



Teacher Support and Chinese EFL Students' Intention to Continue Online Learning: The Mediating Role of Negative Emotions

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Abstract

This survey research examines the direct and indirect relationships between teacher support, negative L2 learner emotions (i.e., anxiety and boredom) and students' intention to continue online learning in the post-pandemic era. A total of 413 Chinese non-English majors participated in the questionnaire survey and reported their primary challenges and suggestions for future online teaching. Using SPSS 26 and PROCESS v4.2 for quantitative data analysis, the results revealed significant correlations between teacher support, negative emotions, and continuance intention in the context of online learning, with the effect sizes ranging from medium to large. Notably, both anxiety and boredom were identified as mediators between teacher support and students' continuance intention in parallel, with boredom playing a more significant mediating role. In addition, diminished motivation, absence of teacher presence, and unsatisfactory class atmosphere emerged from qualitative data analysis as three obstacles that hindered students' continuance intention. Five suggestions were accordingly proposed, including increasing teacher-student interaction, incorporating engaging teaching content, improving teacher evaluation and supervision, fostering peer mutual aid and supervision, balancing online and offline teaching, and developing cross-platform software. Pedagogical implications gleaned from these quantitative and qualitative findings brought valuable insights for the advancement of EFL online education.

INTRODUCTION

Large-scale emergency online learning in the past consecutive years has revolutionized the landscape of higher education due to the worldwide outbreak of COVID-19. As the inclusion of emerging instructional technologies such as virtual classes and AI-powered tools is acknowledged to be the new normal and future trajectory of post-pandemic modern education (Uunona & Goosen, 2023), there is a greater demand for English teachers to capitalize on the versatility of hybrid and blended teaching and empower students to engage in more active and autonomous learning. However, the current online education is still full of uncertainties and far from full fledge (Tambunan, 2023). The radical restructuring of teaching mode, accompanied with the reduced face-to-face interactions, exposes university students to an array of stress and mental weariness (e.g., Chansaengsee, 2023; Chen et al., 2022; Dewaele et al., 2022; Fawaz & Samaha, 2021; Hu et al., 2022; Y.

Li et al., 2021; Yang et al., 2022), which in turn inhibits students' loyalty as well as the effectiveness of online learning (Hu et al., 2022). To maintain the healthy online-offline balance and especially reach the full potential of the latter, it is of vital importance to address students' well-being in continued online learning adoption.

Teacher-related factors have been widely studied because of the substantial impact that teachers exert on students' psychological states (Jiang & Dewaele, 2019; C. Li, 2022) and academic outcomes (Tao et al., 2022). As a synthesis of informational, appraisal, emotional and instrumental support and assistance that teachers offer to students (Tardy, 1985), teacher support in the field of general education is believed to enhance teachers' relationship with students and strongly linked to academic emotions (Lei et al., 2018). However, relevant research in the English as a foreign language (EFL) context has been generally ignored and existing studies mainly focus on its relationship with the positive emotion, namely enjoyment (e.g., Hejazi & Sadoughi, 2022; X. Liu & Guo, 2021; Ma et al., 2021; Sadoughi & Hejazi, 2021; Zhao & Yang, 2022), leaving that with negative emotions largely underrepresented. Such a void is especially true for anxiety and boredom since only sporadic studies have identified the predictive effects of teacher support on anxiety (e.g., Jin & Dewaele, 2018; Piechurska-Kuciel, 2011) and boredom (e.g., Zhao & Yang, 2022). As teacher may exert a larger impact on alleviating negative academic emotions of East Asian students than those of Western European and American students (Lei et al., 2018), much remains to be done in teacher support research to ascertain and better understand its associates with and influence on negative emotions in foreign language classes, where varying types of support are much needed to help tackle students' mental and intellectual challenges during this highly demanding socializing process (H. Liu & Li, 2023; Sadoughi & Hejazi, 2021). Still, little is known about the relationship between teacher support and EFL learners' continuance intention in the online setting and the mechanism in between. To fill these gaps, the present study focused on two most prevailing negative emotions (i.e., anxiety and boredom) (Chen et al., 2022) and testified their mediating effects on the relation under investigation. Therefore, the study aimed to address the following research questions:

Research Question 1. What are the relationships between student-perceived teacher support, anxiety, boredom, and their continuance intention of English online learning?

Research Question 2. Do the two negative emotions co-mediate the relationship between teacher support and continuance intention?

Research Question 3. What are students' encountered obstacles and suggestions in terms of online English education?

LITERATURE REVIEW

Teacher Support

Teachers have been considered as a valuable source of care and guidance without which successful language learning may be difficult to take place. Given the substantial time students spend at school interacting with their teachers and classmates, support from teachers proves to be notably practical and impactful (Bokhorst et al., 2010). Moreover, among three major sources of social support (Tardy, 1985), teacher support uniquely contributes to students' cognitive, emotional and behavioral development and may compensate for the lack of support from families or peers (Wentzel, 2016).

Teacher support was initially defined as an emotional construct, measuring "the degree to which students feel supported, respected, and valued by their teacher" (Doll et al., 2004, p. 6). A review of previous empirical research shows that emotionally supportive teachers are especially important to students' academic emotions and achievements (De Ruiter et al., 2019; Jin & Dewaele, 2018; Malecki & Demaray, 2003; Qi et al., 2020; Wu et al., 2023; Yang et al., 2022). For example, Wu et al. (2023) investigated the influence of teacher variables on 1294 Chinese undergraduate students' L2 grit and burnout. Their findings revealed a positive correlation between teacher affective support and teacher enjoyment with L2 grit, and a negative correlation with burnout. Yang et al. (2022) further reported that teacher emotional support moderated the relationship between burnout and self-efficacy among Chinese tertiary students, eventually impacting students' effect of English online learning.

