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Relationship between Perceived Teacher Support and Learning Engagement in EFL Context: The Mediating Role of Achievement Emotions

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Abstract

The facilitative effect of teacher support on students' consequential learning outcomes has been validated across student populations at all levels. However, few studies have explored the mediating mechanisms between teacher support and learning engagement, especially in English as a foreign language (EFL). The present study seeks to explore whether achievement emotions mediated the relationship between teacher support and learning engagement in learning EFL. Data were collected from 527 Chinese secondary EFL learners in Grades 7 and 8 through convenience sampling. Results of structural equation modelling (SEM) and mediation analysis showed that perceived teacher support was significantly associated with foreign language (FL) achievement emotions. FL achievement emotions, in turn, predicted learning engagement. These findings add to the evidence base for the beneficial effect of teacher support on EFL learners' learning engagement. Implications and directions for future studies are discussed.

Keywords: *Perceived teacher support, learning engagement, FL enjoyment, FL boredom, mediating mechanisms*

A. Introduction

According to the social support theory, the supportive behaviours obtained or perceived by individuals from social networks are generally beneficial and could promote an individual's academic development and mental health (Berkman & Syme, 1979; Suldo et al., 2009; Zhao et al., 2019). Given the domain-specific nature of key terms (e.g., achievement emotions and learning engagement) in the educational domain, prior studies on the relationship between perceived teacher support (PTS), achievement emotions, and learning engagement (Goetz et al., 2006; Karbach et al., 2013), and academic performance were assumed to be conducted within a particular subject domain (e.g., the EFL). In this vein, early studies have demonstrated that teacher support would positively affect students' foreign language achievement (Mercer et al., 2018) and foreign language emotions (e.g., enjoyment and boredom) (Zhao & Yang, 2022). Prior studies have also found that teacher support was positively correlated with EFL learners' academic engagement (Sadoughi & Hejazi, 2021). Teacher support has beneficial effects on the achievement emotions, learning engagement, and academic outcomes of EFL learners. However, few studies have comprehensively explored the relationship between teacher support,

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learning engagement, and achievement emotions in the field of EFL. The present study was designed to make up for the deficiency in the existing studies by checking whether teacher support affects learning engagement through achievement emotions.

B. Literature Review

Teacher Support

Teacher support refers to the learning or life-related supportive behaviours students get from teachers during the learning process (Skinner & Belmont, 1993). In Mainland China, secondary school students spend most of their time with their teachers, and various supports from teachers, including emotional support and instructional support, are crucial to students' academic development and mental health. Considering the importance of teacher support, one objective of the present study was to verify whether perceived teacher support could promote students' learning engagement in an EFL context. Moreover, what are the mediating mechanisms between teacher support and students' learning engagement?

Given the importance of PTS to the key indicators of students' learning outcomes, extant studies have been conducted to explore the predictive effects of PTS using a correlational design. For example, Shih (2021) found that PTS was positively correlated with students' academic engagement and achievement goal orientations among eighth graders. In a study of Mexican junior high school students, Baños et al. (2020) examined the link between PTS, intrinsic satisfaction, and academic performance in physical education and found that PTS could affect academic performance directly and indirectly through enjoyment and boredom. Previous studies provide empirical evidence that PTS could affect learning engagement and achievement emotions (e.g., academic enjoyment and boredom). Moreover, scholars also found that achievement emotions predict learning engagement (Linnenbrink-Garcia & Pekrun, 2011; Murphy et al., 2019; Wu & Kang, 2023).

Based on the literature review above, it is known that PTS would positively affect students' learning engagement and achievement emotions. Besides, the predictive effect of achievement emotions on learning engagement was also confirmed. Thus, we hypothesised that PTS influences learning engagement via achievement emotions. However, there are two knowledge gaps in the previous studies. First, given the domain specificity of achievement emotions and learning engagement (Goetz et al., 2006; Green et al., 2007), more research is needed to explore the relationship between PTS, learning engagement, and achievement emotions in the field of EFL. Second, no research has been conducted to verify the mediating effect of achievement emotions in the link between PTS and learning engagement in a sample of Chinese secondary EFL learners. Accordingly, the present study aimed to contribute to the literature by testing the hypothesized model of "PTS→FL achievement emotions→learning engagement" with Chinese secondary EFL learners as participants.

