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Exploring the interplay of parental support, achievement emotions, and foreign language engagement: An analysis of mediation

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Abstract: This research explores the emotional bond between parental support (PS) and student engagement in learning English as a foreign language (EFL). To investigate the relationship between EFL learners' perceptions of PS, EFL-related achievement emotions (specifically, enjoyment and boredom), and EFL engagement, this study was conducted based on data drawn from 527 students from grades 7 and 8 in China, comprising 280 boys and 247 girls. Besides, the moderating effect of age and prior EFL achievement on the proposed relationship was also examined. Upon adjusting for age and previous performance, structural equation modelling (SEM) and mediation analysis findings indicate a positive correlation between PS and their engagement in learning English. Also, it was found that EFL-related enjoyment and boredom mediated the linkage between PS and engagement. Furthermore, multi-group analyses were conducted to examine the invariance of the mediation model across gender and grade levels. The model (PS → achievement emotions → learning engagement) was invariant across gender and grade levels, showing that the study model applied to both male and female seventh and eighth graders. These findings illuminate the emotional relationship between parental support and their children's EFL engagement. This study expanded the literature on EFL engagement by examining how age and grades impact the network of relationships among student-perceived parental support, emotion and EFL engagement.

Keywords: Parental support, EFL enjoyment, EFL boredom, EFL engagement, Multi-Group analysis

1. Introduction

The control-value theory (CVT) suggests that achievement emotions matter for crucial school outcomes such as learning engagement, motivation, and academic performance) and are influenced by control and value appraisals, among other factors (Pekrun, 2006). Based on the social support theory, the contributive effects of social support on students' psychological well-being have been confirmed (Arslan, 2018). For example, scholars have extensively explored the role of PS in promoting children's academic performance (Bradley *et al.*, 2021; Hill & Tyson, 2009), and more research has been done on teacher support than on PS (Huang, 2016). Whether PT could positively affect academic and psychological outcomes remains to be explored. Also, to our knowledge, no research has investigated the intermediary processes linking PS and engagement in EFL education. Although we may hypothesise that PS could affect learning engagement through achievement emotions, questions remain about how the mediation path (i.e., "PS → achievement emotions → learning engagement") works differently for participants of varying ages and prior academic performance. With Chinese secondary EFL learners as participants, this research tried to close the knowledge gap by modelling the relationship between PS, achievement emotions, and EFL engagement. Meanwhile, whether the proposed mediation path differs by prior academic performance and age would also be investigated within a group of secondary school students from China.

2. Literature Review

2.1 Parental Support

Parental support refers to the praise, encouragement, and physical affection that parents give their children during the parent-child relationship, in which they feel accepted and loved (Barnes *et al.*, 2000). Demonstrated that



PS is mainly reflected in the following five dimensions (Kristjansson *et al.* 2011): (1) care and warmth for children; (2) providing advice about studies; (3) discussing personal affairs with children; (4) providing pieces of advice about other issues; and (5) assistance with other things. Given that PS is a significant factor in academic success and psychological well-being (Đurišić & Bunijevac, 2017), further investigation is required to explore the direct and indirect impacts of PS on children's learning engagement.

Existing studies examined the buffering effects of PS on students' academic outcomes and psychological well-being (Bradley *et al.*, 2021; de Graaf *et al.*, 2010; Luo *et al.*, 2016), contributing to the formation of this study's theoretical framework. For example, (Bradley *et al.*, 2021) discovered that a positive association between PS and student engagement and performance among Australian secondary school students aged 11 to 16. In another study with American high school students, (Plunkett *et al.*, 2007) studied the relationship between PS and daily depression and found that students' self-esteem mediated these two constructs. Based on the CVT, (Luo *et al.*, 2016) documented that PS could affect mathematics-related achievement emotions via the mediators of control and value appraisals.

