Studies in Second Language Learning and Teaching
Department of English Studies, Faculty of Pedagogy and Fine Arts, Adam Mickiewicz University, Kalisz
SSLLT 15 (1). 2025. 13-39. Published online: 20.11.2024
https://doi.org/10.14746/sslt.40195
http://pressto.amu.edu.pl/index.php/sslt

Revisiting the relationship between global and specific levels of foreign language boredom and language engagement: A moderated mediation model of academic buoyancy and emotional engagement

Honggang Liu
Soochow University, China
https://orcid.org/0000-0002-0559-6072
liuhonggang@suda.edu.cn

Majid Elahi Shirvan ✉
University of Bojnord, Iran
https://orcid.org/0000-0003-3363-8273
elahishmajid@gmail.com

Tahereh Taherian
Yazd University, Iran
https://orcid.org/ 0000-0003-2583-8224
taherian87@yahoo.com

Abstract

The current research aimed to examine the relationships among three key aspects of the language learning process, namely, foreign language boredom (FLB), English language engagement (ELE), and academic buoyancy (AB), utilizing data collected from 2,992 Chinese language learners. In order to strengthen the accuracy and robustness of the results, we initially performed primary analyses to determine the most effective measurement solution for

the three variables. As a result, we decided to use a bifactor exploratory structural equation modeling (ESEM) solution for FLB, a partial bifactor-ESEM solution for ELE, and a unidimensional confirmatory factor analysis solution for AB. The primary analysis demonstrated that the global factor of FLB strongly and negatively influenced the global levels of ELE. Both global and specific factors of FLB predicted different facets of specific ELE differently. The mediation-moderation analysis further confirmed the significance of the specific factors of emotional ELE as mediators and AB as a moderator in the relationships between global and specific levels of FLB and global and specific levels of ELE. The findings offer a basis for theoretical and pedagogical implications.

Keywords: foreign language boredom; English language engagement; academic buoyancy; emotional engagement; exploratory structural equation modeling; global factor; specific factor

1. Introduction

The complex connection between English language engagement (ELE) and foreign language boredom (FLB) has emerged as a subject of many studies in second language acquisition (SLA), underscoring its significance in shaping the second and foreign language (L2) learning experience (Kruk, Elahi Shirvan, et al., 2022; Kruk, Pawlak, et al., 2022; Kruk, Pawlak, Taherian, et al., 2023; Liu et al., 2022; Mohammad Hosseini et al., 2022; Tsang & Dewaele, 2023; Zhao & Yang, 2022). However, an examination of previous research reveals a need to address two crucial gaps.

The first gap concerns the conflicting findings concerning the relationship between FLB and ELE. Although many studies characterize FLB as counterproductive (Elahi Shirvan et al., 2021; Kruk et al., 2021; Kruk, Pawlak, et al., 2022; Pawlak, Zawodniak, et al., 2020) or neutral (Tsang & Dewaele, 2023) with respect to language learning outcomes, the field of educational psychology (Bench & Lench, 2019; Elpidorou, 2018) and recently SLA (Elahi Shirvan et al., 2024a, 2024b) have described boredom as an emotion that has both positive and negative aspects. Westgate (2019), for example, proposed that boredom signifies a lack of focus and meaning, but it can yield positive consequences for learning outcomes based on the response to it. This disparity establishes the foundation for an investigation into the complexities surrounding FLB and ELE that have been ignored so far.

The primary reason for this inconsistency could be attributed to the challenge faced by previous studies in establishing a well-defined conceptualization of FLB and ELE by distinguishing between the global effects of the two constructs and the specific contributions of their subfactors (i.e., for FLB: disengagement, monotony, and repetitiveness [DMR] and lack of challenge and satisfaction

[LCS]; for ELE: behavioral, emotional, cognitive, and agentic engagement). In line with this, according to Hiver et al.'s (2024) systematic review of ELE, less than 35% of the studies reviewed included a clear conceptualization of the concept. Hiver et al. (2024) argued that a well-defined conceptualization of engagement could provide valuable insights for research and pedagogy. Therefore, examining the specific effects of different aspects of ELE and FLB, as well as the global effects of these constructs, can enhance consistency in empirical research. There are some unanswered questions regarding the influence of the global effect of FLB and the specific effects of its subfactors on both the global factor (G-factor) and specific factors (S-factors) of ELE. For instance, do two subdomains of FLB contribute equally to global FLB? Which subdomain of FLB has a more significant impact on global ELE? Which subfactor of FLB can exert more or less influence on different aspects of ELE? Addressing these questions will provide a deeper understanding of the complex relationship between various aspects of FLB and ELE.

The second gap arises from the limited amount of research that investigates the underlying mechanisms of the association between FLB and ELE at the global and specific levels. According to Hiver et al. (2024), it is crucial to identify learners who are not experiencing disengagement in order to gain insight into the individual characteristics that distinguish engaged learners from disengaged learners. To investigate the underlying mechanisms of the link between FLB and ELE, we need to conduct a mediation-moderation analysis. This analysis is necessary to unpack and understand the specific ways in which FLB, as a challenge in language learning, influences ELE through the mediating-moderating mechanism of L2 learners' characteristics, specifically emotional engagement and academic buoyancy (AB). The inclusion of emotional engagement and AB as key variables is justified by their critical roles in the engagement process.

Emotional engagement is included as a mediator in this study based on its pivotal role in influencing other aspects of engagement, such as behavioral and cognitive engagement (Dierendonck et al., 2023; Skinner et al., 2008). Skinner et al. (2008) highlighted that emotional engagement is a strong predictor of changes in behavioral and cognitive engagement, with emotionally engaged students demonstrating increasing levels of engagement throughout the academic year. This observation is supported by self-determination theory (Deci & Ryan, 1985), which posits that positive emotional engagement, such as experiencing enjoyment and hope, fuels engaged behaviors like effort and persistence. Therefore, emotional engagement is not only integral to the development of other forms of engagement but also serves as a crucial mechanism through which FLB may impact ELE. By understanding how emotional engagement mediates the relationship between FLB and ELE, this study can provide deeper insights into the emotional dynamics that drive language learners' engagement.

Additionally, in this study, AB is proposed as a moderator between FLB and ELE due to its role in helping students navigate academic challenges and maintain engagement. AB refers to students' capacity to effectively manage common academic challenges, such as negative emotions, low grades, and temporary decreases in motivation and engagement (Martin & Marsh, 2008). Research has consistently shown that AB is a significant individual difference factor that impacts engagement, with buoyant learners making greater progress and achieving more desirable outcomes, such as increased motivation, self-efficacy, and engagement (Putwain et al., 2022; Wang & Liu, 2022). Moreover, learners with high AB are better equipped to manage the negative effects of boredom on engagement by viewing challenges as opportunities for growth rather than insurmountable obstacles (Liu et al., 2022; Wang & Liu, 2022; Yun et al., 2018). This positive attitude, underpinned by control-value theory (CVT; Pekrun et al., 2010), suggests that AB can act as a buffer against the detrimental impact of FLB on learning outcomes, such as engagement.

In order to comprehensively address these gaps, the current study aims to achieve two primary objectives. The first objective is to provide a clear operationalization of the underlying structures of ELE and FLB. This will be accomplished through the application of exploratory structural equation modeling (ESEM; Asparouhov & Muthén, 2009), which allows for a comprehensive understanding of the multidimensional structures of these constructs. This will shed light on the multidimensional nature of FLB and ELE, and illuminate the extent to which G-factors and S-factors can explain the effects (Alamer & Marsh, 2022; Dierendonck et al., 2023; Pawlak, Solhi, et al., 2023). Additionally, it can potentially help explain the inconsistent research findings and their practical implications. The second objective is to gain insight into the underlying mechanisms that define the link between FLB and ELE. This will be achieved by integrating the influential mediating role of emotional engagement and the moderating role of AB into the SEM models. By undertaking this journey, the study can contribute to the theoretical foundations of SLA and offer practical insights that can inform pedagogical practices that can eventually foster a more engaging and enriching language learning experience.