In recent research, scholars have begun to recognize the inadequacy of the one-dimensional definition (i.e., emotional support) in fully addressing the manifold facets and implications of this concept. Based on the social support model (Tardy, 1985), four dimensions, namely, informational, instrumental, appraisal, and emotional support, have been widely applied to better explore the inner structure of teacher support (H. Liu & Li, 2023; Malecki & Demaray, 2003; Sadoughi & Hejazi, 2022), and its relationship with student engagement, psychological factors and academic outcomes (e.g., Hejazi & Sadoughi,

2022; Ma et al., 2021; Sadoughi & Hejazi, 2021; Zhao & Yang, 2022). In the above research, teacher support, for instance, has been affirmed as a crucial asset in the class to directly and indirectly bolster student engagement through increasing students' enjoyment and reducing their boredom (Sadoughi & Hejazi, 2021; Zhao & Yang, 2022). In addition, Ma et al. (2021) unveiled that teacher support indirectly contributes to students' academic achievement through increasing students' academic enjoyment and academic self-concept. Nevertheless, prior research on teacher support has primarily been conducted within the realm of general education (Sadoughi & Hejazi, 2021), with comparatively little emphasis placed on its impact within the mainstream EFL context (Zhao & Yang, 2022). Considering its irreplaceable role as a scaffolding mechanism in students' language learning journeys (H. Liu & Li, 2023), EFL teacher support is definitely worthy of further investigation.

Foreign Language Classroom Anxiety

Foreign language classroom anxiety (FLCA) is the first and most widely studied emotion in the field of SLA (Dewaele et al., 2023). Horwitz et al. (1986) described it as “the subjective feeling of tension, apprehension, nervousness, and worry associated with an arousal of the autonomic nervous system” (p.125) and identified three typical types of anxiety in FL classes, namely, communication apprehension, test anxiety, and fear of negative evaluation. FL learners may encounter momentary anxiety when they struggle to express themselves and establish authentic connections with others due to their limited proficiency in the new language (Horwitz, 2017).

To date, the extant body of empirical research has consistently confirmed that FL learners' emotions are shaped by the complex interplay between learner-internal and learner-external factors (C. Li, 2022; E. Liu & Wang, 2023). Researchers have reached a consensus that anxiety is primarily evoked by learner-internal factors, including emotional intelligence, actual and self-perceived English proficiency, relative status among peers, and attitudes towards the FL (Dewaele & MacIntyre, 2019; Dewaele et al., 2023; Jiang & Dewaele, 2019; C. Li et al., 2021; E. Liu & Wang, 2023; Resnik & Dewaele, 2021). Against the background of emergency remote instruction, it is noteworthy that internet connectivity, rather than the fear of making mistakes in front of the public, has emerged as the main source of anxiety in FL classes (Dewaele et al., 2022). Despite a small, yet significant decrease in European tertiary-level EFL learners' anxiety in the online setting, Resnik and Dewaele (2021) attributed this reduction in anxiety to greater anonymity and less social interaction by hiding. In a subsequent study, Resnik et al. (2022) observed that, although students exhibited notably reduced concerns about their peers outperforming them and their own insufficient preparation before class, there was an evident increase in students' embarrassment when volunteering answers. Consequently, “disembodied classes have less emotional resonance” (Resnik & Dewaele, 2021, p.21).

In terms of the influence of teacher-related factors, existing research shows that higher levels of anxiety are closely related to stricter teaching methods and lower frequency of FL use by teachers (Dewaele et al., 2019). Additionally, perceived teacher support has been identified as a significant predictor of anxiety among 621 secondary school students in Poland (Piechurska-Kuciel, 2011) and 238 grade 7 students in the Netherlands (Ahmed et al., 2010). However, the predictive power of teacher support on student anxiety at the tertiary level remains under-explored, especially in the Chinese context. Given this research gap and the distinct sources of anxiety in online classes compared to face-to-face settings (Dewaele et al., 2022; Resnik et al., 2022), further investigation is warranted to examine whether teacher support can effectively mitigate anxiety without compromising students' sense of social connection.

Foreign Language Boredom

Foreign language boredom (FLB) is a negative academic emotion that disengages students from ongoing class activities which are typically perceived as excessively demanding, insufficiently stimulating, or lacking relevance, significance and meaning to students (C. Li et al., 2020). Nonetheless, unlike anxiety, boredom is a silent and elusive emotion that has received scant research attention, though it permeates in classes and elicits multifarious repercussions as other negative emotions in language learning (C. Li & Han, 2022). While anxiety is the most extensively studied emotion in SLA (Dewaele et al., 2023; MacIntyre et al., 2019), the research on boredom is still in its nascent stage (Chen et al., 2022; C. Li, 2022; C. Li & Wei, 2022; E. Liu & Wang, 2023).

