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Investigating the Interplay of Foreign Language Enjoyment, Elaboration Strategies, Gender Differences, and Academic Achievement among Chinese EFL learners

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Abstract

The goal of this study was to determine whether the enjoyment of a foreign language predicted the use of elaboration strategies and academic achievement. It also sought to determine whether there were any gender-specific differences in these relationships in the context of English as a Foreign Language (EFL) in China. 536 Chinese secondary EFL students in grades 7 and 8 (ages 11 to 15) provided the data. In light of the findings of structural equation modelling analysis (SEM), learning success in the EFL was favourably connected with enjoyment of the foreign language, both directly and indirectly, through the use of elaboration techniques. Additionally, the results of the multi-group analysis demonstrated that gender had no effect on the indirect relationships between the enjoyment of foreign languages and EFL learning achievement, demonstrating the gender-invariance of the model of "foreign language enjoyment-elaboration strategies-EFL learning achievement." The literature on the mechanisms relating EFL proficiency and the growing body of research on female dominance in language learning are both enhanced by these findings. Future research directions, implications, and restrictions are considered.

1. INTRODUCTION

The discipline of foreign language teaching is rapidly embracing the positive psychology movement (MacIntyre & Gregersen, 2012), scholars and practitioners have recognized the significance of pleasant feelings of accomplishment on the outcomes of learning strategies (Obergriesser & Stoeger, 2020), academic engagement and achievement (Dewaele & Li, 2022; Wang, 2022), and psychological well-being (Gavala & Flett, 2005). Although extant literature documents that students' academic outcomes are influenced favourably by their love of their academic work (An et al., 2021; Dewaele & Li, 2022), research on the mediating mechanisms between these two variables is limited, particularly in the context of EFL in China. Furthermore, the preponderance of women in foreign language learning raised the possibility of gender inequalities in this field (Erdiana et al., 2019; Gu, 2002). However, few studies have compared the connections between academic success, pleasure of a foreign language, and

elaboration techniques across male and female EFL learners. These gaps were filled by this study by examining the model of relations between foreign language enjoyment, elaboration strategies, and academic achievement and comparing this model in male and female groups.

2. LITERATURE REVIEW

2.1.Foreign Language Enjoyment and Academic Achievement

Academic enjoyment is defined as a positive affective state experienced by students when their academic needs and expectations are fulfilled (J. M. Dewaele et al., 2018; Michalos, 2014). Control and value assessments are the two proximal antecedents of achievement emotions, according to Pekrun's (2006) control-value theory (CVT). Precisely, foreign language enjoyment is considered to be the emotional state generated by the integration of high-control appraisals and high-value appraisals. In addition to this, Pekrun et al. (2007) documented that achievement emotions could be described from three perspectives, including valence, activation level, and focus of the object. Positive success emotions can be distinguished from negative ones based on their valence, such as pleasant enjoyment from terrible boredom. Achievement emotions can be categorised into two groups based on their amount of physiological activation: physiologically deactivating emotions, such as boredom, and physiologically activating emotions, such as enjoyment. Achievement emotions, such as activity-related satisfaction and outcome-related shame, can be categorised according to object focus into activity-related emotions and outcome-related emotions. As a result, learning a foreign language might be thought of as experiencing a form of uplifting, motivating, activity-related emotion.

Given that enjoyment of a foreign language was thought to be a substantial predictor of academic performance, the predictive effects of foreign language enjoyment have been extensively researched in the literature already in existence. (Ainley & Ainley, 2011; Kang & Wu, 2022; Obergriesser & Stoeger, 2020). For example, Obergriesser and Stoeger (2020) found that foreign language enjoyment was positively correlated with cognitive learning strategies among German fourth-grade students. Kang and Wu (2022) documented that foreign language enjoyment was indirectly associated with academic achievement via the mediators of behavioural engagement, self-concept, and organizational strategy. As the positive psychology movement in the field of foreign language teaching expands, more research will be done on the effects and mechanisms of enjoying a foreign language on academic achievement (Dewaele & MacIntyre, 2014).