2. Review of literature

2.1. Conceptualization of boredom and engagement

Boredom is a negative activity-achievement emotion induced by repetitive tasks (Pekrun et al., 2010). In the field of SLA, FLB was introduced by Kruk (2016). In the definition provided by Kruk et al. (2016), FLB refers to "a state of disengagement

caused by a lack of interest and involvement" (p. 21). Learner boredom represents a temporary state that fluctuates in intensity based on the degree of arousal experienced during task performance. Therefore, the emotional states of learners experiencing boredom may encompass a spectrum ranging from a state of cheerful fatigue (indifferent boredom), a desire to change the current circumstances (calibrating boredom), a vigorous pursuit to discover more engaging activities (searching boredom), or an unpleasant effort to attribute responsibility to external conditions (reactant boredom) to a negative experience of powerlessness intertwined with discontent (apathetic boredom) (Goetz et al., 2014).

Pawlak, Kruk, et al. (2020) developed and validated the FLB scale, which consists of two subfactors. The first subfactor, DMR, represents the reactive aspect of FLB and can encompass calibrating, indifferent, or apathetic boredom. Students experience DMR either by recognizing the negativity of this emotion but being unable to overcome it or by unconsciously accepting it and experiencing extreme frustration. The second facet is LCS, which can be seen as a more proactive dimension of FLB. LCS also refers to the searching aspect of FLB. This facet of FLB can act as a catalyst for greater effort to find more satisfying and challenging conditions when the learning context lacks challenge and stimulation. The different nature of the FLB subdomains may have varying effects on language learning outcomes, including ELE (Liu et al., 2022). Despite the distinct characteristics of each FLB subdimension, we can also view them as part of a unified FLB continuum (Kruk, Pawlak, Elahi Shirvan, et al., 2023; Kruk, Pawlak, Taherian, et al., 2023; Pawlak, Kruk, et al., 2023; Taherian et al., 2024).

Engagement, as explained by Hiver et al. (2024), is a complex and multidimensional concept that encompasses the interaction between the environment, the person, and their actions. It serves as a sign of motivation in learners, leading to academic persistence, investment, and desirable achievement (Mercer & Dörnyei, 2020). In the context of SLA, high levels of engagement among students are commonly associated with enthusiasm, dedication, involvement, diligence, and determination in the learning process (Tsang & Dewaele, 2023). Over the past decade, different conceptualizations of engagement have emerged, ranging from task-specific to global engagement in a subject (Alrabai & Algazzaz, 2024; Aubrey, 2022; Reeve & Tseng, 2011). Nonetheless, all these conceptualizations are grounded in the understanding that ELE is a multifaceted and multidimensional concept. In recent years, within the realm of SLA, a comprehensive four-dimensional engagement framework, including behavioral, emotional, cognitive, and agentive engagement, has been established by Reeve and Tseng (2011). Using this framework, research has commenced examining the association between engagement and different personal and contextual factors (Dewaele & Li, 2020; Dierendonck et al., 2023; Liu et al., 2023; Tsang & Dewaele, 2023; Wang & Liu, 2022).

Behavioral ELE refers to students' efforts, compliance, concentration, and active participation in different tasks in class. Cognitive ELE describes the psychological investment that learners make in their learning by applying mental strategies. Emotional ELE pertains to learners' emotional state, as well as their emotional responses to learning. Lastly, agentic ELE refers to learners' influence on enhancing the quality of learning (Reeve & Tseng, 2011). The rationale behind the conceptualization of learner ELE in the present study relies on Reeve and Tseng's (2011) definition of the construct, which can be effectively applied across different learning contexts, encompassing both task-specific and global engagement in a language learning context (Dewaele & Li, 2020; Dierendonck et al., 2023; Kruk, Pawlak, Elahi Shirvan, et al., 2023; Kruk, Pawlak, Taherian, et al., 2023; Tsang & Dewaele, 2023). In this research, learner ELE is defined as a complex multidimensional construct that encompasses behavioral, cognitive, emotional, and agentic ELE in its broad sense rather than being limited to task-specific engagement (Reeve & Tseng, 2011).

2.2. The complex relationship between FLB and ELE

In general, researchers in SLA have embraced various perspectives in their examination of the antecedents of ELE (Mercer & Dörnyei, 2020). As positive psychology has been integrated into SLA, there has been an increasing recognition of the impact of positive and negative emotions on learner ELE (Dewaele & Li, 2020; Tsang & Dewaele, 2023). This acknowledges the dynamic nature of emotional experiences during engagement. Considering that FLB is a commonly experienced emotion in SLA environments (Kruk, Pawlak, Elahi Shirvan, et al., 2023) and that it significantly influences the learning process (Pawlak, Kruk, et al., 2020), it is plausible to explore the effects of FLB on various facets of ELE.

There is a consensus in the empirical and theoretical research literature that FLB and ELE are interconnected concepts, with FLB being a precursor to ELE (Mohammad Hosseini et al., 2022; Noels et al., 2019; Pekrun et al., 2010; Tsang & Dewaele, 2023; Zhao & Yang, 2022). From the lens of CVT, boredom, as a negative emotion, can trigger a decrease in learners' sense of control and perceived value in the learning process, leading to lower motivation and engagement (Pekrun et al., 2010). From an empirical perspective, previous studies have indicated that FLB is negatively associated with ELE, as bored learners display signs of disinterest, apathy, resignation and reduced effort (Pawlak, Kruk, et al., 2020). However, some studies have reported no correlation between FLB and ELE or have even provided evidence for a positive association. For instance, Tseng and Dewaele (2023) examined the emotions (e.g., enjoyment, anxiety, and boredom) of young language learners and their connection to engagement and proficiency. They

discovered that enjoyment was the sole significant predictor of engagement and proficiency, while anxiety and FLB failed to account for any unique variance. Other studies in psychology have centered on boredom as an alerting mechanism and argued that regulating behaviors resulting from boredom may lead to positive outcomes (Bench & Lench, 2019; Westgate, 2019). For example, Bench and Lench (2019) viewed boredom as a functional emotion, indicating that it can signal coping behaviors and motivate individuals to explore meaningfulness or satisfaction.

Recently, in the field of SLA, research has indicated that the association between FLB and positive outcomes (Elahi Shirvan et al., 2024a, 2024b) can be positive. For example, Elahi Shirvan et al. (2024a) investigated the influence of FLB on various dimensions of learner engagement mediated by boredom-coping strategies (BCSs) and moderated through foreign language playfulness (FLP) in the relationship between BCSs and learner engagement. The findings showed that FLB can exert an indirect influence on learner engagement, manifesting either positively or negatively, contingent upon the employment of varying BCSs, namely, approach versus avoidance strategies. That is, when language learners implement cognitive and behavioral avoidance BCSs, a significant negative correlation between FLB and engagement emerges. In contrast, the application of cognitive and behavioral approach BCSs as mediators results in a positive and significant relationship between FLB and engagement.

Such inconsistency in previous research regarding the relationship between FLB and ELE may be attributed to the fact that previous studies did not differentiate between the global impact of FLB and the specific effects of its subfactors on both the G-factor and S-factors of ELE. On the one hand, the subfactor known as DMR, which represents the deactivating dimension of FLB, may result in disengagement as students lose interest or motivation (Pawlak, Kruk, et al., 2020). On the other hand, the other subfactor called LCS, representing the searching dimension of FLB (Pawlak, Kruk, et al., 2020), may indicate that students are challenging themselves and employing various strategies, which may lead to a neutral or even positive effect on engagement. Taken together, our primary goal is to overcome this challenge by examining the connections between G-factors and S-factors in FLB and ELE.

The relationship between FLB and ELE becomes more complicated when addressing how the influence of FLB may vary depending on the specific emotional, behavioral, agentic, and cognitive elements of ELE (Dierendonck et al., 2023). Skinner et al. (2008) conducted an investigation into the inside dynamics of engagement, specifically examining the reciprocal influences among the various components of engagement over time. The findings revealed that emotional engagement serves as a significant predictor of fluctuations in both behavioral and cognitive engagement. Specifically, students exhibiting higher levels of emotional engagement in the class demonstrated an increase in behavioral and cognitive engagement throughout the academic

year. This implies that the emotional dimension of engagement is posited to have a pivotal impact on the enhancement of other engagement dimensions, including cognitive and behavioral engagement. Skinner et al. (2008) contended that emotional engagement serves as a catalyst for other engagement forms, particularly behavioral engagement, within the educational environment. This assertion aligns with the self-determination theory (Deci & Ryan, 1985), which posits that emotionally engaged states, such as interest and enthusiasm, are the driving forces behind engaged behaviors, including effort and persistence.