FL Emotion in Learning English

Achievement emotions are a hot topic in second language acquisition (SLA) and EFL. With the introduction of the positive psychology movement into SLA/EFL (MacIntyre & Gregersen, 2012), research on achievement emotions is no longer limited to anxiety, and more discrete emotions have been studied. Achievement emotions can be defined as the emotional experience related to achievement activities and outcomes (Pekrun, 2006). From the perspective of learning scenarios, students would experience multiple emotions in the classroom context, during

examination settings, and in the context of doing homework. By conducting a group of qualitative and quantitative studies, Pekrun et al. (2002) identified eight of the most common achievement emotions in learning settings (i.e., enjoyment, hope, pride, anxiety, boredom, hopelessness, shame, and anger). This study focused on FL achievement emotions, and explored the mediating effect of EFL-related emotional experience in the link between PTS and learning engagement.

The antecedents and consequences of achievement emotions have been explored in previous studies. For instance, Oriol et al. (2016) documented that positive emotions were positively correlated with academic engagement among Chilean university students. In a study with German adolescents, Dettmers et al. (2011) studied the relationship between negative emotions and school engagement efforts and found a significant negative correlation between these two constructs. Besides, the antecedents of achievement emotions were also explored. The control-value theory posits that control and value appraisals are the proximal antecedents of achievement emotions (Pekrun, 2006). In a study among Iranian university students, Sadoughi and Hejazi (2021) found that teacher support was positively related to students' positive achievement emotions (e.g., enjoyment, pride, and hope). There are two aspects of the existing studies that need to be further explored. First, few studies have explored positive and negative emotions simultaneously when investigating the relationship between PTS, achievement emotions, and learning engagement. Second, few studies have taken Chinese secondary EFL learners as participants, which means that the applicability of the control-value theory needs to be further verified.

Learning Engagement

Learning engagement is regarded as the externality of learning motivation, which refers to the total energy, flexibility, and positive emotions in the learning process. Kuh (2001) defined learning engagement as the time and energy that learners put into effective learning activities and argued that improving learners' learning engagement is the core of enhancing the quality of education. In this study, we used learning engagement to refer to students' participation in teaching activities in the English class.

Given the conduciveness of learning engagement to academic outcomes, the affecting factors of learning engagement have been extensively studied. For example, Tsang and Dewaele (2023) explored the relationship between FL emotions, learning engagement and FL proficiency and found that FL emotions would significantly affect learning engagement, which in turn would be positively correlated with students' FL proficiency. In a study with Hong Kong adolescents, Chen (2008) found that social support (i.e., parental, teacher and peer support) was positively correlated with learning engagement. Also, the control-value theory postulates that antecedents of achievement emotions other than control and value appraisals are considered distal antecedents. Also, achievement emotions are believed to be associated with the key indicators of academic outcomes, such as learning engagement and academic performance (Pekrun, 2006). Together, we hypothesized that PTS could affect learning engagement directly and indirectly via the mediators of achievement emotions.

The Present Study

In mainland China, English is equally important as Chinese and Mathematics, a compulsory subject from primary school to doctorate (Wen, 2012). As a major foreign language, there is no context for English communication for most Chinese English learners. However, despite this,

countless Chinese students work hard to learn English to advance to higher education or achieve job promotion (Bolton & Botha, 2015). For Chinese secondary school students, English is a compulsory subject in the academic proficiency test. At this stage, the main goal of English education is to cultivate students' English listening, speaking, reading, and writing skills. Moreover, under the influence of Confucian heritage culture, Chinese secondary school students' EFL-related achievement emotions, control and value appraisals might be different from those of Western counterparts.

According to the literature review on the relationship between PTS, achievement emotions, and learning engagement, we hypothesized that FL achievement emotions mediate the relationship between PTS and learning engagement. More specifically, the present study focused on FL enjoyment and FL boredom, for they are two prominent activity-related achievement emotions (Bieg et al., 2022). Therefore, in addition to exploring the direct impact of PTS on learning engagement, the present study also aimed to test the validity of the two mediation models presented in Figure 1. In sum, the present study aimed to test the following three hypotheses.

