Education Insights

Article

Independent, Combined, and Interactive Effects of Foreign Language Writing Boredom and Enjoyment on Writing Strategy Use

Nanxuan Li [1,*] and Xia Hong [2]

[1] Faculty of Arts and Humanities, University of Southampton, Southampton, England, SO171BJ, United Kingdom
[2] Department of Basic Education, Qiannan Preschool Education College for Nationalities, Guiding, Guizhou, 551300, China
* Correspondence: Nanxuan Li, Faculty of Arts and Humanities, University of Southampton, Southampton, England, SO171BJ, United Kingdom

Abstract: This study investigated the independent, combined, and interactive effects of foreign language writing boredom (FLWB) and foreign language writing enjoyment (FLWE) on English writing strategy (EWS) use among 259 Chinese undergraduate EFL students, providing novel perspectives on the emotion–writing strategy relationships. Structural equation modeling (SEM) was employed to examine how FLWB and FLWE predicted four types of EWS use: metacognition, revision, L1 use, and L2 use strategies. Independent predictive analyses showed that FLWB negatively predicted metacognition, revision, and L2 use strategies, whereas FLWE positively predicted all four strategy types. In the combined model, FLWE emerged as the dominant predictor across all four strategy categories, and the effects of FLWB were no longer significant. The interaction analysis further revealed that higher levels of FLWE amplified the negative impact of FLWB on metacognitive strategy use in the moderation model. These findings highlighted the importance of cultivating positive emotional experiences and mitigating boredom in L2 writing contexts. They also underscored the need to support learners' emotional regulation skills to facilitate strategic behaviors. Theoretically, the findings provide empirical evidence for assumptions of control-value theory about effects of achievement emotions on strategy use and the unique effects of positive emotions proposed by broaden-and-build theory in Chinese L2 writing environment. Also, this study revealed boundary conditions for broaden-and-build theory about undo hypothesis in the context of Chinese undergraduate EFL writing.

Keywords: foreign language writing boredom; foreign language writing enjoyment; English writing strategy; Chinese undergraduate students; control-value theory; broaden-and-build theory

Published: 16 January 2026

1. Introduction

In China, English remains the primary foreign language taught across educational contexts [1]. With increasing globalization, English writing has gained prominence as a key academic and professional skill, contributing to learners' overall language proficiency and enabling them to express ideas and demonstrate knowledge [2]. At the undergraduate level, writing ability is regarded as an important indicator of students' English competence and is essential for academic, communicative, and professional needs. However, within an exam-oriented system, many university students must pass tests such as the CET-4 [1]. Confronted with L2 writing tasks and examinations, learners may

experience complex emotions and employ diverse strategies, making it necessary to understand their writing emotions and strategy use for more effective pedagogy and psychological support.

In the field of Second language acquisition (SLA), the Second language writing anxiety inventory (SLWAI) is the earliest instruments to be formally developed and psychometrically validated among different L2 writing emotions because of Cheng's research [3]. Then, Foreign language writing boredom (FLWB) and Foreign language writing enjoyment (FLWE) were developed and validated by Li et al. [4]. In SLA, L2 writing research often focuses on writing strategies, which can be viewed as a subtype of language learning strategies because they involve conscious, goal-oriented actions [5]. Emotion is one of the important factors influencing L2 writing strategy use [5-7]. In existing research on foreign language writing emotions and writing strategy use, foreign language writing anxiety and enjoyment have received the most scholarly attention, whereas studies examining the relationship between FLWB and L2 writing strategies remain comparatively limited. Additionally, positive and negative emotions should be researched simultaneously because they are like the right and left feet of EFL learners [8]. Positive emotions may moderate the negative effects brought by negative emotions [9]. However, empirical research on foreign language learning emotions has rarely examined the interactive effects between different emotions.

To address these gaps, the present study investigates FLWB and FLWE simultaneously, and explores their independent, combined, and interactive effects on foreign language writing strategy use. It provides a more comprehensive account of how contrasting emotional experiences shape learners' L2 writing strategic behaviors, thereby contributing to a more nuanced understanding of emotion-behavior relations in Chinese L2 academic contexts.

2. Literature Review

2.1. Foreign Language Writing Boredom (FLWB)

In foreign language learning research, scholars have broadened their focus beyond anxiety to include positive emotions such as enjoyment, pride, love, and interest, as well as negative emotions like guilt and shame [10-12]. However, boredom remains understudied [13]. As a distinct negative emotion, boredom undermines motivation and engagement and is not merely the opposite of positive emotions [14,15]. Li found that learners' perceived control and value appraisals negatively predicted boredom in L2 learning, and Li et al., drawing on control-value theory, conceptualized foreign language learning boredom across three dimensions and developed the seven-factor Foreign Language Learning Boredom Scale (FLLBS) [16]. Despite this progress, boredom in foreign language writing contexts has received far less attention than emotions such as anxiety. Early work by Bixler and D'Mello showed that higher levels of boredom during essay writing were associated with longer writing times, demonstrating its behavioral impact [17]. Han and Hyland further revealed that learners experienced negative emotions, including disappointment and hopelessness, after receiving written corrective feedback, highlighting the need to explore negative emotions beyond anxiety [18]. The first systematic attempt to conceptualize and measure foreign language writing boredom (FLWB) was made by Li et al. who developed the unidimensional Foreign Language Writing Boredom Scale (FLWBS) and found FLWB to be a major negative predictor of writing performance among eighth-grade Chinese students [4].

2.2. Foreign Language Writing Enjoyment (FLWE)

In SLA research, anxiety has long been the most extensively examined negative emotion. MacIntyre and Gregersen argued that it was time to shift attention toward positive emotions [19]. Enjoyment, for instance, arises when learners' psychological needs are met [20]. Drawing on Fredrickson's broaden-and-build theory, Dewaele and

MacIntyre created the Foreign Language Enjoyment Scale (FLES) to measure global L2 enjoyment [9,10]. Li et al. later adapted this instrument for Chinese learners, developing the Chinese FLES (CFLES), which reduced the scale to 11 items and validated three factors: private enjoyment, teacher enjoyment, and atmosphere enjoyment [21]. Empirical research on enjoyment in L2 writing began with Allen et al. who used the intelligent tutor Writing Pal to design gamified writing tasks and showed that game enjoyment enhanced learners' engagement [22]. Han and Hyland further demonstrated that learners could experience positive emotions, such as curiosity and contentment, when responding to written corrective feedback [18]. These studies offered early evidence for enjoyment in L2 writing but did not conceptualize it as a distinct construct. As general classroom emotions differ from skill-specific emotions, Zhang and Dong examined writing enjoyment only as an outcome or component of psychological states [23,24]. Li et al. advanced the field by developing the Foreign Language Writing Enjoyment Scale (FLWES), identifying two dimensions—private writing enjoyment (PWE) and social writing enjoyment (SWE)—and showing that FLWE positively predicted L2 writing achievement [4].