Dierendonck et al. (2023) confirmed this assumption. They investigated the associations between academic motivation and student engagement among students enrolled in grades 7 to 12 in regular education secondary schools. The results of their study supported a partial bifactor-confirmatory factor analysis (CFA) representation of engagement, which allows for an appropriate separation of learners' global levels of engagement from specific cognitive and behavioral engagement dimensions. However, the emotional dimension of engagement was shown to be distinct from the other facets and the G-factor in the bifactor model. That is, while the behavioral and cognitive facets of engagement were found to have both global and specific characteristics, emotional engagement did not. Instead, emotional engagement represented a distinct factor that needed to be considered when evaluating learners' engagement process. Dierendonck et al. (2023) provided evidence for the conceptual advantage of a framework that views emotional engagement as a predictor of other aspects of engagement instead of considering it to be on the same level as the other subfactors of engagement. Their findings confirmed that emotional engagement can act as a mediator in the relationship between motivation and both G-factors and S-factors of engagement. Building on the idea proposed by Skinner et al. (2008) and the evidence provided by Dierendonck et al. (2023), the current study also examines the mediating role of emotional ELE in the connection between FLB and ELE.

2.3. Academic buoyancy and its impact on the link between boredom and engagement

The concept of AB was initially introduced by Martin and Marsh (2008), and it refers to the capacity of students to effectively handle academic obstacles and challenges that are commonly encountered in school. These challenges encompass, for example, the receipt of negative feedback or an unexpectedly low grade on an assignment, temporary decreases in motivation and engagement, experiencing negative emotions, challenges in interpersonal relationships with peers and teachers, as well as the pressures associated with tests and examinations (Putwain et al., 2022). Previous studies have suggested that AB is a significant individual difference factor that may impact engagement (Martin & Marsh, 2008; Putwain et al.,

2022; Wang & Liu, 2022; Yun et al., 2018). Buoyant learners tend to make greater progress in their learning; they are also more likely to develop increased interest, maintain high levels of motivation, build stronger self-efficacy, and persist in their efforts, all of which contribute to more desirable learning outcomes (Putwain et al., 2022, 2023). In contrast, learners with a low level of AB may exhibit passivity, a lack of focus, inefficient use of attention and effort, and a lack of commitment to learning. This emphasizes the importance of AB in fostering meaningful engagement in L2 learning (Liu et al., 2022; Wang & Liu, 2022; Yun et al., 2018). When buoyant learners experience a challenge, they can effectively handle that feeling, leading to fewer negative effects of boredom on engagement (Putwain et al., 2023).

The interplay between FLB, ELE, and AB can be clarified, drawing upon CVT (Pekrun et al., 2010) and empirical research findings. Firstly, according to CVT, individuals are more inclined to engage in a task when they perceive it as meaningful and believe they have control over the outcomes. Boredom may arise when a task lacks perceived value or when individuals feel a lack of control. In line with the emphasis of CVT on the significance of perceived control and meaningfulness in task engagement, students with high AB are better equipped to view the challenge posed by boredom as manageable. Their psychological attributes enable them to maintain a positive attitude, viewing challenges as opportunities for growth rather than insurmountable obstacles (Liu et al., 2022; Putwain et al., 2022). This positive attitude can serve as a link between boredom and sustained engagement through AB.

Putwain et al. (2023) suggested that AB can protect against boredom and sustain learner engagement because students with high AB can draw upon cognitive, emotional, and behavioral self-regulation strategies. These strategies help them stay engaged during challenges or quickly re-engage after setbacks. Despite evidence linking AB to engagement (Putwain et al., 2022), empirical studies on this relationship remain scarce. Since AB can reduce the intensity of negative emotions like boredom and anxiety, low levels of AB are likely to have little effect on the negative relationship between FLB and ELE. As AB increases, it is expected to moderate the harmful impact of boredom, weakening this negative relationship (Putwain et al., 2023). Examining AB's role becomes more pertinent when considering how the effects of FLB's subfactors – LCS and DMR – may vary due to their reactive and proactive natures and how different AB levels might influence the relationships between the G- and S-factors of FLB and ELE.

2.4. The dimensionality of FLB and ELE constructs

One significant limitation of previous studies that have focused on measuring students' FLB and ELE is their reliance on the implicit assumption that the different

subdomains of these measures are perfectly unidimensional according to psychometric standards, which is an essential assumption in CFA (Morin et al., 2015). However, CFA fails to consider two sources of construct-relevant psychometric multidimensionality, which can lead to biased estimations (Alamer & Marsh, 2022; Morin et al., 2015). These two sources are:

1. Hierarchically-ordered constructs: This source refers to organizing constructs hierarchically, where a global construct encompasses multiple first-order factors or subscales. For instance, when measuring FLB, a hierarchical model may include assessing LCS and DMR as first-order factors that contribute to a global FLB construct. However, the hierarchical model assumes that the relationships between items and the higher-order factor are indirect and mediated by the first-order factors. In practice, though, researchers often assume this hierarchical structure without rigorously testing whether the items truly relate to the higher-order construct through the first-order factors. This lack of thorough examination can lead to biased parameter estimates, as the assumed model may not accurately reflect the data's true structure (Morin et al., 2015).
2. Conceptually-related constructs: This source refers to assessing constructs that are conceptually close or related, resulting in potential cross-loadings between items and non-target factors. For example, in our study, it is plausible to hypothesize that scores on the specific DMR may also be associated with non-target but conceptually close constructs like LCS. CFA often assumes that cross-loadings between items and non-target factors are exactly zero. However, studies suggest that forcing these cross-loadings to be zero, even when they exist in the population model, can lead to biased estimation of factor correlations (Alamer & Marsh, 2022; Morin et al., 2015).

Both sources emphasize the necessity for more adaptable modeling approaches, such as bifactor models and ESEM, in order to more accurately comprehend the complexity of psychometric multidimensionality in research related to FLB and ELE. Asparouhov and Muthén (2009) introduced bifactor ESEM models as a flexible alternative approach that addresses the limitations of hierarchical models by allowing for a G-factor and S-factors, while also considering the restrictions of construct-relevant psychometric multidimensionality by permitting cross-loadings between items and non-target factors. Consequently, the bifactor-ESEM framework is proposed as a superior representation for analyzing the measures of FLB and ELE. Previous research has provided support for the effectiveness of bifactor-ESEM in analyzing FLB (e.g., Kruk, Pawlak, Elahi Shirvan, et al., 2023). Using this framework

in the current study enables a straightforward and explicit assessment of learners' global levels of FLB or ELE through the evaluation of a G-factor that underlies responses to all items incorporated in each particular scale. This G-factor coexists with S-factors that illustrate the distinct characteristics linked to each subcategory and remains unexplained by the G-factor.

3. The study

3.1. Research questions

Based on the considerations in the literature review, the present study addressed two research questions that are as follows:

RQ1: What are the associations between FLB and ELE when considering global and specific levels of these constructs?
RQ2: How can the relationships between global and specific levels of FLB and ELE be influenced through academic buoyancy and the specific factor of emotional ELE?

3.2. Participants

Stratified sampling was utilized to involve 2,992 high school students (N_{male} = 1,341; N_{female} = 1,651) from three capital cities in northern provinces in China. These cities maintained similar economic and social statuses. The current research involved 1,718 junior high school students (aged 13-16 years old, with English learning experiences ranging from 3 to 6 years) and 1,274 senior high school students (aged 17-19 years old, with English learning experiences ranging from 6 to 9 years). English is a compulsory course for all participants. Following the guidance on ethical issues in conducting quantitative research (Dörnyei & Dewaele, 2023), the current study obtained consent from participants as well as their teachers and parents.