H_1, PTS has a predictive effect on students' learning engagement in learning EFL.

H_2, FL enjoyment mediates the relationship between PTS and learning engagement.

H_3, FL boredom mediates the link between PTS and learning engagement.

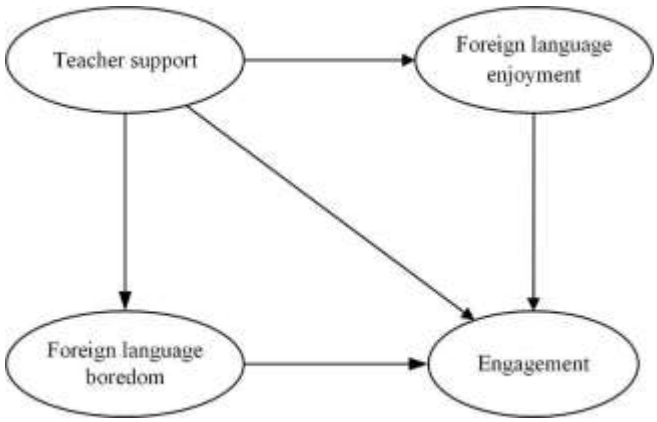

Figure 1. Proposed model

C. Methods

Participants

By convenience sampling, five hundred and twenty-seven participants were recruited from one middle school in Foshan City, Guangdong Province, China. Among them were 280 male students, accounting for 53.1% of the total sample, and 247 participants were female students, accounting for 46.9%. Regarding grades, 218 participants were seventh graders (41.4%), and 309 participants were eighth graders (58.6%). Judging from the family socioeconomic status of the participants, most of them come from middle-class families. Before participating in the questionnaire survey, participants were asked to sign the written consent form. In addition, verbal informed consent from participants' parents or legal guardians was also obtained.

Measures

PTS in The EFL Classroom

PTS was measured using the four items drawn from OECD (2003) to describe the support students perceived from their English teacher (e.g., "My English teacher gives extra help when we need it"). Participants rated their PTS on a five-point Likert scale with "1" = strongly disagree and "5" = strongly agree. Previous studies have demonstrated that the PTS scale has excellent internal consistency and construct validity (Yildirim, 2012). As shown in Table 1, the internal consistency of the PTS scale was acceptable.

Foreign Language Enjoyment

Participants' FL enjoyment was measured by the class-related items adopted from the *Achievement Emotions Questionnaire* (Pekrun et al., 2011). The FL enjoyment scale is composed of four items. In view of the domain-specificity of achievement emotions, the four-item enjoyment scale was adapted to the EFL learning context (e.g., "I look forward to my English class"). Participants' FL enjoyment responses were rated on a five-point Likert scale from 1 (strongly disagree) to 5 (strongly agree). The FL enjoyment scale has been used in previous studies and demonstrated excellent internal consistency and construct validity (Dewaele & Li, 2022; Kang & Wu, 2022a). In the present study, the internal consistency of the FL enjoyment scale was good, with Cronbach's $\alpha = .87$.

Foreign Language Boredom

The FL boredom was also measured by items adapted from the *Achievement Emotions Questionnaire* (Pekrun et al., 2011). There are five items in the class-related FL boredom. One example item is "I feel bored during English class". The psychometric properties of the FL boredom scale have been verified in the existing research (Sharp et al., 2018; Wu & Kang, 2023). Participants' responses were rated using a 5-point Likert scale ("1" = strongly disagree and "5" = strongly agree). Higher scores indicated higher levels of FL boredom experienced by participants. In this study, the internal consistency was good for Cronbach's α equals .85.