The CVT posits that achievement emotions are crucial determiners of key school outcomes (e.g., learning engagement, motivation, and achievement) (Kang & Wu, 2022; Pekrun, 2006; Pekrun *et al.*, 2002; Pekrun & Perry, 2014). The research reviewed above demonstrated that PT was significantly correlated with students' emotions and learning engagement (Bradley *et al.*, 2021; Luo *et al.*, 2016). We hypothesized that PT might affect learning engagement via achievement emotions. Two deficiencies require further exploration. First, related studies were mainly conducted in Western cultural contexts, and Chinese students influenced by Confucian heritage culture have not been explored, which might limit the application scope of the theoretical assumptions. Second, considering the domain-specificity of learning engagement and achievement emotions (Goetz *et al.*, 2006; Green *et al.*, 2007; Shao *et al.*, 2020), relevant research is required to be limited to a specific subject (e.g., English). However, most of the research focused on mathematics and science, and few studies examine the association between PS, engagement, and emotions in EFL education. Accordingly, the present study was designed to resolve these research gaps.

2.2 Foreign Language Emotions

In some broad sense, achievement emotions encompass the range of emotional experiences felt during learning activities or in response to achievement outcomes (Pekrun, 2006). (Pekrun *et al.*, 2002) identified eight most commonly experienced achievement emotions by conducting a series of qualitative and quantitative studies. According to (Pekrun *et al.*, 2007), a concrete emotion can be construed from object focus, valence, and activation perspectives. Taking enjoyment as example, it is described as a positive, activating, activity-related emotion. For achievement emotions to be domain-specific (Goetz *et al.*, 2006), we explored achievement emotions in an EFL context and defined foreign language emotions as the emotional experience that related to EFL learning activities or outcomes.

Extensive exploration has been conducted on the precursors and outcomes of emotions under the framework of CVT. For example, focusing on academic enjoyment, (Kang and Wu 2022) found academic enjoyment, mediated through behavioural engagement, influenced EFL learners' learning outcomes. Similarly, there is research verified the role of behavioral engagement as a mediator in the connection between academic boredom and EFL achievement (Wu & Kang, 2023). These empirical studies show that achievement emotions predict learning engagement. Besides, the beneficial effect of social support (e.g., parental support) on achievement emotions has been confirmed (Ahmed *et al.*, 2010; Pekrun & Stephens, 2010). Thus, it is reasonable to assume that PS might affect EFL engagement via achievement emotions.

As presented above, achievement emotions might mediate PS and learning engagement. However, there are two problems with such a mediation model. First, this mediation model has not been proven in the EFL field. Second, the possible effect modification by age and prior EFL achievement has not been explored. Accordingly, the present study first tested the mediation model between PS, academic enjoyment, academic boredom, and EFL engagement in an EFL setting. Further, the possible age and prior achievement differences in the relationship between the study variables were also investigated.



2.3 Foreign Language Engagement

Academic engagement was traditionally viewed as the overt manifestation of motivation, referring to an individual's learning-related positive and fulfilling state of mind, which is composed of vigour, dedication, and absorption (Schaufeli *et al.*, 2002). The present study focused on EFL education and defined EFL engagement as learners' active involvement in EFL-related learning activities. Scholars have also studied the elements of academic engagement and reached a consensus that academic engagement includes behavioural, emotional, and cognitive engagement (Fredricks *et al.*, 2004; Sinatra *et al.*, 2015; Skinner *et al.*, 2008). Also, the relationships among the three elements of academic engagement were explored from the perspective of significance to school outcomes, and it found that behavioural engagement was the most important element of academic engagement for the other two elements affect school outcomes via behavioural engagement (Conner, 2016; Yang *et al.*, 2021).

Because of the importance of EFL engagement for EFL learning outcomes, thorough research has been conducted on the factors leading to EFL engagement and its subsequent impacts (Bradley *et al.*, 2021; Chen, 2008; Feng & Hong, 2022; Luo *et al.*, 2016). A recent study by (Feng and Hong 2022) involving senior high school students discovered that EFL engagement mediated the two constructs between EFL enjoyment and performance. Meanwhile, the positive effects of PS on academic engagement (Bradley *et al.*, 2021) and achievement emotions (Luo *et al.*, 2016) were also confirmed. Thus, it could be assumed that PS, mediated by achievement emotions (e.g., EFL enjoyment and boredom), affects EFL engagement. However, in addition to validating this mediation model in the Chinese EFL settings, more research is required to identify any potential variances between different groups (e.g., male and female). Correspondingly, this study aimed to fill these deficiencies in the existing studies.