3.3. Instrumentation

We used a composite questionnaire to examine students' boredom, engagement, and buoyancy in English learning. We put all the items of the questionnaire into the English learning context. For instance, in behavioral engagement, Q24 is as follows: "I listen carefully in English class." Firstly, the *Boredom in Practical English Language*

Classes-Revised (BPELC-R) (Pawlak, Kruk, et al, 2020) was employed to tap into FLB. The tool encompasses two facets of this negative emotion: LCS (lack of satisfaction and challenge, items 1-9), reflecting students' dissatisfaction with the lack of challenge and stimulation, and DMR (disengagement, monotony and repetitiveness, items 10-23), which manifests in avoidance and disinterest in learning English. Items 06, 07, 08, 21, 22, and 23 were reversed. Secondly, the *Engagement in English Learning Scale*, adopted from Reeve and Tseng (2011), was utilized to measure students' engagement. It has four dimensions: behavioral engagement (items 24-28), emotional engagement (items 29-32), cognitive engagement (items 33-40) and agentic engagement (items 41-45). Thirdly, the *Buoyancy in English Learning Scale* (Yun et al., 2018) was applied to tap into AB. It includes four items (items 46-49) to show how students respond to the drawbacks or difficulties in learning English. The supportive evidence for the reliability and validity of the scales is provided in supplementary materials (see https://osf.io/h7fp4/?view_only=f0311d39a3ba4970b460662df0642199).

3.4. Data collection

We collected data with the help of high school English teachers through pencil-and-paper questionnaires. We contacted these teachers, informing them of the study's objectives and potential risks (such as students' reluctance to complete the questionnaire in the presence of teachers), and emphasizing the option to withdraw if any of the three parties (i.e., teachers, students, and parents) felt uncomfortable with the questionnaires. We kindly reminded the teachers that these questionnaires were to be completed during their English classes. They were also advised to emphasize the importance of honesty to the students when filling out the surveys. In total, we distributed 3,100 copies and received 2,992 valid responses, with 108 copies excluded from the data pool due to incomplete or unanswered items.

3.5. Data analysis

The analyses were performed using Mplus 8.4, employing the robust maximum likelihood estimator as proposed by Muthén and Muthén (2017). Supplementary materials provide detailed information about the analysis of measurement models (see https://osf.io/h7fp4/?view_only=f0311d39a3ba4970b460662df0642199). Once the most appropriate solutions were identified for each measure independently, the final solutions for FLB (bifactor ESEM) and ELE (partial bifactor ESEM) were incorporated into three distinct models to accurately examine the interactions among them.

Given the selection of the partial bifactor ESEM as the final model for measuring ELE, we decided to position emotional ELE as a mediator between FLB and the other aspects of ELE. The partial bifactor ESEM separates the global ELE levels from specific facets like cognitive-ELE, behavioral-ELE, and agentic-ELE, and identifies emotional-ELE as distinct from these facets. Thus, in the structural model, we explored the mediating effect of emotional ELE, as well as the moderating role of AB, on the relationship between FLB and ELE. The significance of the indirect impacts was assessed using a bias-corrected bootstrap approach, which generated 1,000 bootstrap samples with 95% confidence intervals (CI) (Cheung & Rensvold, 2002). An impact was considered significant if its CI did not include zero.

4. Results

4.1. Measurement models

We determined that the partial bifactor ESEM solution is the best solution for the ELE scale (see supplementary). This decision was based on several reasons: (1) the partial bifactor ESEM model indicated a better model fit and higher measurement quality, (2) the latent variables in the partial bifactor ESEM solution were well-established, as evidenced by high loadings, (3) the partial bifactor ESEM solution had weak cross-loadings, and, finally, (4) the partial bifactor ESEM solution had superior composite omega and hierarchical omega values. Overall, the analysis of measurement invariance presented evidence supporting the consistency of the ELE scale across different genders.

Regarding FLB, we determined that the bifactor ESEM solution was the best model. We found that the factor loadings for both the specific and G-factors were moderate to high ($\lambda > 0.30$), while the cross-loadings were low ($\lambda < 0.35$). The items' uniqueness was acceptable ($\delta > 0.10$ but < 0.90). According to this evidence, we determined that the bifactor ESEM solution can be the best measurement model for FLB. The analysis of measurement invariance across gender presented data supporting the consistency of the FLB scale across different genders. Finally, the unidimensional academic buoyancy measurement solution had excellent model fit and reliability (see supplementary materials for details).

4.2. Structural models

The model fit information and Pearson correlation of the structural model are displayed in Table 1 and Table 2, respectively. As indicated in Table 1, the structural

model showed a good fit with the data. Furthermore, Table 2 shows that FLB had strong negative correlations with all types of engagement, while AB was positively correlated with all forms of engagement. Strong correlations among the different types of engagement were also identified.

Table 1 Fit indices for the structural model

Structural model	χ^2	df	CFI	TLI	RMSEA	SRMR
FLB→EMO*AB→ELE	2318.640	967	.952	.941	.047	.025

Note. FLB = foreign language boredom; ELE = English language engagement; EMO = emotional engagement; AB = academic buoyancy

Table 2 Pearson correlations among different factors

	FLB	LCS	DMR	ELE	BEH	EMO	COG	AGE	AB
FLB	-								
LCS	.75***	-							
DMR	.78***	.49***	-						
ELE	-.60***	.14	-.51***	-					
BEH	-.71***	-.49***	-.09	.79***	-				
EMO	-.71***	-.60***	-.54***	.73***	.77***	-			
COG	-.44**	-.24*	-.17	.76***	.72***	.66***	-		
AGE	-.58***	-.19*	-.18	.72***	.56***	.59***	.67***	-	
AB	-.72***	-.41**	-.44**	.63***	.70***	.68***	.76***	.75***	-

Note. FLB = foreign language boredom; LCS = lack of challenge and satisfaction; DMR = disengagement, monotony, and repetitiveness; ELE = English language engagement; BEH = behavioral engagement; EMO = emotional engagement; COG = cognitive engagement; AGE = agentic engagement; AB = academic buoyancy

With regard to direct effects (see Table 3), the results indicated that there were various significant paths among variables. Firstly, the G-factor of ELE in students was found to be predicted by their G-factor of FLB (β = -.338) and by S-factors of DMR (β = -.251), but there was no direct significant correlation between the S-factors of LCS and the G-factor of ELE. In addition, the learners' G-factor of FLB had a significant correlation with the S-factors of behavioral ELE (β = -.468), emotional ELE (β = -.454), cognitive ELE (β = -.177), and agentic ELE (β = -.321). Furthermore, it was discovered that increased levels of LSC were correlated to decreased levels of behavioral ELE (β = -.222) and emotional ELE (β = -.367). Furthermore, the study found that DMR was negatively correlated with emotional ELE (β = -.277) and agentic ELE (β = -.101), but not behavioral and cognitive ELE. Moreover, the results revealed that emotional ELE had direct correlations with the following factors: (1) G-FLB (β = -.454); (2) G-ELE (β = .377); (3) S-factor of LCS (β = .151); (4) S-factor of DMR (β = -.183); (5) S-factor of behavioral ELE (β = .364); (6) S-factor of cognitive ELE (β = .456); and (7) S-factor of agentic ELE (β = .462).

Table 3 Standardized regression coefficient between S- and G-Factors of FLB and ELE

	G-GB	S-LCS	S-DMR	AB
G-ELE	-.338***	.057	-.251	.377***
S-BEH	-.468***	-.222***	-.003	.464***
S-EMO	-.454***	-.367***	-.277***	.442***
S-COG	-.177**	-.041	-.021	.556***
S-AGE	-.321***	-.023	-.027	.562***
AB	-.502***	.151***	-.183**	-

Note. S = specific factor; G = global factor; FLB = foreign language boredom; LCS = lack of challenge and satisfaction; DMR = disengagement, monotony, and repetitiveness; ELE = English language engagement; BEH = behavioral engagement, EMO = emotional engagement; COG = cognitive engagement; AGE = agentic engagement; AB = academic buoyancy

The study revealed that, apart from the direct impact of the G-factor of FLB on students' G-factor of ELE, there were various negative indirect relationships mediated by a specific facet of emotional ELE. These relationships were validated by estimating CIs for the indirect paths, which did not include the value of 0 (see Table 4). These relationships were observed between G-FLB and G-ELE, as well as between G-FLB and behavioral ELE and between G-FLB and cognitive ELE. The results were as follows: (a) G-FLB → emotional ELE → G-ELE: indirect effect = -.096; (b) G-FLB → emotional ELE → behavioral ELE: indirect effect = -.064; (c) G-FLB → emotional ELE → cognitive ELE: indirect effect = -.053.