Previous studies offered a well-established theoretical framework for how foreign language enjoyment influences academic achievement. However, the existing studies have three problems that need more study. First, in earlier research on the connection between enjoyment and academic success, the mediating function of cognitive strategies (such as elaboration approaches) was less thoroughly explored. Second, possible gender differences were not taken into consideration when examining the relationship between the enjoyment of learning a foreign language and academic achievement. Third, previous studies were mainly based on college students (Wang, 2022) or primary school students (Tsang & Dewaele, 2023), however, few studies were conducted on secondary school students. The current study sought to overcome these limitations by analysing the association between academic success and the enjoyment of learning a foreign language in a sample of Chinese secondary EFL students.

2.2.Mediating Effect of Elaboration Strategies

Elaboration strategies (e.g., paraphrasing and using personal examples), as a kind of cognitive strategy, refer to the ways of linking prior knowledge with what someone has newly learned to make new material more memorable and meaningful (Bartsch et al., 2018). Brown et al. (2014) documented that prior knowledge is critical to newly learned knowledge and elaboration techniques help in this process to relate new learning to prior knowledge. According to the information processing theory (Nyikos & Oxford, 1993), elaboration strategies move material from short-term memory into long-term memory, which would add additional ideas for new information by associating it with existing knowledge.

In the educational context, the causes and effects of elaboration strategies have been investigated. Reigeluth (1983) documented that the core goal of elaboration strategies studies in education was to improve students' academic achievement. Empirically, Wood and Willoughby (1993) explored the link between elaboration strategies and achievement using data from 180 Canadian fifth-grade students and found that high-achieving students had more relevant knowledge to access elaboration strategies than low-achieving students. Similarly, In a study involving senior high school students, Priawasana et al. (2020) revealed that elaboration strategies were positively associated with academic achievement and critical thinking. Additionally, previous studies investigated the influence of accomplishment feelings on elaboration techniques (Artino & Jones, 2012; King & Areepattamannil, 2014; Obergriesser & Stoeger, 2020). For example, in a study with undergraduates from a U.S. service academy, Artino and Jones (2012) discovered a connection between academic enjoyment and metacognition and elaboration techniques.

Academic enjoyment may influence academic achievement, as was previously mentioned concerning elaboration strategies (e.g., Artino & Jones, 2012; Priawasana et al., 2020). However, further studies are needed to explore the relationship between academic enjoyment, elaboration strategies, and academic achievement in the Chinese EFL context. Especially, quite a few studies have involved Chinese secondary school students in these fields. Moreover, few studies have explored the gender differences in the relationship between the variables of academic enjoyment, elaboration strategies, and academic achievement. To fill these research gaps, this study was designed to examine the link between academic enjoyment, elaboration strategies, and academic achievement and the gender differences of the variable relationship among EFL learners in Chinese settings.

2.3. Moderating Role of Gender

Existing studies found that gender differences exist in achievement emotions, elaboration strategies, academic achievement as well as the relationships between these constructs (Carvalho, 2016; Chang, 2007; Denies et al., 2022; Weis et al., 2013), indicating that gender differences need to be specified if we are to understand the relationship between academic enjoyment, elaboration strategies, and academic achievement. Surprisingly, the possibility of gender differences in the patterns of the relationship between academic enjoyment, elaboration strategies, and academic achievement was seldom examined. Thereupon, in addition to exploring the relationship between the study variables, the possible gender differences in the patterns of the relationships were also explored.

2.4. Covariate

In this study, one major objective was to explore the linkage between academic enjoyment, elaboration strategies, and academic achievement in EFL education. However, prior studies demonstrated that there are age differences in achievement emotions (Raccanello et al., 2013), elaboration strategies (Willoughby et al., 1999), and academic achievement (Chyung, 2007). Therefore, age was taken as a covariate for examining the relationship between these three constructs.

2.5.Aims and Hypotheses of the Present Study

The literature provides evidence that academic enjoyment might affect academic achievement via the mediator of elaboration strategies (Artino & Jones, 2012; Wood & Willoughby, 1993). For the reason that achievement emotions, academic achievement, and elaboration strategies (Geurten et al., 2018; Goetz et al., 2006; Susperreguy et al., 2018) are all domain-specific constructs, the connection between these three notions should be investigated within a particular field of study (like EFL). Few researchers, however, have looked at the connection between academic success, elaboration techniques, and academic fun in the setting of EFL. The following hypotheses were thus put to the test in the current investigation.