2.4 The Moderating Role of Prior Achievement and Age

The age and prior academic achievement differences in students' PS, achievement emotions, and academic engagement have been deliberated on in the previous studies. For example, (Meyer and Schlesier 2022) studied the development of students' achievement emotions during the transition from primary school to junior high school and found that positive emotions (e.g., enjoyment and pride) generally declined, and negative emotions (e.g., boredom and hopelessness) generally increased. Besides, comparisons of achievement emotions between high- and low-performing students were also conducted. For instance, (Velasco *et al.* 2015) found that high-performing students would experience more enjoyment and be more persistent in learning tasks than their low-performing counterparts. Based on the theoretical hypothesis of the CVT and findings of empirical studies, the present study hypothesized that PS would affect EFL engagement through the mediators of EFL enjoyment and EFL boredom. However, few studies have explored the moderating effects of age and prior academic achievement on the relationship between PS, EFL enjoyment, EFL boredom, and EFL engagement. Thus, the present study will also explore the validity of the mediation model across ages and different performing groups.

2.5 Foreign Language Emotions

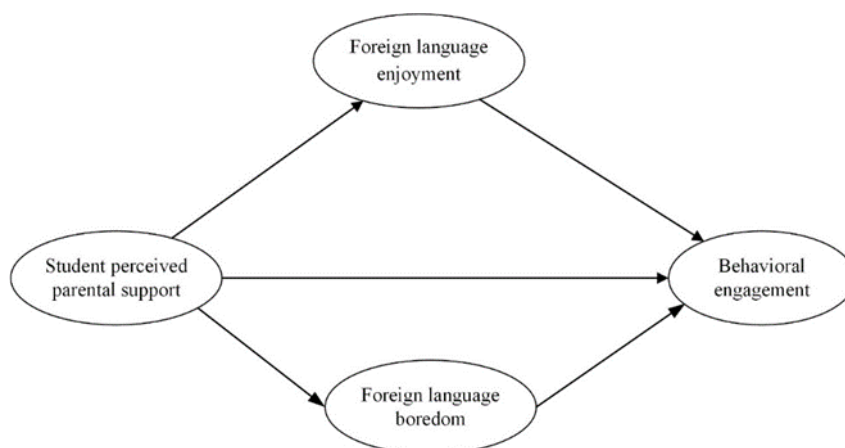


Figure 1. Conceptual model of the present study

Note. Age and prior foreign language achievement were controlled as covariates.

The current study sought to enhance existing literature by addressing the following two inquiries based on the literature review.

First, what is the relationship between perceived PS and EFL engagement?

Second, do achievement emotions mediate the connection between PS and EFL engagement?

3. Method

3.1 Participants

Data were collected from five hundred and twenty-seven secondary school students. Convenience sampling was utilized to choose participants from a single middle school in Foshan City, Guangdong Province, mainland China. Specifically, participants were composed by 280 male students (53.1%) and 247 female students (46.9%). The age range was 12 to 15 years old, with a mean age of 13.67 (SD = .61). Before carrying out the questionnaire survey, participants read and signed the written informed consent form. In addition, parental or legal guardians' consent that allowed their children to participate in the questionnaire survey was also obtained. We only analyzed participant data that had signed a written consent

3.2 Foreign Language Emotions

The purpose of this study was to find a link between parental support, achievement emotions, and student engagement while controlling for age and prior academic performance. The related constructs were measured by measures from classical documents. And the items of each scale were answered on a five-point Likert scale, with 1 denoting "strongly disagree" and 5 denoting "strongly agree". Therefore, the higher the score, the stronger the approval of the corresponding item. Besides, PS, EFL enjoyment and boredom, and learning engagement were treated as latent variables in the SEM analyses.