Additionally, the S-factor of LCS showed negative indirect relationships with G-ELE as well as with the S-factors of behavioral ELE and agentic ELE. Specifically, the following indirect effects were observed: a) LCS → emotional ELE → G-ELE: indirect effect = -.073; (B) LCS → emotional ELE → cognitive ELE: indirect effect = -.066; and (c) LCS → emotional ELE → agentic ELE: indirect effect = -.055. Focusing on the S-factor of DMR, the findings indicated one indirect effect through emotional ELE mediation: DMR → emotional ELE → G-ELE: indirect effect = -.118.

Table 4 Indirect relationship between S- and G-Factors of FLB and ELE through the mediation of emotional ELE

Indirect effects	*β*	*p*	SE	*95%* confidence level	
				Lower limit	Upper limit
G-ELB → EMO → G-ELE	-.096	< .001	.018	-.158	-.058
G-ELB → EMO → S-BEH	-.064	< .001	.016	-.122	-.026
G-ELB → EMO → S-COG	-.053	< .001	.017	-.116	-.024
S-LCS → EMO → G-ELE	-.073	< .001	.013	-.135	-.043
S-LCS → EMO → S-COG	-.066	< .001	.015	-.127	-.018
S-LCS → EMO → S-AGE	-.055	< .001	.019	-.102	-.012
S-DMR → EMO → G-ELE	-.118	< .001	.011	-.178	-.066

Note. FLB = foreign language boredom; LCS = lack of challenge and satisfaction; DMR = disengagement, monotony, and repetitiveness; AB = academic buoyancy; ELE = English language engagement; BEH = behavioral engagement, EMO = emotional engagement, COG = cognitive engagement; AGE = agentic engagement; S = specific factor; G = global factor

The model also included three interaction terms (G-FLB*AB, LCS*AB, DMR*AB). A statistically significant interaction was shown for G-FLB*AB and LCS*AB (see Table 5), but not for DMR*AB. To probe the LCS*AB interactions, unstandardized path coefficients were estimated at ±1 SD buoyancy (see Figure 1). At +1 SD buoyancy negative relations were shown between LCS and G-ELE, between LCS and behavioral ELE, and between LCS and agentic-ELE. These relations were weaker at mean buoyancy, and at -1 SD buoyancy became nonsignificant for all four paths, suggesting that lower levels of AB may moderate against the negative effects of lack of challenge and satisfaction on engagement.

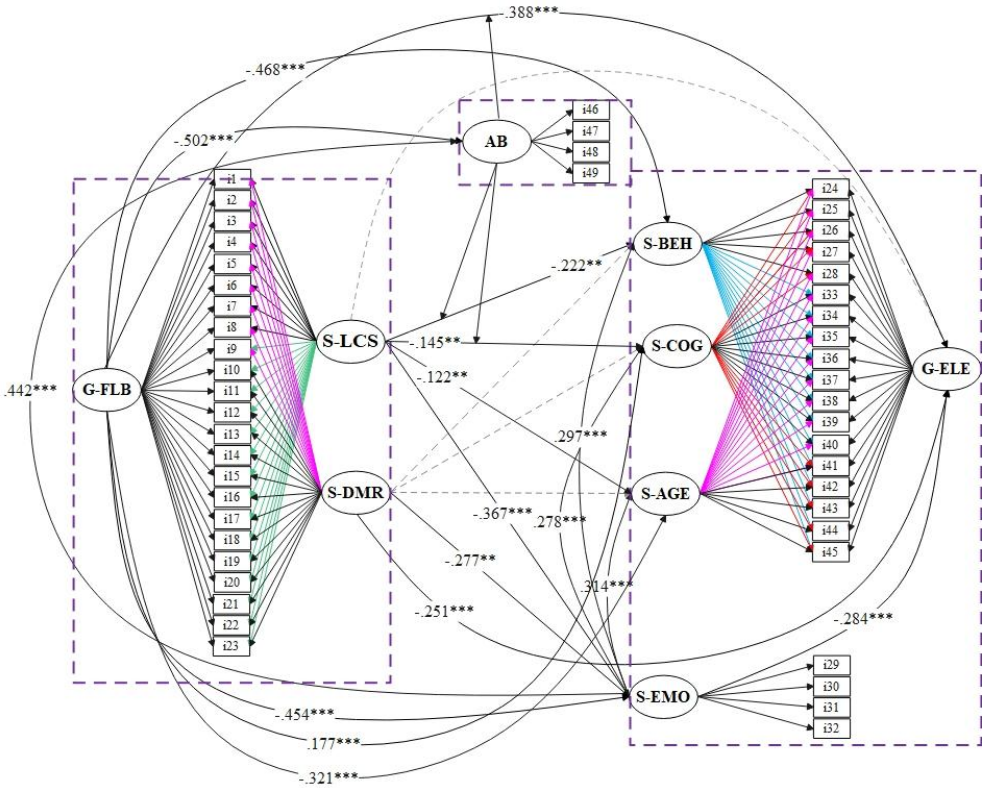

Figure 1 Relationship between specific and Global Factors of FLB, academic buoyancy, and ELE (FLB = foreign language boredom, LCS = lack of challenge and satisfaction; DMR = disengagement, monotony, and repetitiveness; AB [moderator] = academic buoyancy; ELE = English language engagement; BEH = behavioral engagement, EMO [mediator] = emotional engagement, COG = cognitive engagement, AGE = agentic engagement, S = specific factor; G = global factor)

Table 5 Unstandardized path coefficients for the boredom as a predictor of engagement through mediation effect of emotional engagement and interactions between AB and LCS

Path	AB	*β*	*p*	SE
G-FLB*AB→ EMO → G-ELE	+SD	-2.11	< .001	1.22
	=SD	-0.98	< .001	.41
	-SD	0.75	.141	1.36
S-LCS*AB → EMO → S-BEH	+SD	-2.44	< .001	1.63
	=SD	-.82	< .001	.61
	-SD	.84	.543	1.24
S-LCS*AB → EMO → S-COG	+SD	-2.67	< .001	1.59
	=SD	-.95	< .001	.47
	-SD	.88	.284	1.34

5. Discussion

The primary objective of the present study was to examine the association between FLB and ELE using the bifactor-ESEM approach. This method allows for a comprehensive analysis of the global and specific components of FLB and ELE. The secondary objective of the study was to explore the underlying psychological processes that elucidate the interdependencies between FLB and ELE. This was achieved by investigating the impact of academic buoyancy and emotional ELE in the process. The findings of the current study are discussed in two sections. In the first section, we discuss the results of the study in terms of the dimensionality of FLB and ELE, and the association between the global and specific factors of FLB and ELE. In the second section, the mediating roles of emotional engagement and the moderating role of AB are considered.

5.1. The relations between the G- factor and S-factors of FLB and ELE

To begin with, the findings of our study confirmed that a bifactor-ESEM solution for FLB is more accurate, emphasizing the need to accurately separate students' global levels of boredom from the distinct characteristics associated with each subdomain of boredom. The outcomes contribute to the growing literature advocating the efficacy of a bifactor-ESEM solution for the FLB construct in the field of applied linguistics (Kruk, Pawlak, Elahi Shirvan, et al., 2023; Pawlak, Kruk, et al., 2023).

Furthermore, our findings also confirmed the significance of a partial bifactor-ESEM representation of ELE that enables an accurate differentiation of the G-factor of ELE from the S-factors of agentic, behavioral, cognitive, and emotional

ELE. This finding provides further evidence in favor of the need to use a partial bifactor model to describe academic engagement, as suggested by prior research conducted by Dierendonck et al. (2023). By stating that the partial bifactor solution best represents the underlying structure of ELE, we indicated that the S-factor of emotional engagement has been determined to be distinct from the other S-factors as well as from the G-factor. To put it simply, while the agentic, behavioral, and cognitive aspects of ELE have been demonstrated to possess both global and specific characteristics, such characteristics were not found to be present in the emotional aspect.