Learning Engagement

Participants' learning engagement was measured using four items adapted from the *Engagement vs. Dissatisfaction with Learning Questionnaire* (Skinner et al., 2009). Specifically, we used the behavioural aspect of the engagement scale to measure participants' learning engagement for behavioural engagement has the greatest effect on academic outcomes, and other types of engagement (i.e., emotional engagement and cognitive engagement) can only affect academic outcomes via behavioural engagement (Li & Lerner, 2013). Previous studies have examined and confirmed the psychological properties of the learning engagement scale (Engels et al., 2016; Kang & Wu, 2022a). The Cronbach's α of the learning engagement was .85, indicating that the internal consistency of learning engagement was good.

Covariates

This study intended to explore the relationship between PTS and learning engagement and the mediating mechanism between these constructs. However, previous literature on achievement emotions has revealed the reciprocal relationship between achievement emotions and academic performance (Pekrun et al., 2017). In addition, the reciprocal relationship between learning engagement and academic performance was also confirmed (Wang et al., 2019).

Therefore, students' prior academic performance must be controlled to deepen the understanding of the relationship between PTS, achievement emotions, and learning engagement. Specifically, prior FL achievement was controlled while exploring the relationship between PTS, FL enjoyment, FL boredom, and learning engagement.

FL achievement was represented by participants' English scores on the most recent final examination. The English examination paper was composed of 5 question types: listening comprehension (20 points), multiple choice questions (20 points), cloze questions (15 points), reading comprehension (30 points), and writing (15 points). The full score of the English examination paper is 100 points, with 60 points being the minimum passing grade. The higher the participants' English scores, the higher their foreign language achievement.

3. Procedure

The questionnaire was written in Chinese. The Chinese questionnaire was translated from the English version of the studied scales. Then, the questionnaire was back-translated and checked to guarantee the content accuracy of the items. With the assistance of English teachers, participants' answers were checked to prevent them from missing items. If an item was accidentally omitted, the participant would fill it in. Then, these data were entered into Excell form to prepare for further analysis.

4. Data Analysis

Given that the data were self-reported, common method bias was conducted to check common method variance (Podsakoff et al., 2003). If common method bias does not exist, data would be further analyzed. First, descriptive statistics were carried out to provide preliminary information. In this phase, the skewness and kurtosis of all data were examined using the maximum likelihood (ML) estimation method. The participants' PTS, FL enjoyment, FL boredom, and learning engagement were measured using SPSS 23.0. Then, confirmatory factor analysis (CFA) was conducted to test the measurement model properties. Second, a structural equation model (SEM) was carried out to examine the relationship between PTS, FL enjoyment, FL boredom, and learning engagement. Moreover, the bootstrap method with 5000 re-samples and 95% bias-corrected confidence intervals (CIs) was conducted to verify the mediating effects. The mediating effect is significant if zero is not contained in the CIs.

D. Findings

Common Method Bias

Harman's single-factor test was applied to assess the common method variance of the data. Results of single-factor CFA were: $\chi 2(119) = 1092.889$, $p < .001$, CFI = .801, TLI = .773, RMSEA = .125, 90% CI [.118, .131], SRMR = .074, showing that the model fit was poor. Thus, it would be concluded that the common method bias can be ruled out.

Descriptive Statistics

The results of descriptive statistics are shown in Table 1. According to the criteria proposed by Curran et al. (1996), |skewness| < 2 and |kurtosis| < 7 indicate that the studied construct has satisfactory normality for ML estimation. Judging from the skewness and kurtosis values, as demonstrated in Table 1, all studied variables had satisfactory normality. The mean scores of the studied variables demonstrated that participants experienced high PTS (*M*ean = 4.42/5.00, *SD* =

.56) and FL enjoyment (*M*ean = 3.73/5.00, *SD* = .74) while learning English. Also, participants were moderately involved in their English learning (*M*ean = 2.96/5.00, *SD* = .56), and their FL boredom was at a low level (*Mean* = 2.11/5.00, *SD* = .76). In the present study, PTS was the independent variable and learning engagement was the dependent variable, while FL enjoyment and FL boredom were treated as the latent variables. To examine the mediating effects of FL enjoyment and FL boredom between PTS and learning engagement, FL achievement was controlled. Specifically, participants' prior FL achievement was converted into standardized *z*-scores in the SEM analyses.