2.3. L2 Writing Strategy

According to Rubin, Language learning strategies (LLS) encompass behaviors that help learners build their language competence and simultaneously shape the learning process itself [25]. L2 writing strategies can be viewed as a subset of language learning strategies, as they consist of deliberate, goal-directed actions employed during the writing process [5]. Writing is fundamentally a cognitive, goal-driven activity in which learners draw on a range of actions to accomplish a task [5]. The writing process is inherently cognitive and goal-oriented, requiring learners to employ various actions to complete a writing task [5]. In SLA research, the study of L2 writing has largely centered on understanding how such strategies are employed during the writing process. A few studies have developed and validated some measurement tools to evaluate the frequency of L2 writing strategy use. For example, Hwang and Lee developed and validated English Writing Strategy Inventory (EWSI) among 271 Korean EFL students [5]. Eight factors were uncovered including '(1) metacognitive strategies, (2) memory strategies, (3) cognitive strategies, (4) L1 use strategies, (5) revision strategies, (6) L2 use strategies, (7) social strategies, and (8) compensatory/search strategies'. Sun and Wang developed and validated Questionnaire of English Writing Self-Regulated Learning Strategies (QEWSRLS) among 319 sophomore Chinese students [26]. The QEWSRLS includes three factors: Environmental Self-Regulated Learning (SRL) Strategies, Behavioral SRL Strategies and Personal SRL Strategies.

2.4. The Interaction Effects of Positive and Negative Emotions

Empirical research within the broaden-and-build framework has demonstrated that positive emotions can counteract the physiological consequences of high-arousal negative emotions, a process known as the "undoing effect" [27,28]. Fredrickson pointed that positive emotions can antidote the effects of negative emotions and relax the control of negative emotions over a person's body and mind by removing or undoing the preparation for specific actions [9]. However, existing research established primarily in cardiovascular and autonomic recovery paradigms and involve high-activation negative emotions such as fear or anxiety. In contrast, boredom represents a low-arousal negative emotion that does not trigger the sympathetic activation required for undoing to occur [7,29]. Research on emotions should not be restricted to single, isolated affective states; rather, it should account for the diversity, context specificity, and multiplicity (or combinatory nature) of emotional experiences [30]. Despite these insights, little is known about how low-arousal negative emotions interact with positive emotions in shaping learning behaviors such as language writing strategy use. This gap underscores the need

to examine whether positive writing enjoyment can mitigate or potentially amplify the detrimental impact of writing boredom on strategy deployment.

2.5. L2 Writing Emotions and L2 Writing Strategy

Emotional experiences are likely to shape how learners deploy foreign language writing strategies [5-7]. Positive and negative achievement emotions may exert different influences on strategy use, with positive emotions being associated with more creative strategies and negative emotions with information-processing strategies [7]. Early empirical work in L2 writing mainly focused on writing anxiety. For instance, Yen found that overall L2 writing anxiety was not significantly related to L2 writing strategies among 231 English majors in China [31]. Building on this line of research, Hu simultaneously examined foreign language anxiety, enjoyment, and L2 writing strategies among 54 English majors, and reported that L2 writing enjoyment was positively related to strategy use, whereas L2 writing anxiety was not [32]. However, although Hu reported acceptable Cronbach's alpha coefficients for self-adapted scales, the absence of EFA or CFA limits the confidence that can be placed in these findings [32]. Subsequent studies began to focus on specific types of L2 writing strategies. Zhang and Dong found positive relationships between all dimensions of L2 self-regulated learning strategies and L2 writing enjoyment [24]. Similarly, Wang et al. showed that positive L2 writing emotions, including enjoyment, hope, and pride, positively predicted L2 writing self-regulated strategies among 360 non-English majors [33]. With respect to L1 use in L2 writing, Hu and Du found that L2 writing anxiety was positively associated with L1 use, which in turn was linked to poorer L2 writing performance, although appropriate L1 use could help some students maintain performance under high anxiety [34]. Despite these advances, prior research has largely centered on writing anxiety and enjoyment, while writing boredom remains noticeably underexplored. In addition, L1 use is one of the strategies frequently employed by EFL writers, yet it has rarely been examined alongside other L2 writing emotions beyond anxiety [35]. In addition, few studies have investigated L2 writing positive and negative writing emotions simultaneously or considered their combined and interactive effects on L2 writing strategic behaviors

2.6. Research Questions and Hypotheses

Based on the theoretical underpinnings of these constructs as well as existing empirical evidence, the current study would address the following research questions and hypotheses to fill the existing gaps in the literature:

Research question 1: To what extent can FLWB predict EWS use independently?

Hypothesis 1: FLWB negatively predicts different types of EWS use independently.

Research question 2: To what extent can FLWE predict EWS use independently?

Hypothesis 2: FLWE positively predicts different types of EWS use independently.

Research question 3: To what extent can FLWB and FLWE co-predict EWS use?

Hypothesis 3: FLWE positively, whereas FLWB negatively, predicts different types of EWS use.

Research question 4: Does FLWE moderate the relationship between FLWB and EWS use?

Hypothesis 4: FLWE moderates the relationships between FLWB and different types of EWS use, making the negative effect of FLWB on EWS use become weaker when FLWE is higher.

3. Methodology

3.1. Participants and Demographics

The present study employed both convenience sampling and snowball sampling techniques. The questionnaire was administered via Wenjuanxing platform to undergraduate students at a comprehensive university in southern China. The

questionnaire link was sent to convenient groups through social media such as QQ and WeChat at first. Students who had completed the survey were encouraged to forward the questionnaire link to their peers, thereby facilitating the snowballing process. Prior to participation, students confirmed that they had recently engaged in foreign language writing courses or practice tasks. These students are frequently reminded the importance of passing English tests such as CET-4. They were informed about the nature, purpose, and significance of the study, and participation was entirely voluntary. All responses were collected anonymously, and participants were free to withdraw from the study at any time without any negative consequences. A total of 259 undergraduate students participated in the final sample, including 126 males (48.6%) and 133 females (51.4%). Among them, 38 were first-year students (14.7%), 94 were second-year students (36.3%), 71 were third-year students (27.4%), and 56 were fourth-year students (21.6%).

3.2. Instruments

After completing the demographic information, including gender and year of study, participants were required to complete the following scales and inventory in questionnaire:

a. Foreign language writing boredom scale (FLWBS). Participants' FLWB was assessed with the Chinese version of this scale validated by Li et al. in a Chinese EFL context at the junior secondary level [4]. The FLWBS is a unidimensional scale consisting of 5 items. They are arranged on a 5-point Likert scale ranging from '1' ('strongly disagree') to '5' ('strongly agree').

b. *Foreign language writing enjoyment scale (FLWES).* Participants' FLWE was assessed with the Chinese version of this scale validated by Li et al. in a Chinese EFL context at the junior secondary level [4]. The FLWES consists of 9 items measuring two factors, namely private writing enjoyment (6 items) and social writing enjoyment (3 items). They are arranged on a 5-point Likert scale ranging from '1' ('strongly disagree') to '5' ('strongly agree').

c. *English writing strategy inventory (EWSI).* Participants' frequency of English writing strategy was evaluated with the inventory validated by Hwang and Lee in a Korean EFL context [5]. The EWSI consists of 24 items measuring 8 factors, namely metacognitive strategies (4 items), memory strategies (4 items), cognitive strategies (4 items), L1 use strategies (3 items), revision strategies (3 items), L2 use strategies (2 items), social strategies (2 items), and compensatory/search strategies (2 items). In this study, several items were adapted by replacing "Korean" with "Chinese" to fit the Chinese context. This inventory was also translated into Chinese version to make participants understand more easily. All items are arranged on a 5-point Likert scale ranging from '1' ('never true') to '5' ('always true').