This implies that emotional ELE has the ability to create a productive environment in which other forms of engagement can thrive. Specifically, when students experience emotional connection and receive support in the classroom, they are more likely to feel at ease expressing themselves, sharing their thoughts (i.e., emotional-ELE), and subsequently actively participating in cognitive activities (i.e., cognitive-ELE); they also tend to be more motivated to actively engage in class activities, take responsibility for their own learning (i.e., agentic engagement), and exhibit positive behaviors that facilitate learning (i.e., behavioral engagement). These findings are consistent with previous research and theoretical frameworks that highlight the distinct nature of emotional engagement in comparison to other aspects of this construct (Dierendonck et al., 2023; Skinner et al., 2008). Recognizing the significance of emotional engagement implies that educators should establish a classroom environment that is supportive and nurturing, where students feel emotionally connected. This can be achieved by fostering positive relationships, providing emotional support, and cultivating a culture of inclusivity and empathy (Tsang & Dewaele, 2023).

A major advantage of the bifactor-ESEM framework lies in its capacity to enable the simultaneous investigation of outcomes related to both global and specific constructs (Myers et al., 2014). When it comes to the relationships between FLB and ELE, our findings initially revealed significant relationships at both the global and specific levels. The results at global levels showed a significant correlation between the G-factor of FLB and the G-factor of ELE. This finding confirms previous research that used conventional analytical methods and emphasizes the significance of the debilitative effects of FLB for ELE (e.g., Noels et al., 2019; Tsang & Dewaele, 2023; Zhao & Yang, 2022). Additionally, G-FLB was linked to decreased levels of behavioral, emotional, cognitive, and agentic ELE. According to the CVT, boredom undermines engagement by reducing both the perceived control over the task and the subjective value attached to it. Consequently, learners are less likely to exhibit active involvement (behavioral engagement), emotional investment (emotional engagement), cognitive effort (cognitive engagement), and self-regulation (agentic engagement) in tasks or activities that they find boring. This

highlights the importance of addressing boredom in educational settings to foster a more positive and conducive learning environment where students feel motivated, interested, and actively engaged in their learning pursuits.

Moreover, the findings underscore the importance of taking into account specific factors of FLB when examining its impact on different aspects of ELE. This reveals that two S-factors of FLB (i.e., DMR and LCS) can have different effects on the G-factor and S-factor of ELE. First, the absence of a significant correlation between LCS and G-ELE suggests that lack of task challenge and satisfaction may not directly influence overall engagement levels. However, it can significantly impact specific dimensions of engagement (i.e., behavioral, emotional, and agentic engagement). Secondly, the negative correlation between DMR and G-ELE highlights the detrimental effects of disengagement, monotony, and repetitiveness on overall engagement levels. This suggests the need to address this dimension of the FLB factor in order to foster a more captivating learning environment. Lastly, the significant correlation between DMR and emotional ELE indicates that emotional reactions play a critical role in students' responses to feelings of dissatisfaction, annoyance, tedium, and repetition in the language classroom. The different effects of LCS and DMR can be understood by considering their distinct functions. LCS, as a proactive and searching emotion (Pawlak, Kruk, et al., 2020), may serve as a self-regulatory signal to pursue new objectives. Thus, a lack of challenge and satisfaction in language learners may invoke an inquisitive state that triggers a drive to seek out novel experiences, even if they are negative (Bench & Lench, 2019). In such situations, boredom may play an activating role, resulting in no correlation with global ELE and small negative correlations with emotional, behavioral, and agentic engagement. On the other hand, DMR, as a reactive emotion with low arousal, can be a more damaging form of boredom as it can lead to indifference and apathy (Putwain et al., 2023). The strong influence of DMR on both the G-factor and emotional ELE can be attributed to this particular function of DMR.

The results imply that educators should carefully consider the perceptions of students regarding task challenge and satisfaction, as these perceptions have a significant impact on their levels of engagement, particularly in terms of behavioral and emotional engagement. The development of stimulating and challenging learning environments can contribute to enhancing students' engagement and emotional responses, leading to more positive learning experiences (Kruk, Pawlak, Elahi Shirvan, et al., 2023; Liu et al., 2022; Tsang & Dewaele, 2023). Additionally, it is important to address feelings of disengagement, monotony, and repetitiveness in learning activities in order to prevent adverse effects on overall levels of engagement.

5.2. The mediating role of emotional ELE and the moderating role of AB

The current study demonstrates the mediating influence of emotional ELE on the association between FLB and ELE. In general, an increase in FLB, whether on a global or specific level, will in general lessen emotional engagement, which consequently influences different aspects of ELE, including behavioral, cognitive, and agentic ELE. These results underscore the significance of tending to emotional engagement in advancing language engagement in language learning settings. The findings of the current study confirm Skinner et al.'s (2008) assumption, according to which different aspects of school engagement, such as global, behavioral, and cognitive features, are influenced by emotional engagement. This finding further confirms Dierendonck et al.'s (2023) results, which demonstrated a mediating role of emotional engagement in the association between motivation and engagement.

The findings suggest that language educators should acknowledge the significance of promoting emotional engagement among learners. Recognizing the importance of emotional engagement in language learning emphasizes the necessity for teaching methods that not only concentrate on language content but also consider learners' emotional experiences and well-being (Alrabai & Dewaele, 2023; Dewaele et al., 2019; Elahi Shirvan et al., 2021; Mercer & MacIntyre, 2014; Zhang et al., 2022). Furthermore, teachers can enhance the emotional engagement of language learners by establishing supportive and inclusive learning environments that foster positive emotional experiences (Liu & Li, 2023; Li et al., 2023; Tsang & Dewaele, 2023; Zhao & Yang, 2022). This encompasses establishing a positive relationship with students, creating opportunities for meaningful communication, and recognizing and affirming learners' feelings throughout the process of acquiring language (Dewaele et al., 2019). Future research could prioritize the development of interventions designed to improve emotional involvement.

The research outcomes further suggest a significant and negative moderating effect of AB on the association between the G-FLB and ELE. This implies that students with higher levels of AB may experience a weaker negative impact of FLB on their overall engagement levels compared to those with lower levels of AB. This result is in line with previous studies indicating that more buoyant learners are more likely to make progress and achieve desirable outcomes, while those with low AB may exhibit passivity and lack of commitment to learning (Putwain et al., 2022, 2023). This finding can be interpreted in light of the CVT. Based on this theory, students are more inclined to engage in a task when they perceive it as meaningful and believe they have control over the outcomes. Boredom may arise when a task lacks perceived value or when individuals feel a lack of control (Pekrun et al., 2010). Students with high AB are better equipped to view challenges, such as boredom, as manageable and presenting opportunities

for growth rather than insurmountable obstacles (Liu et al., 2022; Putwain et al., 2022). This positive attitude facilitated by AB can serve as a buffer against the negative impact of boredom on engagement, thereby moderating the relationship between FLB and ELE. Thus, educators should recognize the role of AB in mitigating the detrimental effects of boredom on engagement and propose strategies accordingly to foster students' resilience and positive attitudes towards academic challenges.

When examining the LCS*AB interactions, the findings suggest that lower levels of academic buoyancy may buffer against the negative effects of a lack of challenge and satisfaction on engagement. These results highlight the importance of academic buoyancy in moderating the relationship between LCS and various dimensions of engagement among learners. Higher levels of buoyancy appear to mitigate the detrimental effects of perceived lack of challenge and satisfaction on engagement, while lower levels of buoyancy may exacerbate these effects. The results of this study are consistent with previous studies indicating that students with high AB are better equipped to view challenges, such as boredom, as manageable and opportunities for growth rather than insurmountable obstacles (Liu et al., 2022; Putwain et al., 2022). These findings underscore the significance of fostering academic buoyancy as a means to promote meaningful engagement and positive outcomes in the learning process, particularly in contexts where learners may encounter challenges such as boredom or dissatisfaction with the level of challenge presented.