3.2.1 Student Perceived Parental Support Scale

Participants' perception of PS was measured using four items adapted from the child and adolescent social support scale (Malecki & Demaray, 2002). The original scale was not subject-specific. We adapted it to be relevant to the settings of EFL education. One example item is "My English teacher helps me to solve learning problems by giving me information". The existing studies have verified the internal consistency and construct validity of the PS scale (Tian *et al.*, 2016). The internal consistency of the PS scale was good (see Table 1).

3.2.2 Foreign Language Enjoyment and Boredom Scale

EFL enjoyment and boredom were measured by the items adapted from the achievement emotions questionnaires (Pekrun *et al.*, 2011). The items were adapted for the context of EFL education because achievement emotions are domain-specific. Both the EFL enjoyment scale (e.g., "I look forward to my English class") and the EFL boredom scale (e.g., "I get bored during English class") consists of four items. The psychometric properties of these two scales have been proven to be appropriate (e.g., Kang & Wu, 2022; Wu & Kang, 2023). In the present study, the internal consistency of EFL enjoyment and EFL boredom were good (see Table 1).

3.2.3 Foreign Language Emotions

Foreign language engagement was measured by the four items extracted from the engagement vs. dissatisfaction with learning questionnaire (Skinner *et al.*, 2009). One example of the EFL engagement scale is "I try hard to do well in English class". The psychometric properties of this scale have been verified in previous studies (Wu & Kang, 2023). The internal consistency of this scale in the present study was good (see Table 1).



3.2.4. Prior Foreign Language Achievement and Age

Previous studies found that prior academic achievement and age affect learning engagement and achievement emotions (Meyer & Schlesier, 2022; Velasco *et al.*, 2015). Thus, to better understand the link between PS, EFL achievement emotions and EFL engagement, both age and students' prior EFL achievement were controlled as covariates. The prior EFL achievement was obtained from the academic affairs office of the research school. The basic information of the participants was also collected, including their age, gender and family socioeconomic status.

3.3 Data Analysis

In the mediation model of the present study, PS was the exogenous latent variable, EFL engagement was treated as the endogenous latent variable, and EFL enjoyment and boredom were the possible mediators between these two variables. The prior EFL achievement (standardized z-scores) and age were observed variables and were controlled while exploring the relationship between the study variables.

Given that the data were self-reported and the problem of possible common method variance could not be entirely removed (Podsakoff *et al.*, 2003). After detecting common method bias, data analyses were conducted. First, preliminary information was provided by descriptive statistics. Then confirmatory factor analyses (CFAs) were conducted to test the properties of the measurement models. Subsequently, prior EFL achievement and age were controlled in the CFA to generate bivariate correlations between the study variables. Second, SEM was employed to examine the structural relationships outlined in the proposed model (see Figure. 1). Third, a bootstrap method was utilized with 5000 resamples to calculate 95% bias-corrected confidence intervals (BC 95% CIs) to test the mediating effects of EFL enjoyment and boredom between PS and EFL engagement. If the BC 95% CIs do not include zero, it means that there is a mediating effect between the independent variable (i.e., PS) and dependent variable (i.e., EFL engagement) (Tofiqhi & Kelley, 2020).

4. Results

4.1 Common Method Bias Test

Table 1 presents the descriptive statistics and factor loadings of the study variables. (Finney and DiStefano 2006) argued that data could be considered normal if the absolute value of skewness is less than 2 and the absolute value of kurtosis is less than 7. Table 1 shows that all the study variables satisfy the criteria proposed by (Finney and DiStefano 2006), indicating that all the study variables had satisfactory normality for the maximum likelihood estimation. Moreover, Cronbach's α ranged from .774 to .865, suggesting that the internal consistency of all study variables was good.