A wide variety of task-related, teacher-related, and learner-related factors have been concurrently reported as primary inducers in the traditional L2 learning class (Wang & Zhang, 2022). In-depth investigation conducted by Kruk and Zawodniak (2018) through semi-structured interviews with 15 Polish English major students revealed that L2 boredom was associated with task-related factors (i.e., repetitiveness, difficulty, relevance, perceived usefulness, and novelty of task

design), teacher-related factors (i.e., their energy/enthusiasm in work, monotonous teaching, lack of feedback, and limited variety of teaching tools), and learner-internal factors (students' needs, interests, and learning autonomy). In C. Li's (2022) quantitative research with 868 Chinese non-English major students, attitudes towards the FL and teacher friendliness stood out as the strongest learner-internal and learner-external antecedents, respectively. Similarly, E. Liu and Wang (2023) found attitudes towards the FL and the teacher as two significant negative learner-related predictors and foreign accent as the strongest teacher-related predictor of L2 boredom among 249 Chinese high school students.

Recent research focusing on the sources of boredom in emergency online learning generally revealed higher levels of boredom in online teaching compared to traditional face-to-face instruction. Researchers found that the absence of stimulating group work and social interaction, teacher-centered and lecture-typed teaching modes, and perceived meaninglessness were the main causes of student boredom experiences in online courses (Derakhshan et al., 2021; Dewaele et al., 2022; C. Li & Dewaele, 2020; Pawlak et al., 2022; Resnik & Dewaele, 2021). As an alarming number of students have reported difficulties in appropriately coping with boredom, teachers are believed to play a pivotal role in alleviating this context-dependent variable (Pawlak et al., 2022). Considering that teacher support as one crucial teacher-related factor has been acknowledged for its dissipating effect on negative academic emotions in various disciplines (Lei et al., 2018), yet remains insufficiently explored in the EFL setting (Li, 2022), there is a pressing need for more studies to examine teacher support and its potential influence on the increased levels of boredom experienced by EFL students in the new post-pandemic online learning environment.

Continuance Intention of English Online Learning

Higher education has undergone a dramatic digital transformation in response to COVID-19 disruption. While new technologies present a plethora of formats and techniques to enrich learning, students are frequently mentally overwhelmed by a purely web-based learning environment, reporting barriers such as sense of isolation, anxiety, depression and boredom (Derakhshan et al., 2021; Fawaz & Samaha, 2021; García-Morales et al., 2021; Hu et al., 2022; Y. Li et al., 2021). According to cognitive load theory, additional mental efforts are required to manage these negative stress and emotions, leading to a reduced mental capacity for engaging in online learning activities (Sweller, 2011). As the focus of future post-pandemic education will shift towards the sustainable development and service provision of online learning (García-Morales et al., 2021), FL learners' well-being thus should be addressed as one of the paramount issues to enhance their intention to continuously use online learning (Hu et al., 2022).

Extant literature has corroborated that students' psychological factors are closely intertwined with continuous use of online learning and thus have received the most attention (X. Li et al., 2022; Yan et al., 2021). In their systematic literature review of 147 studies, Yan et al. (2021) figured out satisfaction, perceived enjoyment, trust and attitude as prominent psychological antecedents in continuance intention literature. Wut et al. (2022) further explained that a useful online learning system with satisfactory usage experiences can reduce cognitive load and improve students' intention to constantly use the system. Despite these valuable findings, exploration should be further expanded to emotional elements and their impacts on continued online learning adoption (X. Li et al., 2022). Apart from perceived enjoyment, some existing studies focused only on the negative emotion of anxiety. Scholars found that computer anxiety (Abdullah & Ward, 2016; X. Li et al., 2022) and general anxiety (Chiu & Wang, 2008; Hu et al., 2022) both significantly hindered students' continuance intention to engage in online learning. Though anxiety and boredom are consistently identified as negative influences on motivation, engagement, students' willingness to communicate, and L2 achievement (Gordon, 2022; C. Li et al., 2021; C. Li & Wei, 2022), empirical evidence on their joint and mediating effects on students' continued online learning is still fairly limited. Further, scarce attention has been paid to the influence of social factors on continuance intention (Yan et al., 2021) and further investigation, such as exploring the influence of teacher support in FL classes, is also necessary. Therefore, this present study was undertaken among Chinese university students to bridge the gap concerning the independent and combined role of these two negative emotions, as well as the influence of teacher support, in shaping students' continuance intention in the post-pandemic online teaching.

METHOD

Participants

A total of 466 university students in mainland China initially participated in the online survey. After rigorous screening, 53

cases with arbitrary answers were excluded, resulting in a final sample of 413 participants (122 males, 291 females) for formal data analysis. The sample included both undergraduates ($n = 333$, 80.7%) and graduate students ($n = 80$, 19.3%) to ensure a diverse participant pool and capture a broader array of perspectives across different academic levels. All participants were non-English majors, with ages ranging from 18 to 26. In terms of English proficiency, non-English majors in China are generally expected to pass the nationwide standardized College English Test - Band 4 (CET-4) in their second year and Band 6 (CET-6) in their third year. In the current sample, 48.4% ($n = 200$) and 22.2% ($n = 92$) had successfully passed CET-4 and CET-6, respectively, while 29.3% ($n = 121$) had not passed either test, indicating representation across different proficiency levels among Chinese EFL students.

Instruments

The current research adopted a composite questionnaire to investigate Chinese university students' perceptions and experiences of learning English online in the post-pandemic era. Participants' demographics were gathered in Section 1 through multiple-choice questions, including items related to age, gender, educational level, and other background information. Section 2 focused on four scales measuring students' perceived teacher support, two negative FL emotions (anxiety and boredom), and their continuance intention in English online learning (see Appendix for the complete list of questionnaire items). All items were translated into Chinese to ensure better understanding and were rated on a 5-point Likert scale ranging from "1 (completely disagree)" to "5 (completely agree)". Section 3 consisted of two open-ended questions designed to capture additional insights into their thoughts and suggestions regarding English online education.