6. Conclusion

This study presented the application of the bifactor-ESEM approach for researchers in applied linguistics. It illustrated how this approach can enhance the accuracy of testing the relationships between FLB and ELE by considering both global and specific levels of FLB and ELE. Our findings provide valuable insights into the usefulness of this approach to analyzing the relationships between several variables with a multifaceted structure. The findings of the present study provide a comprehensive understanding of the complicated mechanisms that link FLB and ELE. Specifically, this study particularly examined and highlighted the crucial role of emotional ELE in the links between FLB and ELE rather than global ELE. Furthermore, it elucidated the relevance of academic buoyancy in moderating the connection between FLB and ELE.

Despite these contributions, several limitations should be acknowledged. A primary concern is the cross-sectional design, which inherently restricts the ability to draw causal inferences. While the study suggests that G-factors and S-factors of FLB may predict ELE and vice versa, the cross-sectional nature prevents

a definitive evaluation of these relationships over time. As a result, it remains unclear whether FLB influences ELE or if the relationship is reciprocal or possibly influenced by an unexamined third variable. This limitation highlights the need for longitudinal research to validate the observed relationships and establish their directionality. Longitudinal studies would allow more nuanced investigation of the causality and developmental patterns of FLB and ELE, offering insights into how these constructs evolve and interact over time. Another limitation lies in the potential lack of generalizability. The specific sample used in this study may not reflect the broader population of language learners. Variations in cultural, linguistic, or educational contexts could lead to different interactions between FLB and ELE. Therefore, the findings, while significant, may not apply universally. To address this shortcoming, future research should seek to replicate the study across diverse populations, thereby enhancing the generalizability of the results and providing a more comprehensive picture of how FLB and ELE interact in various settings.

One of the most crucial directions for future research is the implementation of longitudinal studies. Such studies would allow tracking of changes in FLB and ELE and in their subdomains over time, which is essential for establishing causality. By following participants over an extended period, researchers can observe how FLB and ELE develop and influence each other at different stages of language learning. This would enable a more precise examination of the directionality. Additionally, to ensure the results are generalizable across different contexts, future research should include participants from a variety of cultural, linguistic, and educational backgrounds. This would help to determine whether the observed relationships between FLB and ELE hold true across different settings or if they are influenced by contextual factors. Moreover, by including diverse populations, researchers can explore how cultural norms, educational systems, and language learning environments impact the dynamics between FLB and ELE, potentially uncovering variations that could inform more tailored educational strategies. Finally, future research should involve intervention-based studies that would apply the insights gained from the relationship between FLB and ELE to real-world educational settings. While understanding the theoretical link between these constructs is valuable, the practical implications remain underexplored. By designing and testing interventions aimed at enhancing FLB or ELE, researchers can determine whether targeted strategies can improve L2 learning outcomes. For example, interventions that focus on building students' resilience and emotional engagement in language learning could be developed and assessed for their effectiveness. Such studies would not only validate the theoretical models proposed but also provide educators with evidence-based tools to support language learners more effectively.

References

Alamer, A., & Marsh, H. (2022). Exploratory structural equation modeling in second language research: An applied example using the dualistic model of passion. *Studies in Second Language Acquisitio*n, *44*(5), 1477-1500. https://doi.org/10.1017/s0272263121000863

Alrabai, F., & Algazzaz, W. (2024). The influence of teacher emotional support on language learners' basic psychological needs, emotions, and emotional engagement: Treatment-based evidence. *Studies in Second Language Learning and Teaching*, *14*(3), 453-482. https://doi.org/10.14746/ssllt.39329

Alrabai, F., & Dewaele, J.-M. (2023). Transforming the EMPATHICS model into a workable E4MC model of language learner well-being. *Journal for the Psychology of Language Learning*, *5*(1), 1-14. https://doi.org/10.52598/jpll/5/1/5

Asparouhov, T., & Muthén, B. (2009). Exploratory structural equation modeling. *Structural Equation Modeling: A Multidisciplinary Journal*, *16*(3), 397-438. https://doi.org/10.1080/10705510903008204

Aubrey, S. (2022). Dynamic engagement in second language computer-mediated collaborative writing tasks: Does communication mode matter? *Studies in Second Language Learning and Teaching*, *12*(1), 59-86. https://doi.org/10.14746/ssllt.2022.12.1.4

Bench, S. W., & Lench, H. C. (2019). Boredom as a seeking state: Boredom prompts the pursuit of novel (even negative) experiences. *Emotion*, *19*(2), 242-254.

Cheung, G. W., & Rensvold, R. B. (2002). Evaluating goodness-of-fit indexes for testing measurement invariance. *Structural Equation Modeling*, *9*, 233-255.

Deci, E. L., & Ryan, R. M. (1985). The general causality orientations scale: Self-determination in personality. *Journal of Research in Personality*, *19*(2), 109-134. https://doi.org/10.1016/0092-6566(85)90023-6

Dewaele, J.-M., Chen, X., Padilla, A. M., & Lake, J. (2019). The flowering of positive psychology in foreign language teaching and acquisition research. *Frontiers in Psychology*, *10*, 2128. https://doi.org/10.3389/fpsyg.2019.02128

Dewaele, J.-M., & Li, C. (2020). Teacher enthusiasm and students' social-behavioral learning engagement: The mediating role of student enjoyment and boredom in Chinese EFL classes. *Language Teaching Research*, *25*(6), 922-945. https://doi.org/10.1177/13621688211014538

Dierendonck, C., Tóth-Király, I., Morin, A. J. S., Kerger, S., Milmeister, P., & Poncelet, D. (2023). Testing associations between global and specific levels of student academic motivation and engagement in the classroom. *The Journal of Experimental Education*, *91*(1), 101-124. https://doi.org/10.1080/00220973.2021.1913979

Dörnyei, Z., & Dewaele, J.-M. (2023). *Questionnaires in second language research: Construction, administration, and processing*. Routledge.

Elahi Shirvan, M., Taherian, T., Shahnama, M., & Yazdanmehr, E. (2021). A longitudinal study of foreign language enjoyment and L2 grit: A latent growth curve modeling. *Frontiers in Psychology*, *12*, 720326. https://doi.org/10.3389/fpsyg.2021.720326

Elahi Shirvan, M., Taherian, T., Pawlak, M., & Kruk, M. (2024a). The bright side and the dark side of foreign language boredom in learner engagement: A moderated mediation model of foreign language playfulness and boredom-coping strategies. *Language Learning Journal*. https://doi.org/10.1080/09571736.2024.2384484

Elahi Shirvan, M., Taherian, T., Pawlak, M., & Kruk, M. (2024b). The dynamics of L2 teacher boredom and their link to creativity: A ban or boon for boredom. *International Journal of Applied Linguistics*. https://doi.org/10.1111/ijal.12595

Elpidorou, A. (2018). The bored mind is a guiding mind: Toward a regulatory theory of boredom. *Phenomenology and the Cognitive Sciences*, *17*(3), 455-484. https://doi.org/10.1007/s11097-17-9515-1

Goetz, T., Frenzel, A. C., Hall, N. C., Nett, U. E., Pekrun, R., & Lipnevich, A. A. (2014). Types of boredom: An experience sampling approach. *Motivation and Emotion*, *38*(3), 401-419. https://doi.org/10.1007/s11031-013-9385-y

Hiver, P., Al-Hoorie, A. H., Vitta, J. P., & Wu, J. (2024). Engagement in language learning: A systematic review of 20 years of research methods and definitions. *Language Teaching Research*, *28*(1), 201-230. https://doi.org/10.1177/13621688211001289

Kruk, M. (2016). Variations in motivation, anxiety and boredom in learning English in Second Life. *The EuroCALL Review*, *24*(1), 25-39. https://doi.org/10.4995/eurocall.2016.5693

Kruk, M., Elahi Shirvan, M., Pawlak, M., Taherian, T., & Yazdanmehr, E. (2021). A longitudinal study of the subdomains of boredom in practical English language classes in an online setting: A factor of curves latent growth modeling. *Journal of Multilingual and Multicultural Development*, *45*(5), 1633-1647. https://doi.org/10.1080/01434632.2021.2006404

Kruk, M., Elahi Shirvan, M., Pawlak, M., Taherian, T., & Yazdanmehr, E. (2022). Potential sources of foreign language learning boredom: A Q methodology study. *Studies in Second Language Learning and Teaching*, *12*(1), 37-58. https://doi.org/10.14746/ssllt.2022.12.1.3