3.3. Data Analysis

As the Foreign Language Writing Boredom Scale (FLWBS) and Foreign Language Writing Enjoyment Scale (FLWES) were originally developed and validated among eighth-grade students, it was necessary to re-examine their factor structures in the present study with a sample of university undergraduates. Considering the potential differences across age groups and educational contexts, we first conducted exploratory factor analysis (EFA) to explore the underlying dimensionality of the scales. Subsequently, confirmatory factor analysis (CFA) was performed to verify the stability and applicability of the identified structures in the current sample. In addition, the English Writing Strategy Inventory (EWSI), which was originally developed for Korean university students, had not been subjected to CFA in previous research. Therefore, both EFA and CFA were also conducted on the EWSI to assess and confirm its factor structure in the present Chinese undergraduate context. This two-step approach ensured that all instruments used in the study were psychometrically sound for the target population. EFA was conducted with

SPSS 30.0. CFA was conducted with AMOS 29.0. Structural equation modeling (SEM) was conducted in AMOS 29.0. Model fit was evaluated using multiple indices (e.g. χ^2/df, CFI, TLI, RMSEA, SRMR) with according to Hu and Bentler [36].

After establishing the measurement models, structural equation modeling (SEM) was applied to test the hypothesized relationships. The analysis proceeded in three stages. First, independent prediction models were estimated, in which FLWE and FLWB were entered separately as predictors of writing strategies. This step allowed us to examine the individual predictive power of each emotion. Second, a combined prediction model was tested, specifying both FLWE and FLWB as exogenous predictors with their covariance freely estimated, to assess their unique contributions when entered simultaneously. Third, to test the moderation effect, a latent interaction term (FLWE × FLWB) was created using the product-indicator approach [37]. Specifically, items were parceled into balanced parcels based on factor loadings, mean-centered, and then paired to form product indicators, which loaded onto the latent interaction construct. Writing strategies were regressed on FLWE, FLWB, and their interaction, while the covariance between FLWE and FLWB was estimated. Additionally, model fit was evaluated using multiple indices (e.g. χ^2/df, CFI, TLI, RMSEA, SRMR) with reference to the cutoffs suggested by Hu and Bentler [36]. Several error covariances among the strategy dimensions were added in all the estimated models (not shown for elegance) to improve model fit because language learning strategies are intercorrelated with each other [38]. In combined prediction model and moderation model, FLWE and FLWB were treated as correlated exogenous predictors of EWS use based on a stronger negative relationship between them under a Chinese context [39].

4. Results

4.1. Exploratory Factor Analysis (EFA)

We first conducted Bartlett's test of sphericity and the Kaiser–Meyer–Olkin (KMO) measure of sampling adequacy. The results (FLWES: KMO = 0.884 > 0.60, $p < 0.001$; FLWBS: KMO = 0.940 > 0.60, $p < 0.001$; EWSI: KMO = 0.950 > 0.60, $p < 0.001$) indicated that the data were suitable for factor analysis [40]. Principal component analysis with varimax rotation was then performed. For FLWBS, only one factor had an eigenvalue greater than 1, explaining 73.10% of the variance (Table 1). For FLWES, a unidimensional solution also emerged, explaining 62.63% of the variance; one item was removed due to low communality (< 0.50). The original two-factor structure was undermined as one-factor structure because a latent factor was considered stable only when it was indicated by at least three items (Table 2) [41]. For EWSI, although eigenvalues initially suggested three factors, the structure showed ambiguous cross-loadings. To achieve a clearer and theoretically consistent model, the number of factors was fixed at four in line with the original scale. Items were removed using established criteria: loadings < 0.40, cross-loading differences < 0.20, communality < 0.50, or conceptual mismatch. Eleven items were deleted. The final EWSI structure (Table 3) explained 69.13% of the variance, and the four factors were labeled metacognition, revision, L1 use, and L2 use strategies [41].

Table 1. EFA results of FLWBS with factor loadings.

Items	Mean	SD	Factor loadings
1. I dislike writing in English	3.31	1.18	0.85
2. I always struggle to sort out how to write in English.	3.24	1.26	0.87
3. The topics for English writing are always uninteresting.	3.17	1.13	0.78
4. It is hard for me to get stimulated in English writing.	3.25	1.20	0.89
5. I want to escape every time I am asked to write an English essay.	3.27	1.30	0.87

Table 2. EFA results of FLWES with factor loadings.

Items	Mean	SD	Factor loadings
1. I am fully engaged when writing in English.	3.42	1.03	0.85
2. I enjoy putting what I have learned into English writing.	3.76	1.06	0.78
3. I feel confident in English writing.	3.20	1.12	0.84
4. I am interested in English writing.	3.22	1.17	0.85
5. I am fully motivated whenever writing in English.	3.20	1.27	0.84
6. I feel a sense of achievement in English writing.	3.45	1.11	0.84
7. The English teacher's praise motivates me to write in English.	3.81	1.03	0.75
8. I always look forward to the English teacher's feedback on my English writing.	3.65	1.09	0.79

Table 3. EFA results of EWSI with factor loadings.

Items	Mean	SD	Factor loadings			
			1	2	3	4
1. When writing, I read repeatedly through paragraphs to check the logical flow.	3.62	0.97	0.63			
2. Before writing, I consider what the requirements of the writing task are.	3.90	0.91	0.78			
3. Before writing, I make the purpose of my writing clear.	3.85	0.93	0.75			
4. After writing, I read the final draft thoroughly from beginning to end to look for any errors.	3.64	1.02		0.69		
5. After writing, I review my work to look for and correct typos.	3.64	0.99		0.66		
6. After writing, I review my work to look for and correct grammatical errors.	3.66	1.00		0.76		
7. Before writing, when generating ideas, I write down ideas that come to mind in Chinese.	3.84	0.94			0.73	
8. When writing, if I have trouble writing in English, I write what I want to express in Chinese first and then translate it into English.	3.76	0.97			0.67	
9. Before writing, I make an outline in Chinese.	3.63	1.07			0.78	
10. Before writing, when generating ideas, I write down ideas that come to mind in English.	3.43	1.04				0.66
11. Before writing, I make an outline in English.	3.28	1.22				0.77
12. After writing, I seek feedback from a native speaker.	3.05	1.32				0.86
13. When writing, I ask a native speaker about English expressions that I do not know or that I want to use.	2.98	1.28				0.85

4.2. Confirmatory Factor Analysis (CFA)

To further confirm the factor structures identified by prior EFAs and assess the construct validity of the scales, confirmatory factor analyses (CFAs) were conducted with AMOS 29.0 to obtain fit indices firstly. Model fit indices are displayed in Table 4. CFA results indicated that all three scales demonstrated an acceptable model fit [42]. For FLWBS and FLWES, χ^2/df ratios were below 5, with excellent TLI and CFI values (> 0.90)

and satisfactory SRMR (< 0.08), although RMSEA values were slightly above the conventional cutoff (0.08). Overall, the results support the structural validity of the three scales. In addition, the factor loadings for items are shown in Figure 1, 2 and 3. All of them were higher than 0.50, indicating every item needed to be maintained.

Table 4. Confirmatory factor analysis (CFA) model fit indices for FLWBS, FLWES, and EWSI.