Teacher support. *Students' Perceived EFL Teacher Support Scale (SPEFLTSS)* (H. Liu & Li, 2023) was adopted to assess students' perceptions of their teachers' support for them. It consisted of 12 items and three sub-dimensions: academic, instrumental, and emotional support. This scale has been validated in a sample of 1,401 Chinese high school students, showing high internal consistency (Cronbach's $\alpha = .903$) and construct validity ($\chi^2/df = 4.260$; CFI = .968; GFI = .949; AGFI = .923; SRMR = .036; RMSEA = .070) (H. Liu & Li, 2023). In the present study, the Cronbach's alphas for the global teacher support and its three sub-dimensions were as excellent as .968, .935, .939, and .923, indicating that the *SPEFLISS* was also a reliable tool to measure perceived teacher support in the context of online teaching (Hair et al., 2019).

Anxiety. The anxiety scale was the 8-item shortened version (Dewaele & MacIntyre, 2014) extracted from the original 33-item *Foreign Language Classroom Anxiety Scale (FLCAS)* (Horwitz et al., 1986). Item 4 and 5 were stated reversely, requiring reverse scoring in data processing. The internal consistency of this scale was robust, yielding a high Cronbach's alpha coefficient of .944.

Boredom. The boredom scale was adapted from the *Foreign Language Class Boredom Subscale (FLCBS)*, which is a subscale of the 32-items *Foreign Language Learning Boredom Scale (FLLBS)* developed and validated by C. Li et al. (2020). The wording of the 8-item subscale was fine-tuned to specifically describe the Chinese context of English online learning. For example, item 6 "Time is dragging on in English class" was changed into "Time is dragging on in the online English class". The scale analysis revealed high internal consistency in the current sample (Cronbach's $\alpha = .968$).

Continuance intention. The continuance intention scale was adapted from the modified version (Joo et al., 2018) from the *Behavioral Intention subscale* developed by Taylor and Todd (1995). Validated among a sample of 222 Korean university students to assess their intention to continuously use K-MOOCs, the modified version displayed good reliability (Cronbach's $\alpha = .83$). The scale was reformulated in the current research to better fit in the context of Chinese online college English teaching. One example item was: "If online English learning becomes diverse in the future, I intend to use it frequently even after graduation". The Cronbach's alpha for the three-item scale in the current sample was as satisfactory as .921.

Two open-ended questions. The questionnaire ended with two open-ended questions to gain a more profound comprehension of students' perceptions and experiences of learning English online. These two questions were formulated as follows: "What obstacles has the current large-scale online teaching brought to hinder your intention to learn English online?" and "What would you suggest to make online learning better?"

Data Collection

The questionnaire survey was administrated using convenience sampling through the most popular online questionnaire platform (<https://www.wjx.cn/>) in China from August 15th to 25th 2023 after the Spring semester terminated in all universities. Many university professors and instructors were asked to help recruit their non-English major students who had attended full-scale online college English classes. These universities represented a diverse range, including top-tier

institutions in metropolitan cities and those with lower rankings. To improve response quality, students were encouraged to voluntarily participate in the survey, and they were assured that there would be no academic consequences associated with their participation.

Data Analysis

Outliers were screened out from the collected data using excel in the first place. Cases were deemed invalid if they failed to provide non-reversed answers or consecutively selected the same options. As a result, 53 outliers were removed from a total of 466 responses, which left a valid sample of 413 students in the database. SPSS 26 was used for preliminary analyses, including descriptive analyses, normality distribution and reliability assessment. To address RQ 1, Pearson correlation analyses and paired samples t-tests were conducted, considering the ordinal nature of the Likert scale values. It's crucial to note that Likert scale responses represent ordered categorical data, where participants indicate varying degrees of agreement or disagreement without assuming equal intervals between response categories. Acknowledging this, our analyses were conducted with the appropriate consideration for the ordinal structure of the data. All the results are consolidated in Table 1. For RQ2, a series of multiple regression analyses were performed, followed by mediation analyses using PROCESS v4.2. More specifically, multiple regressions followed the four steps: First, teacher support and continuance intention were chosen as independent and dependent variables respectively; In the second and third steps, while teacher support remained the independent variable, anxiety and boredom were entered as the dependent variables separately to discern their individual contributions to students' continuance intention; In the last step, teacher support, anxiety, and boredom were all chosen as co-predictors for continuance intention. This comprehensive approach was conducted to explore the combined effects of these variables, providing a nuanced understanding of the factors influencing students' decision to continue language learning. Detailed results are presented in Table 2. For mediation analyses, PROCESS v4.2 (Model 4) was used to further calculate the total and indirect effects, compare the specific indirect effects of anxiety and boredom, and test confidence intervals using bootstrap 5000. Besides p value, the effect size r and Cohen's d were reported to provide more robust statistics to estimate the degree of significance (Wei et al., 2019).

Regarding RQ3, participants' responses to two open-ended questions (359 and 371 entries, respectively) were selected and coded through thematic analysis to triangulate the testing results and further explore supplementary explanations for the patterns. The qualitative data were discussed following quantitative results.