Table 1. Descriptive statistics for the studied latent variables

	Mean	SD	Skewness	Kurtosis	Cronbach's α	factor loadings
PTS	4.42	.56	-.82	-.24	.81	.65-.74
FL enjoyment	3.73	.74	-.49	.42	.87	.62-.86
FL boredom	2.11	.76	.39	-.32	.85	.60-.81
Learning engagement	2.96	.56	-.19	.40	.85	.69-.86
EFL achievement	.00	.99	-.86	-.12	-	-

Measurement Models and Latent Bivariate Correlations

CFA was initially performed using Mplus 8.3 (Muthén & Muthén, 2013) to test the properties of the measurement model consisting of TSR, FL achievement emotions, learning engagement, and prior FL achievement. The model fit criteria include the comparative fit index (CFI), Tucker-Lewis index (TLI), root means square error of approximation (RMSEA), and standardized root mean square residual (SRMR). A model has an excellent fit if CFI and TLI ≥ .95, RMSEA ≤ .06, and SRMR ≤ .08 (Hu & Bentler, 1999).

According to the cutoff criteria, the measurement model had an excellent fit for $\chi^2(113) = 279.664$, $p < .001$, CFI = .966, TLI = .959, RMSEA = .053, 90% CI [.045, .061], SRMR = .035. Also, the internal consistency of the studied construct ranged from .60 to .86 , which was acceptable to excellent based on the criteria proposed by Taber (2018).

Table 2. Results of correlations matrix for the studied variables

	1	2	3	4	5	6
1 PTS	-					
2 FLE	.693***	-				
3 FLB	-.567***	-.819***	-			
4 Engagement	.536***	.768***	-.691***	-		
5 Prior FL achievement	.199***	.378***	-.432***	.475***	-	

Note. PTS, perceived teacher support; FLE, foreign language enjoyment; FLB, foreign language boredom; ***$p < .001$.

Prior FL achievement was the covariate variable, and when it was added into the measurement model, we found that the fit to the data well for $\chi^2(126) = 292.945$, $p < .001$, CFI = .967, TLI = .960, RMSEA = .050, 90% CI [.043, .058], SRMR = .034. Moreover, the results of latent bivariate correlations are reported in Table 2. Consistent with the theoretical hypotheses of the control-value theory, we found that PTS was positively correlated with FL enjoyment and learning engagement but negatively correlated with FL boredom. Also, FL enjoyment was

positively associated with learning engagement, while FL boredom was negatively correlated with learning engagement.

Structural Equation Modelling

SEM was adopted to prove the proposed relationships presented in Figure 1. In this phase, z-scores of participants' prior FL achievement were treated as a covariate. The model had adequate fit to the data: $\chi^2(128) = 455.431$, $p < .001$, CFI = .935, TLI = .922, RMSEA = .070, 90% CI [.063, .077], SRMR = .079. Figure 2 displays the proposed model with standardized regression weights. And we had four findings: (1) PTS significantly affect FL enjoyment (β_1 = .746, *SE* = .049, $p < .001$) and FL boredom (β_2 = -.634, *SE* = .060, $p < .001$); (2) the predictive effects of FL enjoyment (β_1 = .573, *SE* = .086, $p < .001$) and FL boredom (β_2 = -.196, *SE* = .070, $p < .01$) on learning engagement were also significant; (3) prior FL achievement was positively associated with FL enjoyment (β = .268, *SE* = .045, $p < .001$) and learning engagement (β = .190 *SE* = .046, $p < .001$), and negatively correlated with FL boredom (β = -.343, *SE* = .048, $p < .001$); (4) the results of R-squared (R^2) showed the percentage of the variance in FL enjoyment (62.9%), FL boredom (52.0%), and learning engagement (59.8%) by the independent variable of PTS.