H_1: EFL learners' elaboration strategies partially mediates the link between foreign language enjoyment and EFL achievement.

H_2: The structural relationships between enjoyment, elaboration strategies, and EFL achievement are invariant across gender.

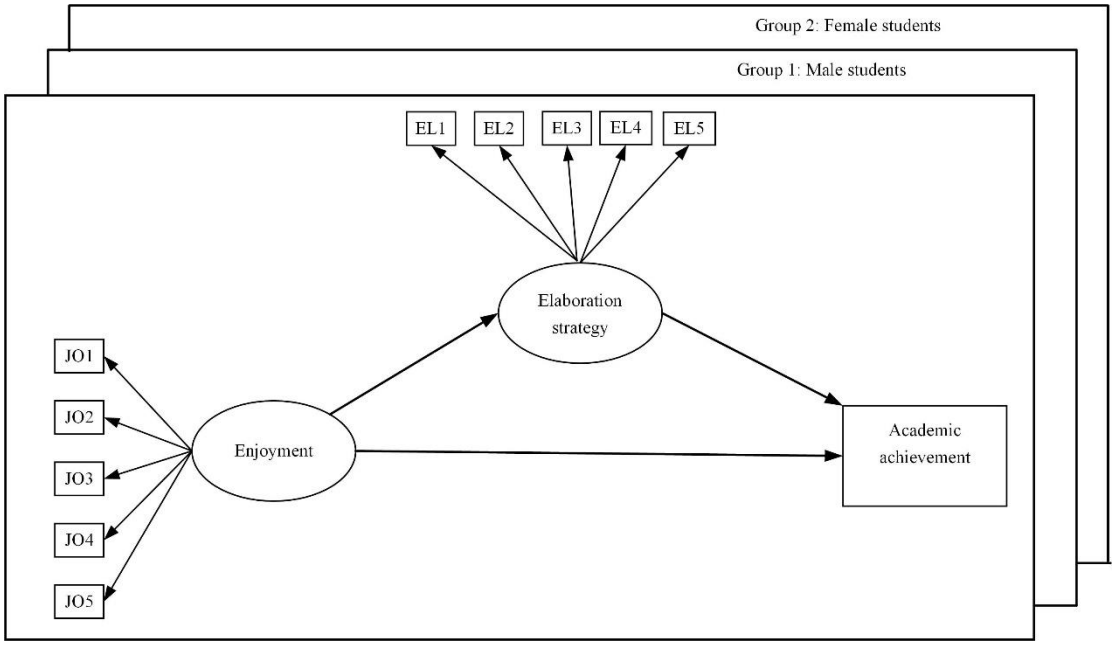

Figure 1. Hypothesized framework for this study.

3. METHODOLOGY

3.1.Participants

There were 536 Chinese secondary school students who study English as a foreign language (*N* 7th graders = 222 and *N* 8th graders = 314) participated in this study. 252 female students (47.0%) and 284 male students (53.0%) made up the sample. The participants were 13.66 years old on average (SD = 0.62) in age. The great majority of participants come from

middle-class families as far as family socioeconomic position is concerned. The research school's whole seventh and eighth-grade student body was enlisted to take part in the questionnaire survey. Participants, their English instructors, parents, or legal guardians all completed written informed consent forms before the questionnaire poll being conducted. Only participant data that was given written informed permission would be examined.

3.2.Measures

3.2.1. Foreign Language Enjoyment

To account for the domain specificity of achievement emotions, we adapted the items of the Achievement Emotions Questionnaire (AEQ) (Pekrun et al., 2011) to fit the EFL learning scenario. This study concentrated on the classroom-related emotions and participants' enjoyment experienced in English class was measured. This scale contains five items (e.g., "I look forward to my English class"). A Likert scale of 1 (strongly disagree) to 5 (strongly agree) was used to score the items. The more highly participants scored on this measure, the more they enjoyed studying English. In this study, the Cronbach's alpha value for enjoyment scale was 0.872, indicating strong internal consistency. In the SEM analysis phase, the variable of enjoyment was treated as a latent variable.