Table 1. Descriptive statistics and factor loadings

	Mean	SD	Skewness	Kurtosis	Cronbach's α	Factor loadings
PS	3.721	.754	-.277	-.057	.784	.660-.708
EFL enjoyment	3.929	.739	-.489	.419	.865	.637-.867
EFL boredom	2.140	.745	.408	.076	.774	.591-.737
EFL engagement	2.958	.555	-.136	.431	.842	.680-.817
EFL achievement	.000	.999	-.859	-.119	-	-

4.3 Measurement Models and Latent Bivariate Correlations

CFA and all subsequent analyses were conducted using Mplus 8.3 (Muthén & Muthén, 2013). A set of model fit criteria were utilized to evaluate the model fit, including comparative fit index (CFI), Tucker-Lewis's index (TLI), root mean square error of approximation (RMSEA), and standardized root mean square residual (SRMR). The cutoff criteria proposed by (Hu and Bentler 1999) were implemented. Specifically, the measurement model fit the data well if the values of CFI and TLI $\geq .95$, RMSEA $\leq .06$, and SRMR $\leq .08$. According to these criteria, it could be found that



the measurement model had an excellent fit: $\chi^2(98) = 211.888$, $p < .001$, CFI = .971, TLI = .965, RMSEA = .047, 90% CI [.038, .056], SRMR = .038. Also, factor loadings ranged from .591 to .867, which were substantial according to the standard (higher than .40) proposed by (Hair Jr et al. 2019) (see Table 1).

Table 2. Latent bivariate correlations

	1	2	3	4	5	6
1 PS	-					
2 EFL enjoyment	.513***	-				
3 EFL boredom	-.472***	-.779***	-			
4 EFL engagement	.563***	.739***	-.686***	-		
5 Prior achievement	.221***	.378***	-.411***	.455***	-	
6 Age	.053	.097*	.003	.028	-.094*	-

*p < .05; ***p < .001.

The measurement model demonstrated an excellent fit when prior EFL achievement and age were added: $\chi^2(123) = 245.175$, $p < .001$, CFI = .970, TLI = .963, RMSEA = .043, 90% CI [.035, .051], SRMR = .038. On the basis that the measurement model excellently fit the data, SEM analyses were carried out to explore the latent bivariate correlations between the study variables (see Table 2). First, we found that PS was significantly correlated with EFL enjoyment, EFL boredom, EFL engagement, and prior achievement at $p < .001$. Second, EFL enjoyment was positively correlated with EFL engagement and prior achievement at $p < .001$ and was positively related to age at $p < .05$. Third, EFL boredom was found to be negatively correlated with EFL engagement and prior achievement at $p < .001$.