RESULTS

Descriptive Statistics and Correlation Analysis of Teacher Support, Anxiety, Boredom and Continuance Intention

Based on the proposed cut-off values of absolute skewness and kurtosis being smaller than 2 and 7, respectively, for sample sizes larger than 300 (Kim, 2013), the skewness and kurtosis values presented in Table 1 demonstrated that the four variables under assessment were all normally distributed, meeting the prerequisite for subsequent regression analyses. Pearson correlation results revealed that these variables were all significantly correlated to varying degrees. More specifically, TS was found to be positively related to CI ($r = .727, p < .01$). Based on Plonsky and Oswald's (2014) benchmarks for small, medium, and large Pearson correlations ($r = .25, .40, .60$) specifically in L2 research, this correlation was deemed with a large effect size. In contrast, TS was found to be negatively related to anxiety and boredom, both with a medium-to-large effect size ($r = -.544, p < .01$; $r = -.595, p < .01$, respectively). In addition, anxiety and boredom were found to be negatively correlated to CI, both with a large effect size ($r = -.674, p < .01$; $r = -.710, p < .01$, respectively). In terms of the relation between the two negative emotions, they were positively correlated to each other with a large effect size ($r = .698, p < .01$). A paired t-test was further conducted to show that participants reported significantly more anxiety than boredom in their English online classes ($df = 412, t = 13.284, p < .001$, Cohen's $d = .65$). According to Plonsky and Oswald (2014), .40, .60, and .90 should be referred to, respectively, as the small, medium and large benchmarks for effect size Cohen's d for between-groups comparison. Thus, the difference between anxiety and boredom experienced by the Chinese EFL participants presented a medium effect size.

TABLE 1
Descriptive Statistics and Correlation Matrix (n = 413)

	M	SD	Skewness	Kurtosis	TS	FLA	FLB	CI
TS	4.208	.818	-.972	.723	-			
Anxiety	3.038	.869	-.123	-.127	-.544**	-		
Boredom	2.548	1.024	.177	-.751	-.595**	.698**	-	
CI	3.953	.880	-.576	-.553	.727**	-.674**	-.710**	-

Note: **. Correlation is significant at the 0.01 level (2-tailed). TS = teacher support; CI = continuance intention.

Co-mediating Effect of the Two Negative Emotions on the Relationship Between Teacher Support and Continuance Intention

The results of the multiple regression analyses are listed in Table 2. The most striking findings worth noting are the following: (1) participants' perceived teacher support predicted their continuance intention positively and significantly ($\beta = -.727, p < .001$); (2) participants' perceived teacher support predicted anxiety and boredom significantly ($\beta_1 = -.544, p < .001$; $\beta_2 = -.595, p < .001$); (3) in the presence of teacher support, anxiety and boredom in the same model, the negative emotions predicted continuance intention negatively and significantly ($\beta_1 = -.242, p < .001$; $\beta_2 = -.289, p < .001$), and the predictive effect of teacher support on continuance intention remained significant ($\beta = -.424, p < .001$). These findings indicate that the parallel multiple mediator model in the current study is an excellent fit of the data ($R^2 = .676, F(3, 409) = 284.259, p < .001$): anxiety and boredom collectively mediated the effect of teacher support on participants' continuance intention of online learning. That is, teacher support predicted participants' continuance intention either directly or indirectly by predicting the two negative emotions first. Figure 1 shows the parameters of the parallel mediator model.

TABLE 2
Regression Results (n = 413)

Regression equations		Fit index			Coefficient			95.0% Confidence interval for B		Collinearity statistics	
Predictor	Outcome	R	R ²	F	β	B	t	Lower bound	Upper bound	Tolerance	VIF
TS	CI	.727	.529	461.323***	-.544	-.578	-13.140***	-.664	-.491	1.000	1.000
	Anxiety	.544	.296	172.668***	-.595	-.745	-15.024***	-.843	-.648	1.000	1.000
TS	Boredom	.595	.355	225.719***	.424	.456	11.794***	.380	.532	.613	1.630
	CI	.822	.676	284.259***	-.242	-.245	-5.991***	-.325	-.164	.488	2.051
Anxiety					-.289	-.248	-6.855***	-.319	-.177	.447	2.237

Note. β and B represent standardized and unstandardized coefficients, respectively. TS = teacher support; CI = continuance intention. *** $p < .001$

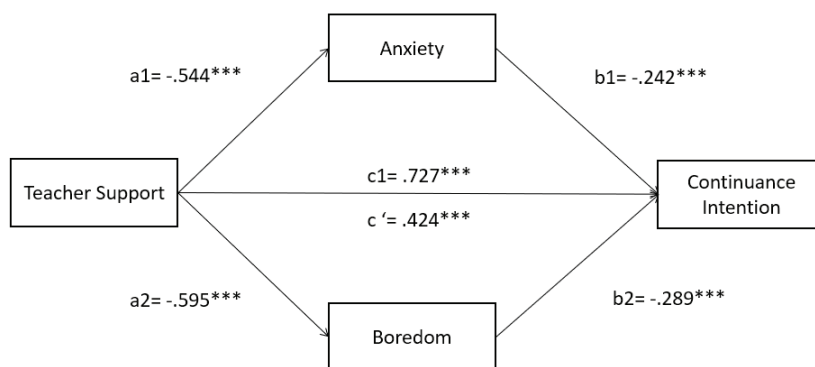


FIGURE 1
The Statistical Diagram of Parallel Multiple Mediation
*** $p < .001$

TABLE 3
Analysis of the Mediation Model

Pathway	Indirect effect size	SE	BCa 95% CI	Indirect/total effect
Total indirect effect	.326	.031	[.267 , .389]	41.69%
TS→FLCA→CI	.141	.022	[.099 , .187]	18.03%
TS→FLB→CI	.185	.030	[.127 , .242]	23.66%
C1 (FLCA - FLB)	-.044	.042	[-.127 , .039]	
Direct effect	0.456			58.31%
Total effect	0.782			

Note. All coefficients except CI are completely standardized coefficients. TS = teacher support; CI = continuance intention; FLCA = foreign language classroom anxiety; FLB = foreign language boredom.