3.2.2. Foreign Language Elaboration Strategies

Five modified questions from the Goal Orientation and Learning Methods Survey (GOALS-A) were used to evaluate foreign language elaboration methods (Dowson & McInerney, 2004). The foreign language elaboration strategies scale is a five-item self-report scale. The items were rated on a 5-point Likert scale, ranging from "strongly disagree = 1" to "strongly agree = 5". One example item is "I try to understand how what I learn in English class is related to other things I know" . With a Cronbach's alpha of 0.856, the scale measuring foreign language elaboration strategies had a high level of internal consistency. Foreign language elaboration strategies were also proposed as a latent variable in the SEM analysis.

3.2.3. EFL Learning Achievement

The participants' most recent final exam English results were utilised as a stand-in for their EFL learning achievement. The local Municipal Education Bureau prepared the final English test paper, which consisted of five different sorts of questions covering vocabulary, grammar, language communication, reading comprehension, and writing. The passing score on the test is 60 points, and the total mark is 100 points. Participants who received higher ratings demonstrated more EFL learning achievement. The SEM analysis in this study modelled the EFL learning achievement as an observable variable.

3.2.4. Covariates

Examining the link between enjoyment, elaboration techniques, and learning achievement was one of the two goals of the current study. The other was to determine if there are gender variations in the relationship between the studied variables. However, prior studies found that gender and age differences in academic enjoyment (Huang & Jiang, 2022; Vierhaus et al., 2016), elaboration strategies (Magogwe & Oliver, 2007; Viriya & Sapsirin, 2014), and academic achievement (Naderi et al., 2009). In order to investigate the linkage between the study variables, gender (i.e., 0 = male; 1 = female) and age (12–15) were factors that were controlled.

3.3. Data Analysis

Mplus 8.3 was used to analyse the data in three steps (Muthén & Muthén, 2013). First, confirmatory factor analyses (CFAs) were carried out to evaluate the suggested measurement model, along with descriptive statistics and bivariate correlations among the study variables. Second, SEMs were applied to dig into the relationships between enjoyment, elaboration strategies, and achievement. Additionally, the bootstrapping methods were adopted to examine the significance of indirect effects (Hayes & Scharkow, 2013). The bias-corrected and accelerated 95% confidence interval (BCa 95% CI) of the mediating effects was specifically calculated using 5000 data re-samples. The indirect mediation effect is substantial if the BCa 95% CI does not contain zero.

Third, multi-group SEM was used to examine any potential gender differences in how the research variables—foreign language enjoyment, elaboration techniques, and EFL learning achievement—relate to one another. Concretely, we first examined the measurement invariance of the study variables since it is the precondition to evaluate structural invariance across different groups (Wang & Wang, 2019). And then, in a step-by-step evaluation, three hierarchical models of configural invariance, metric invariance, and scalar invariance were assessed (Jeong & Lee, 2019; Vandenberg & Lance, 2000; Wang & Wang, 2019). If the overall model fit is satisfactory (Little, 1997) and the CFI between the two nested models is less than or equal to 0.01 (Cheung & Rensvold, 2002), measurement invariance would be established.

4. RESULTS

4.1. Preliminary Analysis

The variables are included in Table 1 together with their descriptive statistics and Pearson product-moment correlations. In this study, EFL learning achievement was considered as the dependent variable while foreign language enjoyment was handled as the independent variable. Age and gender were treated as the study's controls. As anticipated, elaboration strategies and achievement in learning an EFL were strongly connected with FL enjoyment. A very favourable association between elaboration tactics and EFL learning styles was also found.

Table 1 Pearson product-moment correlations and descriptive statistics for the study variables

Construct	Mean	SD	Factor loadings	Skewness	Kurtosis	1	2	3	4	5
1. Enjoyment	3.831	.710	.646-.861	-.335	.175	1				
2. Elaboration	2.928	.524	.602-.796	-.193	.957	.610**	1			
3. Achievement	90.739	21.760	-	-.853	-.112	.338**	.360**	1		
4. Gender	-	-	-	-	-	.016	.047	.109*	1	
5. Age	-	-	-	-	-	.093*	.025	-.094*	-.054	1

Note. ** $p < .01$. * $p < .05$.