Scales	χ^2/df	TLI	CFI	SRMR	RMSEA
FLWB	2.701	0.979	0.99	0.030	0.081
FLWE	3.416	0.952	0.966	0.044	0.097
EWSI	2.191	0.935	0.951	0.057	0.068

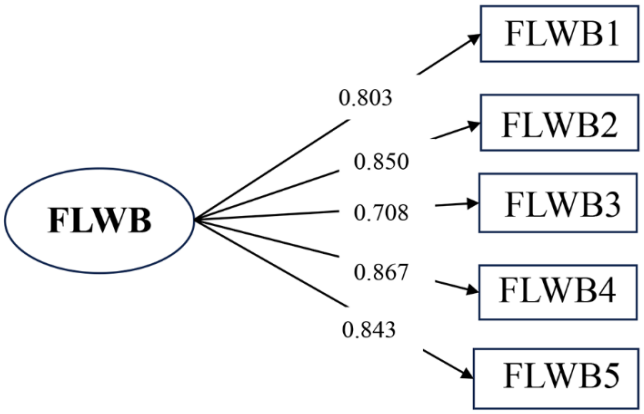

Figure 1. Confirmatory factor analysis (CFA) model for FLWB.

Figure 2. Confirmatory factor analysis (CFA) model for FLWE.

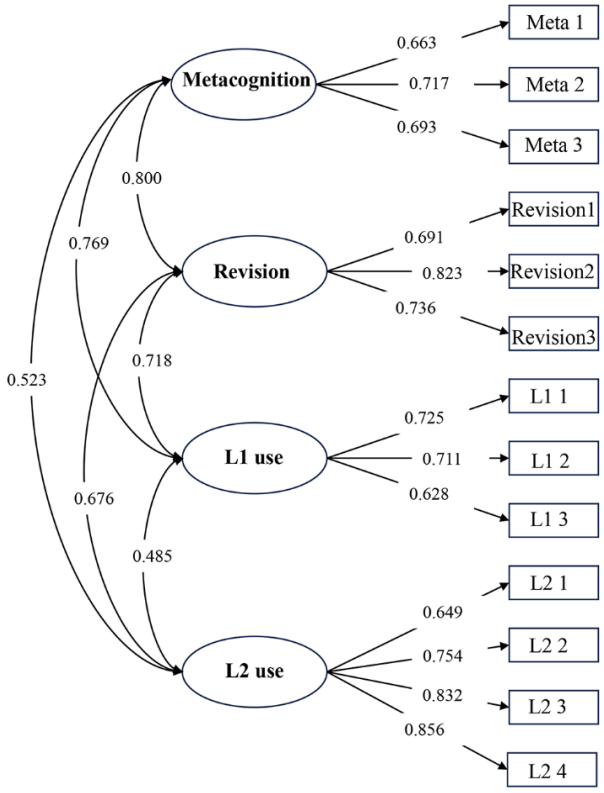

Figure 3. Confirmatory factor analysis (CFA) model for EWS.

Composite reliability (CR) and average variance extracted (AVE) are two important indicators of convergent validity [43]. CR and AVE of FLWBS were 0.91 and 0.67 respectively. CR and AVE of FLWES were 0.93 and 0.63 respectively. Regarding EWSI, CRs for its four subscales were 0.73, 0.80, 0.73 and 0.86 respectively. AVEs for them were 0.48, 0.57, 0.48 and 0.60. All the indices suggested these three scales had acceptable convergent validity (CR> 0.7, AVE> 0.5).

We assessed discriminant validity at the factor level. FLWBS and FLWES were unidimensional scale. Concerning EWSI, the correlation coefficient of every two factors of the EWSI was lower than 0.85, indicating the factors in EWSI were significantly discriminant from each other.

4.3. Independent Prediction Model: FLWB and FLWE Predicting EWS Use

We first explored the independent predictive effects of FLWB on four sub-dimensions of EWS. Regarding the model fit indices, χ^2/df ratio was 2.120 (< 3) with good TLI (0.926 > 0.9) and RMSEA (0.066 < 0.08), suggesting acceptable model fit. As shown in Figure 4, results showed that FLWB negatively predicted metacognition strategy (β = -.332, $p \leq 0.001$), revision strategy (β = -.409, $p \leq 0.001$) and L2 use strategy (β = -.388, $p \leq 0.001$), with medium-to-large effect sizes for these three types of EWS use [44]. FLWB had the greatest predictive effect on revision strategy, followed by L2 use and metacognition strategies based on the standardized path coefficients. However, FLWB could not significantly predict L1 use strategy. The results partially support hypothesis 1.

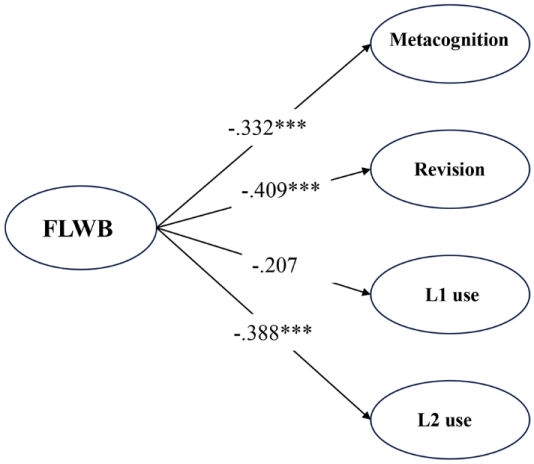

Figure 4. Structural equation modeling (SEM) for FLWB predicting EWS use independently.

We then explored the independent predictive effects of FLWE on four sub-dimensions of EWS. Regarding the model fit indices, χ^2/df ratio was 2.230 (< 3); SRMR = 0.063 (< 0.08); TLI was 0.919 (> 0.08); RMSEA was 0.069 (< 0.08). These indices suggested the model fit was acceptable. As shown in Figure 5, FLWE positively predicted metacognition strategy (β =.682, $p \leq 0.001$), revision strategy (β =.788, $p \leq 0.001$), L1 use (β = .570, $p \leq 0.001$) and L2 use (β =.771, $p \leq 0.001$), with all large effect sizes according to Cohen [44]. FLWE had the greatest predictive effect on revision strategy, followed by L2 use, metacognition strategy and L1 use strategies according to the standardized path coefficients. The results totally support hypothesis 2.

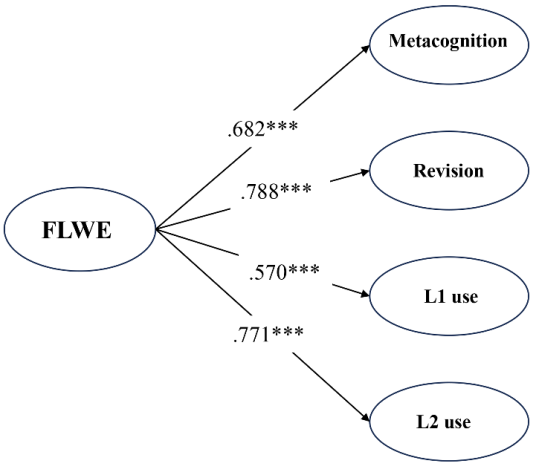

Figure 5. Structural equation modeling (SEM) for FLWE predicting EWS use independently.

