games and speaking-related EE were the two variables that correlated with listening anxiety and speaking anxiety respectively at moderate levels. This shows that, compared to other EE activities addressed in the present study, playing video games and speaking-related EE have stronger relationships with L2 anxiety. This suggests that different EE activities play different roles in language learning and activities that require speaking in English are more likely to promote positive affective states. This finding is in line with previous studies that revealed the benefits of video games and speaking-related EE for L2 learning. For example, Lindgren and Muñoz (2013) investigated the impact of out-of-school factors on the reading and listening skills of learners (with four years of L2 instruction) in seven European countries. They found that playing computer games was one of the significant predictors of reading and listening skills. In a study that was conducted in the Swedish context to investigate whether gamers differ from non-gamers in terms of L2 reading, listening comprehension, and vocabulary knowledge, Sylvén and Sundqvist (2012) reported that frequent gamers scored significantly higher in a national test that addressed reading and listening skills and in a vocabulary test designed by the researchers. De Wilde, Brysbaert, and Eyckmans (2021) investigated English and French vocabulary knowledge of Dutch-speaking children (aged 10–12) who did not receive any English instruction but 100-hours French instruction. The findings showed that, reading, listening to music, using social media, and speaking in English were the significant predictors of the meaning recognition test.

The present study also showed that four EE activities did not statistically contribute to the prediction of L2 anxiety and CA. These were watching TV, listening-related EE, reading-related EE and

writing-related EE. This finding seems to contradict with the findings of some previous studies that reported the benefits of these EE activities for L2 learning. For example, in a study mentioned above, De Wilde, Brysbaert, and Eyckmans (2021) found that listening to music and reading-related EE were among the variables predicting the meaning recognition test. Additionally, considering that watching TV did not explain the variables addressed in the present study, this study showed that the benefits of watching TV may not include promoting negative affective states but may be limited to increasing vocabulary knowledge (e.g. Kuppens 2010; Puimège and Peters 2019) and listening and reading abilities (De Wilde, Brysbaert, and Eyckmans 2020). Similarly, this study found that listening-related EE did not impact L2 anxiety and CA, which suggests that listening to music may not influence affective states but may be beneficial to other issues related to L2 learning such as promoting listening and reading skills (Lindgren and Muñoz 2013). Furthermore, when the analyses of writing-related EE and L2 writing anxiety are compared, it seems that writing skill is distinct in nature because, compared to other skills, L2 writing anxiety and writing-related EE correlated with limited number of variables. This suggests that writing has some distinctive characteristics, which calls for further research on the variables that influence L2 writing anxiety and the possible impacts of writing-related EE.

The findings of the present study revealed that the relationship between EE activities and L2 anxiety and the predictive abilities of EE activities vary. While some EE activities predicted L2 anxiety and CA statistically significantly, others did not impact these variables. This assumption is also evidenced by Sundqvist (2011) who reported that some EE activities (e.g. surfing the Internet, reading books) correlated with oral proficiency level and vocabulary size stronger than other EE activities (e.g. listening to music, watching TV). Lai, Zhu, and Gong (2015) voiced concerns about the quality of learning opportunities provided by different EE activities, and hence, called for an understanding of what the quality of EE activities entails. To address this, it is necessary to investigate the benefits of EE by focussing on the impacts of specific activities.

Conclusions and implications

This study was designed to investigate whether there was a significant relationship between EE engagement, L2 skill-specific anxiety and CA. The study also investigated whether EE engagement statistically predicted these two constructs; and if so, which EE activities contribute to the prediction of these variables. The findings revealed a negative significant relationship between EE engagement and other variables. EE activities were the statistically significant predictors of all variables. As for the impacts of different EE activities, two EE activities (i.e. video games and speaking-related EE) contributed to the prediction of L2 speaking/listening anxiety; and speaking-related EE was the only significant predictor of CA. It was also found that playing video games and speaking-related EE had stronger relationships with L2 anxiety. These findings are probably because of three important characteristics of these three EE activities: they are interactive, multimodal, and involve L2 production (De Wilde, Brysbaert, and Eyckmans 2020). On the other hand, other EE activities (i.e. watching TV, listening-related EE, reading-related EE, and writing-related EE) did not predict variables related to L2 anxiety and CA. This finding suggests that different EE activities may influence L2 learning in different ways.

The findings summarised above made it possible to generate some practical implications for L2 learning. It is important that learners perceive that EE engagement is a negative predictor of negative affective states. This will motivate them to be engaged in EE activities. However, considering the crucial role that speaking-related EE plays in decreasing negative affective states, learners should be able to spend time on EE activities that are likely to contribute to their L2 development. This will enable them to take control over their learning and become autonomous L2 learners. To ensure this, parents should understand how EE may impact on L2 development because they play major roles in learners' engagement in EE activities (Lai, Zhu, and Gong 2015). Besides, teachers should also appraise the role of EE in L2 learning and develop learners'

awareness of the importance of EE. This could be possible through bridging the gap between EE and classroom L2 teaching.

Limitations and further research

The present study has several limitations. Firstly, the data were collected from one university and participants were sampled through convenient sampling. This makes it difficult to generalise the findings to other contexts. Secondly, self-reported data were collected through a particular data collection tool, which may not represent participants' actual affective states and engagement in EE activities. To further our understanding of the role of EE in L2 learning, these limitations should be addressed in future studies. More quantitative studies are needed to explore the causal relationship between EE, L2 proficiency, and affective variables that influence L2 learning. To do so, instead of using questionnaire items, scales should be developed and implemented to measure EE engagement in a reliable and valid way. More qualitative and longitudinal studies should be conducted to understand the distinct roles that different EE activities play in L2 learning. Besides, considering that most EE research is dominated by studies carried out in particular countries (e.g. Denmark, Sweden, Norway and Belgium), more research is needed in monolingual countries like Türkiye where EE seems to be the only way of being engaged in the target language outside the classroom.

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No potential conflict of interest was reported by the author(s).

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APPENDICES

Appendix 1: the part of the questionnaire on EE activities

Think about a regular school week (not holidays) and write how many hours you spent on the following activities in English per week. For example, if you watch English TV series three days a week, for around two hours, you should write 6 h. If you don't do these activities, please write 0 h.

1. I play video games that require using English. hours per week
2. I watch TV series, films, podcasts or videos in English. hours per week
3. I listen to English materials (e.g. songs, podcasts, radio, audiobooks, etc.) in English hours per week
4. I read in English (e.g. books, short stories, articles, web-sites, etc.) hours per week
5. I write in English (e.g. e-mails, posts, blogs, stories, poems, diaries, etc.) hours per week
6. I speak in English (online or face to face) with people I know / I do not know hours per week

Appendix 2: the correlation between independent variables (Spearman's rho) (N = 233)

	VG	TV	LE	RE	WE	SE
VG	1					
TV	.287**	1				
LE	.172**	.553**	1			
RE	.174**	.404**	.444**	1		
WE	.153*	.294**	.377**	.570**	1	
SE	.155*	.203**	.274**	.314**	.462**	1

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

*Correlation is significant at the 0.05 level (2-tailed).

Notes: VG= playing video games, TV= watching TV, LE= listening to English, RE= reading in English, WE= writing in English, SE: speaking in English, LA: listening anxiety, RA: reading anxiety, SA: speaking anxiety, WA: writing anxiety, CA: communication apprehension.