To estimate parameter weights in the present study, the maximum likelihood (ML) estimator was utilized. In order to assess the goodness of fit, several indices were employed. Specifically, the comparative fit index (CFI), Tucker-Lewis index (TLI), root-mean-square error of approximation (RMSEA), and standardized root-mean-square residual (SRMR) were utilized to evaluate the goodness of fit. We followed the traditional cutoff criteria indicative of excellent and adequate fit, which include (1) CFI and TLI ≥ .95 and ≥ .90; (2) RMSEA ≤ .06 and ≤ .08; (3) SRMR ≤ .08 and ≤ .10, respectively (Chen, 2007; Hu & Bentler, 1999). Accordingly, we found that the measurement model showed an excellent fit: $\chi^2(34) = 95.144$, $p < .001$, CFI = .978, TLI = .971, RMSEA = .058, 90% CI [.044, .072], SRMR = .038. In Table 1, the factor loadings of enjoyment and elaboration strategies ranged from 0.602 to 0.861, which were adequate because they were greater than 0.6 (Matsunaga, 2010).

4.2. Examing The Structural Model

For the measurement model to demonstrate a good fit, we first conducted the SEM analysis to test the hypothesized model (see Figure 1). In this process, gender and age were controlled as control variables. Results of SEM analysis indicated that the hypothesized model had an excellent model fit: $\chi^2(60) = 135.262$, $p < .001$, CFI = .974, TLI = .966, RMSEA = .048, 90% CI [.038, .059], SRMR = .042. The hypothesized model with standardised regression weights is shown in Figure 2. In Figure 2, there were three significant direct path coefficients, including Path 1 from enjoyment to elaboration strategies ($\beta = .669$, $p < .001$), Path 2 from elaboration strategies to EFL learning achievement ($\beta = .254$, $p < .001$), and Path 3 from enjoyment to EFL learning achievement ($\beta = .209$, $p < .01$). Besides, the negative relationship between age and EFL learning achievement ($\beta = -.114$, $p < .01$) and the positive relationship between gender and EFL learning achievement ($\beta = .085$, $p < .05$) were also significant, which indicated that EFL learning achievement decreased with age, and female students' EFL learning achievement were better than that of male students. The proposed model explained significant proportions of variance in foreign language elaboration strategies (45.1%) and EFL learning achievement (20.5%).

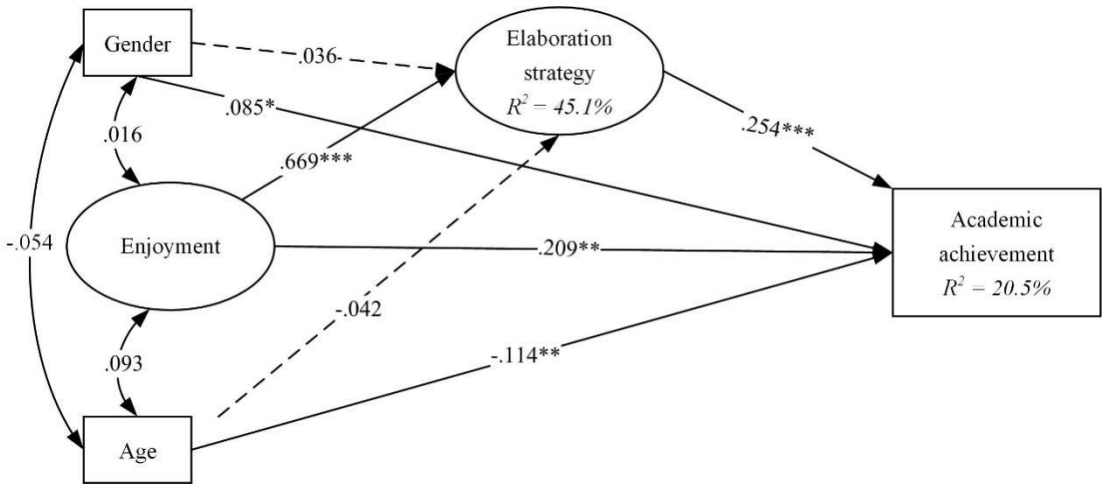

Figure 2. SEM analysis of the linkage between foreign language enjoyment, elaboration strategies and EFL learning achievement. Dashed lines represent insignificant paths. *** p < .001; ** p < .01; * p < .05.