Total indirect effect and comparison between the indirect effects of anxiety and boredom were assessed with PROCESS v4.2. As the results presented in Table 3, the 95% confidence intervals did not straddle zero, so it can be speculated that anxiety and boredom mediated the effect of teacher support on continuance intention in parallel, with the effect sizes being .141 and .185, respectively. Therefore, the total mediating effect size was .326, taking up 41.69% of the total effect of teacher support on continuance intention. Moreover, the results of C1 indicate that the mediating effect through boredom was stronger than those through anxiety, taking up 23.66% and 18.03% of the total mediating effect, respectively. However, the 95% confidence interval included zero, indicating that the difference did not reach a significant level.

Qualitative Analysis of Participants' Views on Online Learning and their Suggestions for Future Improvement

The first question, "What obstacles has the current large-scale online teaching brought to hinder your intention to learn English online?" elicited 405 responses, of which 359 were considered valid after eliminating entries containing only one word or vague meanings. Entries with complete phrases or sentences were deemed meaningful and thus included in the analysis. Through repeated reading, coding, and proofreading, three main adverse consequences were identified based on participants' online learning experiences.

Among them, 63 reported diminished motivation. For example, one student expressed that "*I feel like my English learning is losing control. I expect to go back normal and feel real.*" 51 students mentioned absence of teacher presence. One typical expression was that "*My self-discipline is getting worse since no one is watching over my learning and putting pressure on me.*" Meanwhile, 19 students had problems with the unsatisfactory class atmosphere. One student complained that "*Learning atmosphere online is not comparable to that offline*", another said "*Many students are doing their own stuff under the camera. I'm negatively influenced by the low morale and feel we're no longer a united team.*" These findings underscore the challenges some learners face in adapting to virtual education and the importance of addressing these concerns in order to optimize the overall learning experience.

In response to the second question, "What would you suggest to make online learning better?", five primary recommendations emerged from a total of 371 valid entries. Nearly 50% of the participants (183 out of 371) advocated for increased teacher-student interaction as a crucial component of high-quality online education. This could be facilitated through organizing online activities, promoting active thinking by posing questions, and encouraging student presentations or participation in mock teaching, rather than mere passive note-taking. Furthermore, 82 respondents suggested incorporating engaging content to enrich language instruction, such as incorporating elements of foreign cultures or relevant real-world knowledge in English, to create a more dynamic learning atmosphere. Meanwhile, 75 participants underscored the necessity of enhancing teacher supervision to compensate for the diminished teacher presence in online settings. In addition to teacher monitoring and evaluation, the establishment of mutual aid groups and peer supervision were proposed as alternative reciprocal arrangements to foster a cohesive learning community. Additionally, 28 students recommended the implementation of blended learning strategies, while three participants called for more reliable and cross-platform software, enabling seamless transitions between devices such as smartphones and tablets with larger screens to mitigate eye strain.

DISCUSSION

Regarding the first research question, correlational analyses revealed statistically significant relationships among the four variables under investigation. Specifically, the relationship between students' perceived teacher support and their intention to continue online learning emerged as the strongest correlation in this study, demonstrating a large effect size. That is, the more care and support students feel and perceive from their teachers, the significantly higher their willingness to continue with English online courses, and vice versa. In contrast, the relationship between teacher support and the two academic emotions were both negative at a medium-to-large level, with slightly more variability observed in the case of boredom. These findings align with previous studies, highlighting the pivotal role of teacher support in significantly alleviating negative feelings of anxiety (Huang et al., 2010) and boredom (Ekatushabe et al., 2021; Kruk et al., 2022; Zhao & Yang, 2022). Since teacher support was found as a stronger predictor of boredom, it is essential to introduce boredom-reducing activities in online FL classrooms, complementing anxiety-reducing strategies to prevent monotony and boost students' emotional well-being (C. Li, 2022). Of note, as the relationship is reciprocal, while teacher support can mitigate students' negative feelings, students displaying their boredom or anxiety are more likely to neglect teachers' efforts and dampen teachers' enthusiasm for supporting and assisting their students (C. Li, 2022; Zhao & Yang, 2022).

Besides, the two negative emotions also proved to be negatively related to continuance intention, with a large effect size, suggesting that EFL students tended to discontinue English online learning when experiencing higher levels of anxiety and boredom, and vice versa. This finding echoes the previous research (Abdullah & Ward, 2016; Chiu & Wang, 2008; Hu et al., 2022; X. Li et al., 2022), which have also reported the significant and negative association between anxiety and continuance intention of online learning. Notably, this study's prominent discovery is the identification of boredom as another robust predictor of continuance intention. This observation is in line with the broaden-and-build theory, which claims the disruptive effects of negative emotions in narrowing language learners' scope of cognition, thoughts, and behaviors, as well as impeding their psychological resilience and social connections in the long run (Oxford, 2015). Prior research exploring the correlation between continuance intention and negative emotions in the EFL context has been scarce. Thus, the present study constitutes a meaningful addition to this line of research. Further investigations are needed to delve deeper into the strong links between continuance intention and boredom, as well as its interplay with other negative emotions.