Kruk, M., Pawlak, M., Elahi Shirvan, M., & Soleimanzadeh, S. (2023). Revisiting boredom in practical English language classes via exploratory structural equation modeling. *Research Methods in Applied Linguistics*, *2*(1), 100038. https://doi.org/10.1016/j.rmal.2022.100038

Kruk, M., Pawlak, M., Elahi Shirvan, M., Taherian, T., & Yazdanmehr, E. (2022). A longitudinal study of foreign language enjoyment and boredom: A latent

growth curve modeling. *Language Teaching Research*. https://doi.org/10.1177/13621688221082303

Kruk, M., Pawlak, M., Taherian, T., Yüce, E., Elahi Shirvan, M., & Barabadi, E. (2023). When time matters: Mechanisms of change in a mediational model of foreign language playfulness and L2 learners' emotions using latent change score mediation model. *Studies in Second Language Learning and Teaching*, *13*(1), 39-69. https://doi.org/10.14746/ssllt.37174

Li, X., Duan, S., & Liu, H. (2023). Unveiling the predictive effect of students' perceived EFL teacher support on academic achievement: The mediating role of academic buoyancy. *Sustainability*, *15*, 10205. https://doi.org/10.3390/su151310205

Liu, H., & Li, X. (2023). Unravelling students' perceived EFL teacher support. *System*, *115*, 103048. https://doi.org/10.1016/j.system.2023.103048

Liu, H., Li, J., & Fang, F. (2022). Examining the complexity between boredom and engagement in English learning: Evidence from Chinese high school students. *Sustainability*, *14*(24), 16920. https://doi.org/10.3390/su142416920

Liu, H., Zhong, Y., Chen, H., & Wang, Y. (2023). The mediating roles of resilience and motivation in the relationship between students' English learning burnout on engagement: A conservation-of-resources perspective. *International Review of Applied Linguistics in Language Teaching*. https://doi.org/10.1515/iral-2023-0089.

Martin, A. J., & Marsh, H. W. (2008). Academic buoyancy: Towards an understanding of students' everyday academic resilience. *Journal of School Psychology*, *46*(1), 53-83. https://doi.org/10.1016/j.jsp.2007.01.002

Mercer, S., & Dörnyei, Z. (2020). *Engaging language learners in contemporary classrooms*. Cambridge University Press.

Mercer, S., & MacIntyre, P. D. (2014). Introducing positive psychology to SLA. *Studies in Second Language Learning and Teaching*, *4*(2), 153-172. https://doi.org/10.14746/ssllt.2014.4.2.2

Myers, N. D., Martin, J. J., Ntoumanis, N., Celimli, S., & Bartholomew, K. J. (2014). Exploratory bifactor analysis in sport, exercise, and performance psychology: A substantive-methodological synergy. *Sport, Exercise, and Performance Psychology*, *3*(4), 258-272. https://doi.org/10.1037/spy0000015

Mohammad Hosseini, H., Fathi, J., Derakhshesh, A., & Mehraein, S. (2022). A model of classroom social climate, foreign language enjoyment, and student engagement among English as a foreign language learners. *Frontiers in Psychology*, *13*, 933842. https://doi.org/10.3389/fpsyg.2022.933842

Morin, A. J., Arens, A. K., Tran, A., & Caci, H. (2015). Exploring sources of construct-relevant multidimensionality in psychiatric measurement: A tutorial and illustration using the Composite Scale of Morningness. *International Journal of Methods in Psychiatric Research*, *25*(4), 277-288. https://doi.org/10.1002/mpr.1485

Muthén, L. K., & Muthén, B. (2017). *Mplus user's guide* (8th ed.). Muthén & Muthén.

Noels, K. A., Lascano, D. I. V., & Saumure, K. (2019). The development of self-determination across the language course: Trajectories of motivational change and the dynamic interplay of psychological needs, orientations, and engagement. *Studies in Second Language Acquisition*, *41*(4), 821-851. https://doi.org/10.1017/s0272263118000189

Pawlak, M., Kruk, M., Csizér, K., & Zawodniak, J. (2023). Investigating in-class and after-class boredom among advanced learners of English: Intensity, interrelationships and learner profiles. *Applied Linguistics Review*. https://doi.org/10.1515/applirev-2022-0150

Pawlak, M., Kruk, M., Zawodniak, J., & Pasikowski, S. (2020). Investigating factors responsible for boredom in English classes: The case of advanced learners. *System*, *91*, 102259. https://doi.org/10.1016/j.system.2020.102259

Pawlak, M., Solhi, M., Elahi Shirvan, M., Kruk, M., & Taherian, T. (2023). Revisiting after-class boredom via exploratory structural equation modeling. *International Review of Applied Linguistics in Language Teaching*. https://doi.org/10.1515/iral-2022-0151

Pawlak, M., Zawodniak, J. & Kruk, M. (2020). *Boredom in the foreign language classroom: A micro-perspective*. Springer.

Pekrun, R., Goetz, T., Daniels, L. M., Stupnisky, R. H., & Perry, R. P. (2010). Boredom in achievement settings: Exploring control-value antecedents and performance outcomes of a neglected emotion. *Journal of Educational Psychology*, *102*(3), 531-549. https://doi.org/10.1037/a0019243

Putwain, D. W., Jansen in de Wal, J., & van Alphen, T. (2023). Academic buoyancy: Overcoming test anxiety and setbacks. *Journal of Intelligence*, *11*(3), 42. https://doi.org/10.3390/jintelligence11030042

Putwain, D. W., Wood, P., & Pekrun, R. (2022). Achievement emotions and academic achievement: Reciprocal relations and the moderating influence of academic buoyancy. *Journal of Educational Psychology*, *114*(1), 108-126. https://doi.org/10.1037/edu0000637

Reeve, J., & Tseng, C. M. (2011). Agency as a fourth aspect of students' engagement during learning activities. *Contemporary Educational Psychology*, *36*(4), 257-267. https://doi.org/10.1016/j.cedpsych.2011.05.002

Skinner, E., Furrer, C., Marchand, G., & Kindermann, T. (2008). Engagement and disaffection in the classroom: Part of a larger motivational dynamic? *Journal of Educational Psychology*, *100*(4), 765-781. https://doi.org/10.1037/a00128403

Taherian, T., Elahi Shirvan, M., Yazdanmehr, E., Kruk, M., & Pawlak, M. (2024). A longitudinal analysis of informal digital learning of English, willingness to communicate and foreign language boredom: A latent change score mediation

model. *The Asia-Pacific Education Researcheri*, *33*, 997-1010. https://doi.org/10.1007/s40299-023-00751-z

Tsang, A., & Dewaele, J.-M. (2023). The relationships between young FL learners' classroom emotions (anxiety, boredom, & enjoyment), engagement, and FL proficiency. *Applied Linguistics Review*. https://doi.org/10.1515/applirev-2022-0077

Wang, Y. & Liu, H. (2022). The mediating roles of boredom and buoyancy in the relationship between autonomous motivation and engagement among Chinese senior high school EFL learners. *Frontiers in Psychology*, *13*, 992279. https://doi.org/10.3389/fpsyg.2022.992279

Westgate, E. C. (2019). Why boredom is interesting. *Current Directions in Psychological Science*, *29*(1), 33-40. https://doi.org/10.1177/0963721419884309

Yun, S., Hiver, P., & Al-Hoorie, A. H. (2018). Academic buoyancy: Exploring learners' everyday resilience in the language classroom. *Studies in Second Language Acquisition*, *40*(4), 805-830. https://doi.org/10.1017/s0272263118000037

Zhang, Z., Gao, X., Liu, T., & Lee, C. B. (2022). Language learners' emotion regulation and enjoyment in an online collaborative writing program. *Studies in Second Language Learning and Teaching*, *12*(3), 459-481. https://doi.org/10.14746/ssllt.2022.12.3.6

Zhao, Y., & Yang, L. (2022). Examining the relationship between perceived teacher support and students' academic engagement in foreign language learning: Enjoyment and boredom as mediators. *Frontiers in Psychology*, *13*, 987554. https://doi.org/10.3389/fpsyg.2022.987554