Bootstrap method upon 5000 samples was performed to test foreign language elaboration strategies' mediating role between foreign language enjoyment and EFL learning achievement. Results are presented in Table 2. The foreign language elaboration strategies' mediating effect was significant for the BCa 95% CIs did not include zero. Accurately, enjoyment would affect EFL performance via the mediator of foreign language elaboration strategies (β = .170, 95% CIs [.087, .254]). Also, the direct effect of foreign language enjoyment on EFL achievement was significant (β = .209, 95% CIs [.084, .332]), indicating that students' use of elaboration strategies somewhat mediated the association between these two constructs.

Table 2 Effects of elaboration strategies in both direct and indirect ways

Model path	Effect	*SE*	BCa 95% CIs	
			Lower	Upper
Enjoyment → Elaboration strategies → Academic achievement				
Total effect	.380	.044	**.288**	**.458**
Direct effect	.209	.064	**.084**	**.332**
Indirect effect	.170	.043	**.087**	**.254**

Note: Bolded CIs considered significant for zero were not included.

4.3. Multigroup Sem

To study gender invariance in the relationship between enjoyment, elaboration strategies, and academic achievement in the context of EFL education, multigroup SEM was carried out. We tested for the measurement invariance of three models in a step-by-step manner to obtain a strong measurement invariance, those are, configural, metric, and scalar models. First, all factor loadings and thresholds were set free across the male and female groups (Wang & Wang, 2019). Results of the configural model had a good fit: χ^2 (68) = 118.693, CFI = .981, TLI = .975, RMSEA = .053, 90% C.I. [.037, .068], SRMR = .041, showing that the configural model was established. That is, the indicator-factor loadings' size and distribution were identical across male and female groups. The invariance of metric and scalar models was also investigated subsequently, as shown in Table 3.

Second, metric invariance was tested. For this step, factor loadings were equally constrained across male and female groups. Results of the metric model revealed a good fit: χ^2 (76) = 125.942, CFI = .982, TLI = .978, RMSEA = .050, 90% C.I. [.034, .065], SRMR = .053), and the ΔCFI = 0.001. This indicated that metric invariance was established between male and female groups.

Third, scalar invariance was tested across male and female groups. Particularly at this stage, all item factor loadings and item intercepts were required to be identical between the two

groups. Results of the scalar model demonstrated good fit: χ^2 (86) = 134.526, CFI = .982, TLI = .981, RMSEA = .046, 90% C.I. [.030, .060], SRMR = .057), and ΔCFI = 0.000, indicating that scalar invariance was established across male and female groups.

In sum, the overall model fits were good, and the results of the measurement invariance tests revealed that there was scalar, metric, and configural invariance across the male and female groups (see Table 3). To put it another way, there was a significant degree of measurement invariance between male and female groups, which provided a condition for examining structural invariance.

Table 3 Fit indices for measurement invariance tests of the model across gender

	χ^2	*df*	CFI	ΔCFI	TLI	RMSEA	90% C.I.	SRMR
Configural invariance	118.693	68	.981	-	.975	.053	.037,.068	.041
Metric invariance	125.942	76	.982	0.001	.978	.050	.034,.065	.053
Scalar invariance	134.526	86	.982	0.000	.981	.046	.030,.060	.057

Being that strong measurement invariance was established, the null hypothesis of identical route coefficients in the hypothesized model for male and female groups was investigated using the "Model test" command in *Mplus* 8.3 (Muthén & Muthén, 2013; Wang & Wang, 2019). If the *Wald* test of significance demonstrated the coefficients were statistically significant for gender, one specific structural path would be constrained to be equal at a time. If the *Wald* test was not significant, the analysis would be stopped. According to the findings of omnibus *Wald* tests (Wald $\chi^2(3)$ = 7.207 and p = .07), there were no gender-specific differences that were statistically significant in the path coefficients.

5. DISCUSSION

Exploring the mediator between foreign language enjoyment and success with EFL acquisition was one of the study's two research goals. Researchers are becoming more concerned about how positive success emotions (such as enjoyment and hope) impact academic results as positive psychology in education continues to advance. However, few studies have examined the connections and underlying mechanisms between the enjoyment of foreign languages and academic success in EFL acquisition (for an exception, see Kang and Wu, 2022). In order to assess the mediating function of foreign language elaboration strategies in the relationship between enjoyment and academic performance, data from a sample of 536 EFL learners was employed.