4.4 Structural Equation Modelling Analyses

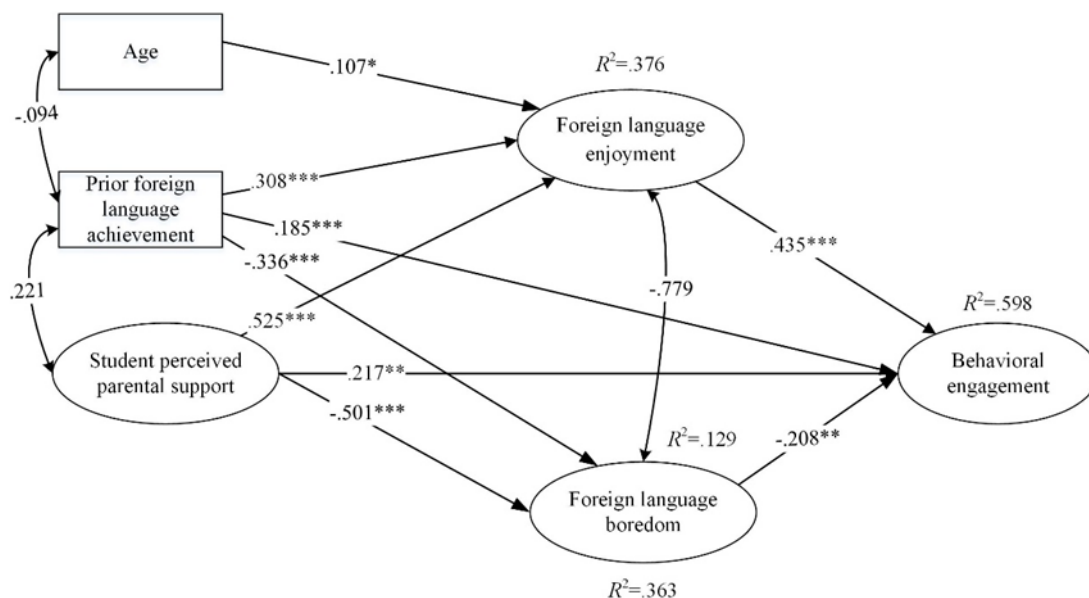


Figure 2. Relationship between PS, EFL enjoyment and boredom, and EFL engagement. All the correlations and path coefficients are standardized. *** p < .001; ** p < .01; * p < .05

Initially, SEM analyses were conducted to test the model fit set out in Figure 2. This model fits the data adequately: $\chi^2(125) = 419.275$, $p < .001$, CFI = .928, TLI = .912, RMSEA = .067, 90% CI [.060, .074], SRMR = .093. Figure 2 demonstrates the model showcasing standardized regression weights. Judging from Figure 2, we had six following findings. First, PS was found to be positively correlated with EFL enjoyment ($\beta_1 = .525$, SE = .061, $p < .001$) and negatively associated with EFL boredom ($\beta_2 = -.501$, SE = .071, $p < .001$). Second, EFL enjoyment had a positive effect on EFL engagement ($\beta_1 = .435$, SE = .072, $p < .001$), while the effect of EFL boredom on EFL



engagement was negative ($\beta_2 = -.208$, $SE = .074$, $p < .01$). Third, the predictive effect of PS on EFL engagement remains significant ($\beta = .217$, $SE = .073$, $p < .01$) in the presence of PD, EFL enjoyment and boredom in the model simultaneously. Fourth, prior EFL achievement positively affects EFL enjoyment ($\beta = .308$, $SE = .048$, $p < .001$) and EFL engagement ($\beta = .185$, $SE = .045$, $p < .001$), and negatively influences EFL boredom ($\beta = -.336$, $SE = .051$, $p < .001$). Fifth, the positive effect of age on EFL enjoyment was also confirmed ($\beta = .107$, $SE = .043$, $p < .05$), suggesting that older secondary school students might experience more enjoyment in their EFL learning. Sixth, the model presented in Figure 1 explained a significant proportion of variance in EFL enjoyment (37.6%), EFL boredom (36.3%), and EFL engagement (59.8%).

The results of the mediation analysis are presented in Table 3. The results showed that BC 95% of CIs do not straddle zero, indicating that we are 95% confident that EFL enjoyment and boredom mediate PS and EFL engagement in parallel. The total mediating effect size of EFL enjoyment and boredom was .333 (95% CIs [.242, .466]), accounting for 60.55% of the total effect of PS on EFL engagement. Specifically, the mediating effects of EFL enjoyment and boredom in the relationship between PS and EFL engagement were .228 (95% CIs [.156, .315]) and .104 (95% CIs [.038, .209]), respectively.

Table 3. Results of mediation analysis

Model path	Effect	SE	Bias-corrected CIs 95%		Indirect/total effect
			Lower	Upper	
Total effect	.550	.053	.440	.647	-
Total indirect effect	.333	.057	.242	.466	60.55%
C1: PS→JO→EG	.228	.040	.156	.315	41.45%
C2: PS→BO→EG	.104	.044	.038	.209	18.91%
Direct effect	.217	.073	.076	.356	39.45%

Note. Bolded CIs considered significant. JO = EFL enjoyment, BO = EFL boredom, EG = EFL enjoyment

5. Discussion

This study investigated the correlation and mediating factors between parental support and student engagement in the EFL learning context in mainland China. Given the potential effects of prior academic achievement and age on achievement emotions and learning engagement, the correlations between PS, enjoyment, boredom, and engagement were explored with age and prior EFL achievement as covariates. There exist two primary discoveries.