When it comes to the relationship between anxiety and boredom, the two negative emotions were found to be positively correlated, confirming previous studies (C. Li et al., 2022; C. Li & Wei, 2022; E. Liu & Wang, 2023). Further, paired samples t-test results showed that students reported significantly higher levels of anxiety than boredom, which is consistent with the finding of C. Li et al. (2022) and C. Li and Han (2022). This disparity may be attributed, in part, to the specific education system in the Chinese context. Students experience intense anxiety due to high-stakes exam preparation and high expectation from significant others, especially their parents and teachers (E. Liu et al., 2022). It is also worth noting that, by contrast, boredom was more profoundly associated with teacher support and more lethal than anxiety for continuance intention in the current study. One possible explanation could be that anxiety and boredom have distinct roots, though they both exert hindering impact on language learners' willingness and performance (C. Li et al., 2022). Anxiety is less context-dependent and mainly driven by learner-internal variables, such as personality trait and students' relative standing among their peers (Dewaele & MacIntyre, 2019; Jiang & Dewaele, 2019; C. Li et al., 2021), whereas boredom is relatively more sensitive to learner-external factors (Kruk et al., 2022; Zawodniak et al., 2021).

Concerning the second question, regression analysis first revealed that teacher support had a significantly positive and direct influence on participants' continuance intention, explaining about 53% of the variance. Subsequent mediation analysis indicated that this impact was partially mediated by participants' experiences of anxiety and boredom. Taken together, teacher support was found to directly and indirectly influence students' intention to continue learning English online. In the first place, anxiety and boredom were both significantly predicted by teacher support, with about 30% and 35% of the variance separately being explained. Once again, it seems to suggest that boredom is similar to enjoyment in the aspect of being more associated with ongoing activities, especially in terms of teacher and peer behaviors and interaction with them all, while anxiety is more self-oriented and evoked by academic outcomes (Dewaele & MacIntyre, 2019; Jiang & Dewaele, 2019; C. Li & Han, 2022). Teacher support, therefore as a teacher-related factor, was found to have a greater impact on student boredom than on anxiety. When both negative emotions were selected in the same model, their joint mediating effects became clear and evident, while teacher support still remained its significant predictive power on continuance intention. The results of mediation analysis showcased that the combined mediating effect of anxiety and boredom accounted for 41.69% of the total effect. Another interesting finding was that, boredom (23.66%) contributed more to the mediating effect than anxiety did (18.03%), mirroring the results of correlational analyses. This implies that students' decision to persist in web-based language learning hinges more on the dissipation of negative bored feelings, followed by anxious ones.

In practical terms, teachers should engage and activate students by introducing new and well-designed activities, thereby creating a warmer and more stimulating learning environment (C. Li et al., 2022).

With regard to the third research question, the qualitative findings shed light on the multifaceted personal and environment-bound frustrations that students face in online learning. A significant number of respondents expressed diminished motivation, citing a loss of control and authenticity in their learning experience. This sentiment underscores the importance of addressing the psychological aspects of online education, emphasizing the need for students to feel engaged and motivated to learn. Furthermore, the absence of teacher presence emerged as a critical concern, leading to declining self-discipline and accountability among learners. This finding is in alignment with previous research (Cao, 2023) that students during the pandemic expressed higher needs for social networks, specifically by actually seeing and hearing their teachers in synchronous learning environments. To address this, active teacher-student interaction was overwhelmingly recommended in this survey study, emphasizing the pivotal role of educators in reducing social disconnection and sustaining students' commitment to online learning. The significance of a supportive learning community was also highlighted, with students proposing peer supervision and mutual aid groups as means to foster a sense of belonging and shared responsibility. These suggestions agree with Warner et al.'s (1988) assertion that the more distant the students, the more crucial a quality level of interactivity with both teachers and peers needs. Additionally, integrating engaging, culturally relevant content was suggested to invigorate the learning atmosphere and enhance students' connection with the subject matter. Many students also recommended blended learning and called for more cross-platform software to reduce potential barriers to learning English online. In a nutshell, these results collectively exemplify the person-environment interaction in psychology and SLA, which underscores that human behaviors, experiences and emotions are mainly contingent on the interplay of person attributes and the environment they are situated in (Funder, 2008).

CONCLUSION

The present study delved into the direct and indirect links between perceived teacher support, negative FL learner emotions (i.e., anxiety and boredom) and students' willingness to continue with English online learning. The results provided empirical evidence that perceived teacher support positively predicted students' online continuance intention while being negatively correlated with their boredom and anxiety. This study also revealed the deleterious effects of university students' anxiety and boredom on their intention to continue learning online. More importantly, the research explored psychological pathways between teacher support and online learning intention by testifying the partially mediating effects of these two negative emotions in between. Interestingly, boredom emerged as a stronger mediator than anxiety. Subsequent qualitative data analysis validated these quantitative findings and hinted peer variables as other important determinants for the success and retention of web-based language learning.