4.4. Combined Prediction Model: Unique Contributions of FLWE and FLWB on EWS Use

We constructed a combined prediction model in which both FLWE and FLWB were included simultaneously as predictors of EWS, with their covariance freely estimated. It allowed us to assess the unique contribution of each emotion to writing strategy use while controlling for their intercorrelation. Regarding the model fit indices, χ^2/df ratio was 1.900 (< 3); SRMR = 0.064 (< 0.08); TLI was 0.929 (> 0.08); RMSEA was 0.059 (< 0.08). These indices suggested the model fit was acceptable. As shown in Figure 6, FLWB could no longer predict EWS use after controlling FLWE and the standardized path coefficients of FLWB turned positive but non-significant on four types of EWS use. Additionally, FLWE still positively predicted metacognition strategy (β =.717, $p \leq 0.001$), revision strategy (β =.830, $p \leq 0.001$), L1 use strategy (β =.660, $p \leq 0.001$) and L2 use strategy (β =.803, $p \leq 0.001$), with

all large effect sizes according to Cohen [44]. FLWE had the greatest predictive effect on revision strategy, followed by L2 use, metacognition strategy and L1 use strategies according to the standardized path coefficients. The results partially support hypothesis 3.

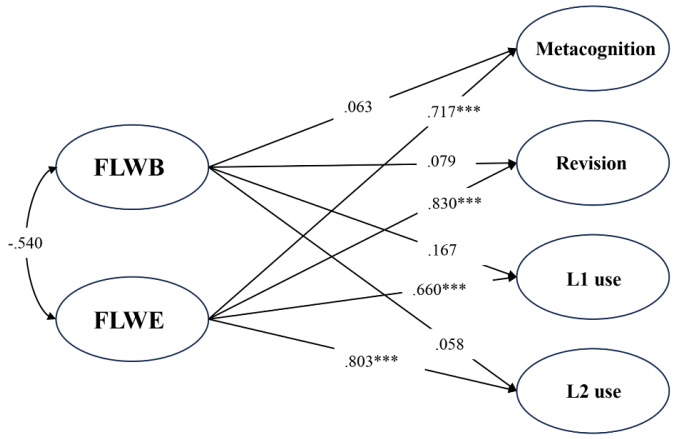

Figure 6. Structural equation modeling (SEM) for FLWB and FLWE co-predicting EWS use.

4.5. Moderation Model: Interactive Effects between FLWE and FLWB on EWS Use

To further test the theoretical assumption that enjoyment buffers the detrimental impact of boredom, we proceeded to examine a moderation model by specifying a latent interaction term (FLWE × FLWB) in addition to the two main effects. Regarding the model fit indices, χ^2/df ratio was 1.957 (< 3); TLI was 0.905 (> 0.08); RMSEA was 0.061 (< 0.08). These indices suggested the model fit was acceptable. As shown in Figure 7, the latent interaction term (FLWE × FLWB) significantly and negatively predicted metacognitive strategy use (β = -.246, $p \leq 0.001$), with a small-to-medium effect size [44]. This suggests that when learners experienced high enjoyment, the presence of boredom exerted a stronger detrimental effect on their use of metacognitive strategies. For revision, L1 use, and L2 use strategies, the interaction terms (FLWE × FLWB) were non-significant, suggesting that the impact of boredom on these strategies did not vary across levels of enjoyment. This indicates that when enjoyment was high, the detrimental effect of boredom on metacognitive strategy use was amplified rather than attenuated. The results totally rejected hypothesis 4.

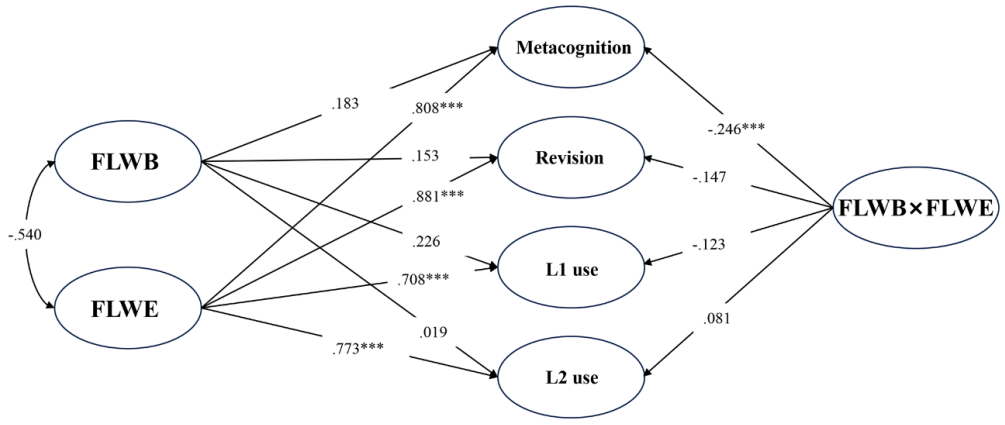

Figure 7. Structural equation modeling (SEM) for the interactive effect between FLWB and FLWE on EWS use.

5. Discussion

5.1. The Independent Predictive Effects of FLWB and FLWE on EWS Use

Firstly, this study showed that FLWB—an emotion experienced specifically during L2 writing—significantly and negatively predicted revision, L2 use, and metacognitive strategies, while its effect on L1 use was nonsignificant. This suggests that writing-specific boredom selectively undermines cognitively demanding strategies rather than exerting uniform effects across all strategic behaviors. Although earlier research has examined how general boredom relates to broad L2 learning strategies, such work does not capture affective experiences unique to writing tasks [29]. By focusing on FLWB as a task-specific emotion, the present study demonstrates differentiated effects across L2 writing strategies. According to Pekrun's Control–Value Theory, boredom arises when learners perceive low task value and experience too little or too much control [7]. For many Chinese undergraduates, L2 writing may feel monotonous, irrelevant, or overly challenging, reducing perceived value and triggering boredom. This emotion leads to attentional withdrawal, diminished motivation, and low-effort processing, contributing to shallow information processing [7,45,46]. High-effort strategies—such as planning, revising, or seeking feedback in English—require substantial cognitive investment, including vocabulary retrieval and syntactic management. Under FLWB, these behaviors feel tedious and exhausting, prompting learners to avoid them, which explains the negative effects on metacognitive, revision, and L2 use strategies. In contrast, L1 use strategies showed no significant relationship with FLWB due to their low-effort, resource-saving nature. Studies suggest that L1 use during planning or idea generation can serve as a compensatory strategy when L2 proficiency is limited or cognitive load is high [47,48]. Consequently, L1 use is less sensitive to boredom and may function as a coping mechanism that reduces cognitive demands without full disengagement. Overall, FLWB emerged as a strong inhibitory force, posing a substantial emotional barrier to higher-order strategic engagement in L2 writing.