First, PS was positively associated with children's engagement, accounting for 39.45% of the variance. That is, the first research question was answered. The present study contributes to the literature by verifying the relationship between these two variables in the Chinese context, suggesting that the beneficial effects of PS on learning engagement should also be valued in addition to the school and student factors. This finding is consistent with previous studies (Bradley *et al.*, 2021; Raufelder *et al.*, 2015). This study's significant contribution to the existing literature is the initial verification of the positive impact of PS on student engagement in learning EFL. This finding suggests that parental involvement and support are the factors to improve adolescents' level of engagement in learning English. Theoretically, the present study offers empirical support for the social support theory that PS has a positive effect on learning engagement (Arslan, 2018).

Second, based on controlling for age and prior EFL achievement, it was found that EFL-related enjoyment and boredom mediated the association between PS and EFL engagement. Therefore, the second research question was answered. Although some studies have explored the correlation between PS and achievement emotions (Raufelder *et al.*, 2015) and learning engagement (Bradley *et al.*, 2021), few studies have comprehensively explored the relationship between PS, achievement emotions and learning engagement. The current research enriches the existing body of knowledge by identifying that EFL enjoyment and boredom mediate the relationship between PS and EFL engagement. This finding has theoretical and practical contribution. First, this study identified the



significance of PS to students' achievement emotions, enlarging the scope of achievement emotions' antecedents. Second, the mediating effects of achievement emotions between PS and engagement were verified, indicating that PS, mediated through EFL enjoyment and boredom, influences children's EFL engagement. Furthermore, the total mediating effect size of EFL enjoyment and boredom was 60.55%, suggesting EFL enjoyment and boredom partially mediated the relationship between PS and EFL engagement.

6. Implications, Shortcomings and Directions for Further Research

The results of the present study carry both theoretical and practical significance. Firstly, the positive correlation between PS and EFL engagement and the positive effects of PS on EFL enjoyment and boredom endorsing the hypothesis of social support theory that social support (e.g., PS) has a contributive effect on school outcomes (e.g., achievement emotions and learning engagement). Secondly, this study offers tangible proof supporting the control-value theory, identifying PS and learning engagement as the antecedents and consequences of achievement emotions. Thirdly, the contributive effect of PS on EFL emotions and engagement indicated that PS would enhance children's engagement in learning English by alleviating the negative emotions (e.g., boredom) and boosting positive ones (e.g., enjoyment). That is, secondary EFL learners need parental involvement in learning English for PS would positively affect students' psychological well-being and engagement.

This study investigated the direct and indirect effects of PS on students' engagement in learning English as a foreign language, which contributes to the existing literature by deepening the mediating mechanisms of PS affecting learning engagement. However, three limitations that require attention. Primarily, the cross-sectional nature hinders our ability to establish a causal relationship among the study variables. Therefore, it is advisable for future research to explore the cause-and-effect connection among PS, emotions, and learning engagement by employing longitudinal data. Second, enjoyment and boredom partially mediated the connection between PS and learning engagement. An intriguing question is more studies are needed to identify other mediators between PS and EFL engagement that account for the remaining 39.45% mediating effect. Accordingly, Future research may enhance comprehension of the intermediary processes linking PS and learning engagement by identifying more mediators. Third, the present study only examined the two prominent achievement emotions. However, the other achievement emotions, including pride, hope, anxiety, anger, hopelessness, and shame, may also play a role among the study variables. Thus, future research is expected to take all eight discrete achievement emotions into consideration.

7. Conclusion

Based on the data from a group of English learners from one Chinese middle school, this study endeavoured to delve into the relationship between PS, achievement emotions, and learning engagement. We found that PS would directly affect EFL engagement and indirectly through the mediators of EFL enjoyment and boredom. First, these findings provide empirical evidence for the social support and control-value theories. Second, the significance of PS to secondary school students' EFL learning (e.g., learning engagement) and their psychological well-being (e.g., achievement emotions) was revealed. In addition to school factors (e.g., teacher-student relationship and feelings of belongingness) and individual characteristics (e.g., motivation and buoyancy), parental involvement and support are also crucial factors to the EFL education of secondary school students.

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