Three limitations in this survey research should be acknowledged. To start with, the cross-sectional design with both quantitative and qualitative data was beneficial to identify the correlations as well as the direct and indirect pathways among teacher support, academic emotions and continuance intention. However, the data was collected at a single point in time, which would yield results that are inevitably ambiguous in the directions of causality and fluctuations over time. To address this, future research should employ more longitudinal mediation models and experiments (Jose, 2016) to shed additional insights, as longer or stronger treatments may result in more substantial effects and differences between groups (Plonsky & Oswald, 2014). Second, the findings of this survey research are specifically reflective of Chinese non-English majors learning college English course online. Further research could investigate whether similar results still hold for English majors, lower educational levels, even other EFL national settings or foreign languages. Third, no covariates, such as gender and age, were controlled during data analyses in the present study, which limits more specific insights that can be gleaned about the relationships between participants' perceptions of teacher support, their academic emotions and continuance intention in the online context. Future studies are thus suggested to add these covariates to their analyses to gain a more nuanced picture of potential causes and outcomes in different situations.

Despite the aforementioned limitations, this study offers some important pedagogical implications for EFL online education: First, supportive L2 teachers have the potential to greatly alleviate students' negative classroom emotions and increase their intention to attend web-based language learning. Teachers hold exclusive control and set the emotional tone in the classroom, especially in the Chinese context where students more often show obedience to teachers as authority figures (C. Li et al., 2018). Therefore, it is the teacher who shoulders more responsibility in creating a safe and welcoming classroom atmosphere. This can be achieved through the establishment of trusting and caring interpersonal relationships with students, sharing online learning resources, providing knowledge information as well as timely constructive feedback. Given that

online learning enlarges the physical distance between teachers and students, the need for increased interactivity between these two parties becomes paramount. More teacher-student interaction and teacher evaluation should be emphasized, since academic learning never takes place in a social vacuum when students are scattered in different locations and learn languages alone (C. Li et al., 2021).

Second, considering boredom's role as a stronger negative predictor and mediator than anxiety, even though the latter has been more extensively studied (C. Li, 2022), addressing boredom seems to be a more effective way for teachers to enhance student motivation and retention. To make classes more dynamic and engaging, teachers can incorporate interactive activities, stimulate active thinking through frequent quizzes and tasks, and encourage student presentations and participation in mock teaching, instead of traditional one-way transfer of knowledge information. Moreover, a wide range of ongoing social and cultural issues and debates and the cultivation of communication skills can also infuse vitality and relevance into the language learning process, making it both exciting and beneficial for EFL learners.

Third, previous research consistently underscores the significance of interacting more often with teachers and peers during online learning. Such interactions can foster social presence (Cao, 2023; Strauß & Rummel, 2020), create a sense of community, enhance students' involvement and contribution, and thus lead to higher levels of satisfaction and academic self-efficacy (She et al., 2021). In this vein, peer supervision and mutual aid groups that recurrently emerged in the qualitative data of the current research suggest their potential importance as co-determinants influencing learners' emotions and decision to persist in online learning. While recognizing the indispensable role of teacher factors, it is also imperative for educators to allocate sufficient time for community building and collaborative online learning.

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Appendix

Questionnaire Items

Construct	Itemss	Source
Teacher Support	1. The English teacher carries out special teaching for our weak points (such as attributive clauses, etc.)	Liu and Li, (2023)
	2. The English teacher shows us how to compensate for limited knowledge (such as guessing meaning from the context, etc.)	
	3. The English teacher imparts language knowledge to us (such as the pronunciation of words, fixed usage, etc.)	
	4. The English teacher expands our extracurricular cultural knowledge related to the textbook content	
	5. The English teacher imparts practical knowledge to us (such as sentence patterns, etc.)	
	6. The English teacher pays careful attention to my studies	
	7. The English teacher is very patient and will not give up on my study even if my foundation is poor	
	8. The English teacher has high expectations of me	
	9. The English teacher understands the difficulty of my English learning	
	10. The English teacher helps me choose suitable learning materials	
	11. The English helps me choose suitable extracurricular reading materials	
	12. The English teacher shares online learning resources with me (such as word memorization software, etc.)	
Anxiety	13. Even if I am well prepared for online English class, I feel anxious about it	Dewaele and MacIntyre, (2014)
	14. I always feel that the other students speak English better than I do	
	15. I can feel my heart pounding when I'm going to be called on in online English class	
	16. I don't worry about making mistakes in online English class	
	17. I feel confident when I speak in online English class	
	18. I get nervous and confused when I am speaking English in online English class	
	19. I start to panic when I have to speak without preparation in online English class	
	20. It embarrasses me to volunteer answers in my online English class	
Boredom	21. The online English class bores me	C. Li et al. (2020)
	22. I start yawning in online English class because I'm so bored	
	23. My mind begins to wander in the online English class	
	24. I am only physically sitting beside the computer, while my mind is wandering outside the English class.	
	25. It is difficult for me to concentrate in the online English class	
	26. Time is dragging on in the online English class	
	27. I get restless and cannot wait for the online English class to end	

	28. I always think about what else I might be doing to kill the time rather than sitting in this online English class	
Continuance Intention	29. I intend to attend online English class in the future continuously	Joo et al. (2018)
	30. I intend to utilize online English class for various purposes such as self-development as well as earning credit hours	
	31. If online English class becomes diverse in the future, I intent to use it frequently even after graduation	

Note. Academic support (items 1-5), emotional support (items 6-9), and instrument support (items 10-12) are three dimensions of teacher support; Items 16 and 17 on Anxiety are reverse coded.