Secondly，the present study found that FLWE significantly and positively predicted all four writing strategies examined—metacognitive, revision, L1 use, and L2 use strategies. The findings of the present study are consistent with those reported by Hu and Wang et al. [32,33]. The findings can be interpreted through the function of positive emotions. Positive achievement emotions broaden learners' attention, foster cognitive flexibility, and promote the use of more creative and varied learning strategies [7,9,49,50]. Learners who experience enjoyment during L2 writing tend to approach tasks with greater openness and cognitive adaptability, which facilitates the use of metacognitive planning, monitoring, and evaluative processes [51]. Enjoyment can also support divergent thinking with the text, explaining why ELF learners are likely to use revision strategies [9]. Furthermore, FLWE can encourage learners to experiment and explore with linguistically challenging behaviors, such as generating ideas or drafting outlines directly in the L2 and seeking L2 feedback and expressions, reflecting both strategy flexibility and a willingness to take communicative risks. That FLWE also predicted L1 use strategies suggests that enjoyable writers may draw on their full linguistic repertoire in a creative and flexible manner, strategically switching between L1 and L2 to aid conceptualization and problem solving. What is more, FLWE demonstrated large positive effects on all four writing strategies examined—metacognition, revision, L1 use, and L2 use. The magnitude of these effects suggests that enjoyment is not merely a peripheral facilitator but a central driving force behind strategic engagement in foreign language writing.

5.2. The Combined Predictive Effects of FLWB and FLWE on EWS Use

When examined separately, FLWB negatively predicted metacognitive, revision, and L2 use strategies, whereas FLWE showed positive effects on all four strategies. However, in the combined model, the predictive effects of FLWB disappeared, while those of FLWE became even stronger. A previous study has shown that FLWB tends to exert stronger

predictive power on L2 writing performance [4]. The use of L2 writing strategies can contribute to writing performance [52-54]. This pattern suggests that positive emotions may primarily influence writing outcomes through process-oriented mechanisms such as strategy deployment and FLWE may more directly undermine the outcome variables such as performance. Compared with independent predictive effects, this shift indicates substantial shared variance between the two emotions, with FLWE emerging as the dominant predictor once their overlap is controlled. When FLWE is tested alone, its true effect is partially obscured by the unmodeled influence of FLWB, resulting in an underestimated effect size. Once both emotions are entered simultaneously, the model partitions their shared variance and assigns it to the predictor that provides the more powerful and theoretically coherent explanation. Beyond statistical explanation, this pattern aligns with the broaden-and-build theory, which argues that positive emotions expand attentional scope, enhance cognitive flexibility, and build enduring personal resources, thereby exerting stronger and more pervasive influences on complex cognitive behaviors [9]. In contrast, boredom primarily reflects withdrawal and low task value, offering little motivational or cognitive leverage when modeled alongside a powerful positive emotion [7]. Thus, when FLWE and FLWB compete in the same model, the broadened cognitive resources associated with enjoyment overshadow the restrictive tendencies of boredom. This suggests that positive writing-specific emotions play a more decisive role than negative ones in mobilizing different types of L2 writing strategies.

5.3. The Interaction Effects of FLWB and FLWE on EWS Use

Firstly, the present study revealed a noteworthy interaction between FLWE and FLWB for metacognitive strategies, but not for revision, L1 use, or L2 use strategies. Specifically, the significant negative interaction suggests that high levels of FLWE do not buffer the detrimental effect of FLWB on metacognitive engagement; instead, FLWE appears to amplify the negative influence of boredom when both emotions co-occur. The broaden-and-build theory proposes that positive emotions may undo some of the physiological effects of high-arousal negative emotions [9,27,28]. However, boredom, a low-arousal negative emotion, does not elicit the cardiovascular activation required for the undoing mechanism to occur. The present findings therefore refine the theory by showing that, in the domain of behavioral self-regulation, positive emotions may amplify rather than buffer the detrimental effects of low-arousal negative emotions. This suggests a boundary condition for the undo hypothesis in contexts involving low-activation negative states.

Secondly, what was interesting was that FLWE amplified the negative effects of FLWB on metacognition strategy. Within Pekrun's Control-Value Theory, the interaction between FLWE and FLWB on metacognitive writing strategies can be understood by considering how students' control and value appraisals dynamically shape their emotional experiences during writing [7]. Chinese undergraduates are continuously reminded of the high stakes of English writing through curriculum design and teachers' emphasis on test-oriented outcomes, which strengthens the value they attach to writing tasks. High control together with strong positive value appraisals naturally fosters higher levels of FLWE among these more proficient students [7]. However, the same examination-driven environment may lead to repeated practice of highly similar writing genres and formulaic templates. Although such repetitive training may initially boost students' enjoyment by enhancing feelings of competence, it can also engender a sense of meaninglessness and monotony over time, leading to the generation of FLWB. For this type of English writing task, Chinese EFL learners with higher levels of FLWE may have already acquired a greater repertoire of lexical bundles and template-based structures [55-57]. In such circumstances, EFL learners may perceive writing tasks as increasingly unchallenging, which in turn amplifies the detrimental effects of FLWB [14]. In addition, metacognitive strategies are among the most demanding strategies because they require

learners to plan, monitor, and evaluate their performance while processing language [58]. EFL learners are likely to rely on these expressions and templates in a more automatic and unreflective manner, thereby undermining the use of these demanding strategies such as planning and monitoring in their L2 writing [51]. This pattern reflects the particular emotional ecology of exam-oriented EFL writing in China, in which positive and negative task emotions can co-exist and interact in complex, sometimes counterintuitive ways.

5.4. Pedagogical Implications

This study offers several pedagogical implications. First, given the negative predictive effects of FLWB on EWS use, teachers should diversify writing tasks, incorporate meaningful and autonomy-supportive activities, and provide optimally challenging assignments to prevent disengagement from cognitively demanding strategies. Second, the positive effects of FLWE highlight the value of cultivating enjoyment through supportive feedback, positive teacher–student interactions, collaborative drafting, and celebrating small achievements, all of which encourage deeper strategic engagement. Third, the combined effects of FLWB and FLWE suggest that boosting positive emotions—through gamified tasks, peer-sharing, or creativity-based activities—may be more effective than merely reducing negative affect. Finally, the interaction pattern, in which high FLWE intensified the detrimental effect of FLWB on metacognitive strategies, underscores the need to foster emotional regulation. Techniques such as reflective journals, emotional check-ins, or brief mindfulness resets can help students manage fluctuating emotions and maintain metacognitive engagement.

5.5. Limitations and Recommendations

This study has several limitations. First, it relied solely on self-reported questionnaires, which may be affected by social desirability, recall bias, and learners' limited awareness of their own emotions and strategy use. Future research should incorporate mixed methods such as interviews, observations, learning logs, or screen-recorded writing processes. Second, the sample came from a single university in southern China, limiting generalizability; broader and more diverse samples are needed. Third, although the study examined the interaction between FLWE and FLWB, it did not consider other mediators or moderators such as motivation [46]. Future research should include additional variables or adopt longitudinal designs. Finally, using the same sample for both EFA and CFA may increase the risk of capitalization on chance. Future studies are therefore encouraged to cross-validate the measurement model using independent samples.

6. Conclusion

This study examined how Chinese university students' FLWE and FLWB independently, jointly, and interactively predicted their use of English writing strategies. Results showed a clear asymmetry between positive and negative emotions. FLWE strongly and positively predicted metacognitive, revision, L1 use, and L2 use strategies, whereas FLWB negatively predicted metacognitive, revision, and L2 use strategies but did not affect L1 use. In the combined model, FLWE became the dominant predictor and the effects of FLWB disappeared. A significant interaction emerged only for metacognitive strategies, suggesting that higher enjoyment may amplify rather than buffer the negative impact of boredom. These findings highlight the complex and asymmetric ways in which enjoyment and boredom shape strategic engagement in L2 writing, extending control-value theory and providing boundary conditions for broaden-and-build theory. Pedagogically, fostering FLWE and supporting learners' emotional regulation may enhance strategy use. However, reliance on self-report data and a single-institution sample limits generalizability. Future research should diversify samples and explore additional mechanisms underlying emotion–strategy relationships.