The present study discovered that foreign language enjoyment has an impact on EFL learning achievement via foreign language elaboration strategies. This finding supports H_1. This result is in line with past studies in that foreign language enjoyment could positively affect EFL learning achievement (Dewaele & Li, 2022; Kang & Wu, 2022; Tsang & Dewaele, 2023; Zhang et al., 2020). However, this work contributes to the literature by way of proving that elaboration tactics were the mediating factor between enjoyment and EFL learning performance. Additionally, this data supports the CVT' claim that positive accomplishment emotions (e.g., enjoyment) are favourably connected with academic achievement (Pekrun, 2006).

The second finding was that the structural links between foreign language enjoyment, and elaboration strategies were invariant across gender, suggesting that H_2 was supported. Previous studies cognized that there were gender differences in achievement emotions, elaboration strategies, and academic achievement (Huang & Jiang, 2022; Naderi et al., 2009; Viriya & Sapsirin, 2014). However, few studies have explored the possible gender variations in the connections between these three study variables. This work makes a positive contribution to the existing literature by identifying that the model relationships between these three variables were invariant across male and female groups.

5.1.Implications, Limitations and Directions for Future Research

The current investigation offers consequences for both theory and practice. First, this study primarily proved that elaboration strategies were the underlying mechanisms by which enjoyment affects EFL achievement. Specifically, this investigation first demonstrated that foreign language elaboration tactics functioned as a mediator between enjoyment and EFL achievement, which fills a gap regarding the mechanisms by which academic enjoyment affects academic outcomes. In consequence, EFL educators and policymakers are recommended to take measures (e.g., respect and care for students, encourage students and emphasize the value of learning EFL to them) to increase students' foreign language enjoyment (Gorard & See, 2011; Pekrun & Stephens, 2010; Yang et al., 2021). Second, this investigation provided proof that the chain path of "foreign language enjoyment→foreign language elaboration strategies learning achievement" is invariant across male and female groups, indicating that both male and female students might follow the same course. This finding suggests that EFL educators need not consider gender differences in the process of improving their students' academic outcomes by intervening with academic enjoyment and elaboration strategies.

This investigation adds to the body of knowledge by examining the connection between FL enjoyment, elaboration strategies, and EFL achievement and exploring the invariance of this structural relationship across male and female groups. Nonetheless, there are three constraints that require attention and resolution. Initially, this study is conducted using a cross-sectional design, so that the causal link between the studied variables could not be drawn. Particularly, scholars found that prior academic achievement could also affect emotions (academic enjoyment) (Pekrun & Perry, 2014; Putwain et al., 2018). As a result, it is advisable to investigate the bidirectional relationship between the study variables in a longitudinal design. Second, the data were self-reported, implying that there is a possibility of common method bias that cannot be entirely disregarded (Podsakoff et al., 2003). To avoid the possible common method bias, we suggest to adopt information from participants' significant others in addition to participants' self-reported data. Third, the present study found that elaboration strategies partially mediated between foreign language enjoyment and EFL learning achievement, implying that there might be other factors that function as mediators between foreign language enjoyment and EFL learning achievement. In the future, we advised to consider additional mediators in order to enhance the understanding of the underlying mediating mechanisms between these two constructs.

6. CONCLUSION

The current research investigated how foreign language enjoyment influences EFL learning achievement among 536 Chinese secondary EFL students, considering both direct and indirect effects. This study discovered that foreign language enjoyment could affect EFL

learning achievement directly and indirectly. These indirect effects were mediated by the use of elaboration strategies. Moreover, gender invariance in the chain path of "foreign language enjoyment→foreign language elaboration strategies learning achievement" was also confirmed. On the one side, we offer empirical evidence supporting the CVT, which suggests that students' positive emotions, such as enjoyment, could positively promote their academic achievement in EFL learning. On the other side, the finding that the structural relationship among the studied constructs remained consistent across different genders, suggests that educators could enhance male and female EFL learners' elaboration strategies by improving their enjoyment level, thereby achieving the betterment of their EFL learning achievement.

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