References

1. J. Xu and Y. Fan, "The evolution of the college English curriculum in China (1985–2015): changes, trends and conflicts," Lang Policy, vol. 16, no. 3, pp. 267–289, Aug. 2017, doi: 10.1007/s10993-016-9407-1.
2. A. Apridayani, W. Han, and K. Sakkanayok, "Enhancing English writing competence in higher education: a comparative study of teacher-only assessment versus teacher and student self-assessment approaches," Asian. J. Second. Foreign. Lang. Educ., vol. 9, no. 1, p. 37, Feb. 2024, doi: 10.1186/s40862-024-00263-3.
3. Y.-S. Cheng, "A measure of second language writing anxiety: Scale development and preliminary validation," Journal of Second Language Writing, vol. 13, no. 4, pp. 313–335, Dec. 2004, doi: 10.1016/j.jslw.2004.07.001.
4. C. Li, L. Wei, and X. Lu, "Contributions of foreign language writing emotions to writing achievement," System, vol. 116, p. 103074, Aug. 2023, doi: 10.1016/j.system.2023.103074.
5. M. Hwang and H.-K. Lee, "Development and validation of the English writing strategy inventory," System, vol. 68, pp. 60–71, Aug. 2017, doi: 10.1016/j.system.2017.06.014.
6. C. Griffiths and G. Cansiz, "Language learning strategies: An holistic view," SSLLT, vol. 5, no. 3, pp. 473–493, Jan. 2015, doi: 10.14746/ssllt.2015.5.3.7.
7. R. Pekrun, "The Control-Value Theory of Achievement Emotions: Assumptions, Corollaries, and Implications for Educational Research and Practice," Educ Psychol Rev, vol. 18, no. 4, pp. 315–341, Nov. 2006, doi: 10.1007/s10648-006-9029-9.
8. J.-M. Dewaele and P. D. MacIntyre, "Foreign Language Enjoyment and Foreign Language Classroom Anxiety: The Right and Left Feet of the Language Learner," in Positive Psychology in SLA, P. D. MacIntyre, T. Gregersen, and S. Mercer, Eds., Multilingual Matters, 2016, pp. 215–236. doi: 10.21832/9781783095360-010.
9. B. L. Fredrickson, "The broaden–and–build theory of positive emotions," Phil. Trans. R. Soc. Lond. B, vol. 359, no. 1449, pp. 1367–1377, Sept. 2004, doi: 10.1098/rstb.2004.1512.
10. J.-M. Dewaele and P. D. MacIntyre, "The two faces of Janus? Anxiety and enjoyment in the foreign language classroom," SSLLT, vol. 4, no. 2, pp. 237–274, Jan. 2014, doi: 10.14746/ssllt.2014.4.2.5.
11. P. D. MacIntyre and L. Vincze, "Positive and negative emotions underlie motivation for L2 learning," SSLLT, vol. 7, no. 1, pp. 61–88, Mar. 2017, doi: 10.14746/ssllt.2017.7.1.4.
12. Y. Teimouri, "Differential Roles of Shame and Guilt in L2 Learning: How Bad Is Bad?," The Modern Language Journal, vol. 102, no. 4, pp. 632–652, Dec. 2018, doi: 10.1111/modl.12511.
13. C. Li, "A Control–Value Theory Approach to Boredom in English Classes Among University Students in China," The Modern Language Journal, vol. 105, no. 1, pp. 317–334, Mar. 2021, doi: 10.1111/modl.12693.
14. C. Li, J.-M. Dewaele, and Y. Hu, "Foreign language learning boredom: Conceptualization and measurement," Applied Linguistics Review, vol. 14, no. 2, pp. 223–249, Mar. 2023, doi: 10.1515/applirev-2020-0124.
15. M. Kruk, "Variations in Motivation, Anxiety and Boredom in Learning English in Second Life," The EUROCALL Review, vol. 24, no. 1, pp. 25–39, Mar. 2016.
16. R. Pekrun and R. P. Perry, "Control-Value Theory of Achievement Emotions," in International Handbook of Emotions in Education, Routledge, 2014.
17. R. Bixler and S. D'Mello, "Detecting boredom and engagement during writing with keystroke analysis, task appraisals, and stable traits," in Proceedings of the 2013 international conference on Intelligent user interfaces, Santa Monica California USA: ACM, Mar. 2013, pp. 225–234. doi: 10.1145/2449396.2449426.
18. Y. Han and F. Hyland, "Academic emotions in written corrective feedback situations," Journal of English for Academic Purposes, vol. 38, pp. 1–13, Mar. 2019, doi: 10.1016/j.jeap.2018.12.003.
19. P. MacIntyre and T. Gregersen, "Emotions that facilitate language learning: The positive-broadening power of the imagination," Studies in Second Language Learning and Teaching, vol. II, no. 2, pp. 193–213, 2012.
20. M. Csikszentmihalyi, FLOW: The Psychology of Optimal Experience. Harper & Row, 1990.
21. C. Li, G. Jiang, and J.-M. Dewaele, "Understanding Chinese high school students' Foreign Language Enjoyment: Validation of the Chinese version of the Foreign Language Enjoyment scale," System, vol. 76, pp. 183–196, Aug. 2018, doi: 10.1016/j.system.2018.06.004.
22. L. K. Allen, S. A. Crossley, E. L. Snow, and D. S. McNamara, "L2 Writing Practice: Game Enjoyment as a Key to Engagement," LLT, vol. 18, no. 2, pp. 124–150, June 2014, doi: 10.64152/10125/44373.
23. Y. Jin, "The Development and Validation of the English Writing Enjoyment Scale," Percept Mot Skills, vol. 130, no. 1, pp. 555–575, Feb. 2023, doi: 10.1177/00315125221137649.
24. Y. Zhang and L. Dong, "A study of the impacts of motivational regulation and self-regulated second-language writing strategies on college students' proximal and distal writing enjoyment and anxiety," Front. Psychol., vol. 13, Aug. 2022, doi: 10.3389/fpsyg.2022.938346.
25. J. Rubin, "What the 'Good Language Learner' Can Teach Us," TESOL Quarterly, vol. 9, no. 1, p. 41, Mar. 1975, doi: 10.2307/3586011.
26. T. Sun and C. Wang, "College students' writing self-efficacy and writing self-regulated learning strategies in learning English as a foreign language," System, vol. 90, p. 102221, June 2020, doi: 10.1016/j.system.2020.102221.

27. B. L. Fredrickson, R. A. Mancuso, C. Branigan, and M. M. Tugade, "The Undoing Effect of Positive Emotions," Motiv Emot, vol. 24, no. 4, pp. 237–258, Dec. 2000, doi: 10.1023/a:1010796329158.
28. M. M. Tugade and B. L. Fredrickson, "Resilient Individuals Use Positive Emotions to Bounce Back From Negative Emotional Experiences," J Pers Soc Psychol, vol. 86, no. 2, pp. 320–333, Feb. 2004, doi: 10.1037/0022-3514.86.2.320.
29. V. M. C. Tze, L. M. Daniels, and R. M. Klassen, "Evaluating the Relationship Between Boredom and Academic Outcomes: A Meta-Analysis," Educ Psychol Rev, vol. 28, no. 1, pp. 119–144, Mar. 2016, doi: 10.1007/s10648-015-9301-y.
30. R. Pekrun, "Control-Value Theory: From Achievement Emotion to a General Theory of Human Emotions," Educ Psychol Rev, vol. 36, no. 3, p. 83, Aug. 2024, doi: 10.1007/s10648-024-09909-7.
31. T. Yen, "Writing Anxiety and Writing Strategy Use Among Taiwanese English Majors," Master's Thesis, National Taiwan Normal University, 2006. Accessed: Nov. 26, 2025. [Online]. Available: https://www.airitilibrary.com/Article/Detail/U0021-0712200716131511
32. N. Hu, "Investigating Chinese EFL Learners' Writing Strategies and Emotional Aspects," LEARN Journal: Language Education and Acquisition Research Network, vol. 15, no. 1, pp. 440–468, 2022.
33. Y. Wang, J. Xu, H. Li, and J. Qi, "The impact of future L2 selves and positive emotions on self-regulated writing strategies: A mixed method approach," Language Teaching Research, p. 13621688241229534, Feb. 2024, doi: 10.1177/13621688241229534.
34. X. Hu and H. Du, "The Effects of L2 Chinese Learners' Perceived Writing Anxiety on Their L1 Use within L2 Writing Performance among English Major Students in a Chinese University," ELT, vol. 17, no. 3, p. 85, Feb. 2024, doi: 10.5539/elt.v17n3p85.
35. W. Wang and Q. Wen, "L1 use in the L2 composing process: An exploratory study of 16 Chinese EFL writers," Journal of Second Language Writing, vol. 11, no. 3, pp. 225–246, Aug. 2002, doi: 10.1016/S1060-3743(02)00084-X.
36. L. Hu and P. M. Bentler, "Cutoff criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives," Structural Equation Modeling: A Multidisciplinary Journal, Jan. 1999, doi: 10.1080/10705519909540118.
37. A. M. Schoemann and T. D. Jorgensen, "Testing and Interpreting Latent Variable Interactions Using the semTools Package," Psych, vol. 3, no. 3, pp. 322–335, Sept. 2021, doi: 10.3390/psych3030024.
38. R. L. Oxford, Language learning strategies : what every teacher should know. Heinle & Heinle, 1990. Accessed: Oct. 09, 2025. [Online]. Available: https://cir.nii.ac.jp/crid/1970867909792823076
39. C. Li, "Foreign language learning boredom and enjoyment: The effects of learner variables and teacher variables," Language Teaching Research, vol. 29, no. 4, pp. 1499–1524, May 2025, doi: 10.1177/13621688221090324.
40. A. Field, Discovering Statistics Using IBM SPSS Statistics. SAGE Publications, 2024.
41. J. F. Hair, W. C. Black, B. J. Babin, and R. E. Anderson, Multivariate data analysis, Eighth edition. Andover, Hampshire: Cengage, 2019.
42. R. B. Kline, Principles and Practice of Structural Equation Modeling, Fourth Edition. Guilford Publications, 2015.
43. C. Fornell and D. F. Larcker, "Evaluating Structural Equation Models with Unobservable Variables and Measurement Error," Journal of Marketing Research, vol. 18, no. 1, pp. 39–50, Feb. 1981, doi: 10.1177/002224378101800104.
44. J. Cohen, Statistical Power Analysis for the Behavioral Sciences, 2nd ed. New York: Routledge, 2013. doi: 10.4324/9780203771587.
45. J. D. Eastwood, A. Frischen, M. J. Fenske, and D. Smilek, "The Unengaged Mind: Defining Boredom in Terms of Attention," Perspect Psychol Sci, vol. 7, no. 5, pp. 482–495, Sept. 2012, doi: 10.1177/1745691612456044.
46. M. Solhi, A. Derakhshan, M. Pawlak, and B. Ünsal-Görkemoğlu, "Exploring the interplay between EFL learners' L2 writing boredom, writing motivation, and boredom coping strategies," Language Teaching Research, p. 13621688241239178, Mar. 2024, doi: 10.1177/13621688241239178.
47. D. Van Weijen, H. Van Den Bergh, G. Rijlaarsdam, and T. Sanders, "L1 use during L2 writing: An empirical study of a complex phenomenon," Journal of Second Language Writing, vol. 18, no. 4, pp. 235–250, Dec. 2009, doi: 10.1016/j.jslw.2009.06.003.
48. Q. Wang, "Comparing the Effects of L1 and L2 Use in Prewriting Discussions on L2 Writing Quality: A Study on Intermediate CFL Learners," Int J App Linguistics, p. ijal.12782, June 2025, doi: 10.1111/ijal.12782.
49. F. G. Ashby, A. M. Isen, and A. U. Turken, "A neuropsychological theory of positive affect and its influence on cognition.," Psychological Review, vol. 106, no. 3, pp. 529–550, 1999, doi: 10.1037/0033-295X.106.3.529.
50. A. T. Nusbaum, C. G. Wilson, A. Stenson, J. M. Hinson, and P. Whitney, "Induced Positive Mood and Cognitive Flexibility: Evidence from Task Switching and Reversal Learning," Collabra: Psychology, vol. 4, no. 1, p. 25, Jan. 2018, doi: 10.1525/collabra.150.
51. R. L. Oxford, Teaching and Researching Language Learning Strategies: Self-Regulation in Context, Second Edition. New York: Routledge, 2016. doi: 10.4324/9781315719146.
52. A. Chen, "The Effects of Writing Strategy Instruction on EFL Learners' Writing Development," ELT, vol. 15, no. 3, p. 29, Feb. 2022, doi: 10.5539/elt.v15n3p29.
53. M. F. Teng, C. Qin, and C. Wang, "Validation of metacognitive academic writing strategies and the predictive effects on academic writing performance in a foreign language context," Metacogn Learn, vol. 17, no. 1, pp. 167–190, 2022, doi: 10.1007/s11409-021-09278-4.

54. L. Zhang, "Empowering Chinese college students in English as a foreign language writing classes: Translanguaging with translation methods," Front. Psychol., vol. 14, p. 1118261, Apr. 2023, doi: 10.3389/fpsyg.2023.1118261.
55. Y.-H. Chen and P. Baker, "Lexical bundles in L1 and L2 academic writing," LLT, vol. 14, no. 2, pp. 30–49, June 2010, doi: 10.64152/10125/44213.
56. Y. Wei and L. Lei, "Lexical Bundles in the Academic Writing of Advanced Chinese EFL Learners," RELC Journal, vol. 42, no. 2, pp. 155–166, Aug. 2011, doi: 10.1177/0033688211407295.
57. W. Xin, "An Exploration of Strategies to Enhance EFL Students' Academic Writing Capabilities From a Nominalization Perspective," UCER-A, vol. 14, no. 3, Mar. 2024, doi: 10.17265/2161-623X/2024.03.008.
58. N. J. Anderson, "The Role of Metacognition in Second Language Teaching and Learning. ERIC Digest," ERIC Clearinghouse on Languages and Linguistics, 4646 40th Street N, Apr. 2002. Accessed: Nov. 29, 2025. [Online]. Available: https://eric.ed.gov/?id=ED463659