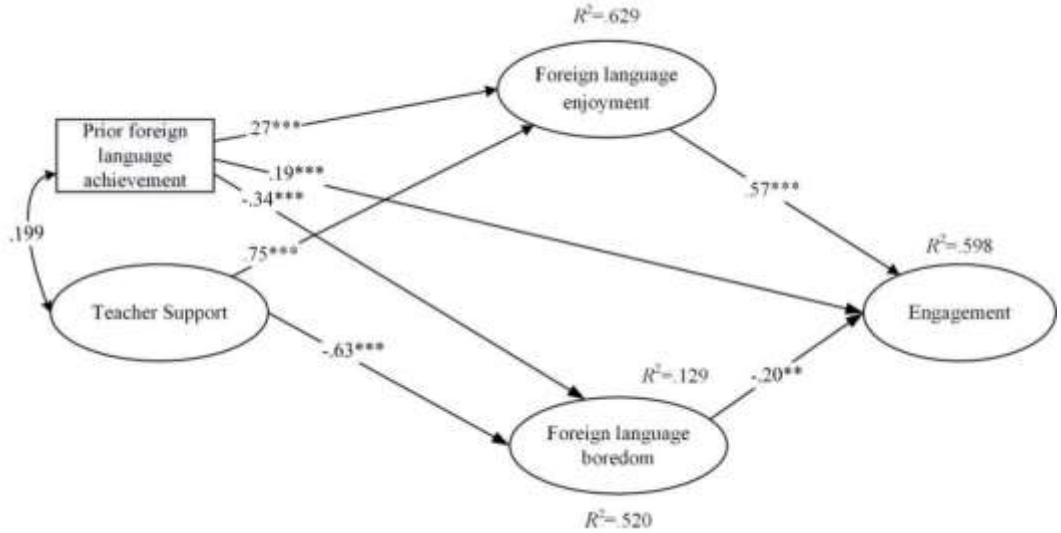

Figure 2. The relationship between PTS, FL enjoyment, FL boredom, and learning engagement.

Note. Correlations and path coefficients are standardized. *** $p < .001$; ** $p < .01$; * $p < .05$.

Test for Mediating Mechanisms

For the purpose of examining the mediating effects of FL enjoyment and FL boredom in the relationship between PTS and learning engagement, bootstrap estimation was applied. The results of the 95% CIs are presented in Table 3. The total indirect effect between PTS and learning engagement was .552 (95% CIs [.407, .744]). The effect sizes of FL enjoyment and FL boredom in the relationship between PTS and learning engagement were .428 (95% CIs [.296, .583]) and .125 (95% CIs [.042, .239]), respectively. In addition, the direct effect of PTS on learning engagement was no longer significant (95% CIs [-.205, .161]) in this mediation model, indicating that FL enjoyment and FL boredom fully mediated the relationship between PTS and learning engagement.

Table 3. Results of mediation analysis

Model path	Effect	*SE*	Bias-corrected CIs 95%	
			Lower	Upper
Total effect	.537	.050	**.437**	**.629**
Total indirect effect	.552	.087	**.407**	**.744**
C1: PTS→FLE→Engagement	.428	.073	**.296**	**.583**
C2: PTS→FLB→Engagement	.125	.051	**.042**	**.239**
Direct effect	-.015	.094	-.205	.161

Note: Bolded CIs considered significant (values do not include zero).

E. Discussion

The present study explored the link and mediating mechanisms between PTS and learning engagement in a sample of Chinese secondary EFL learners. Based on the results of SEM, the present study had the following three findings. First, we found that PTS had a direct predictive effect on learning engagement. Second, the mediating effects of FL enjoyment and FL boredom in the relationship between PTS and learning engagement were also significant. Third, we also found that FL enjoyment and FL boredom fully mediated the relationship between PTS and learning engagement.

First, positive correlation between PTS and learning engagement shows that H_1 was supported. This finding is consistent with the previous studies (Jelas et al., 2016; Shih, 2021). This finding has theoretical and practical implications for the literature. Theoretically, this finding provides empirical evidence for the social support theory that PTS could positively contribute to EFL learners' involvement in their EFL learning. Practically, this finding values teacher support for EFL learners' involvement levels in learning English would be increased along with increasing support from their English teacher.

Second, FL enjoyment mediated the link between PTS and learning engagement, **indicating** that H_2 was supported. Drawing upon the control-value theory, achievement emotions would be affected by a group of factors (e.g., control and value appraisals) and also have an impact on academic outcomes (e.g., academic performance) (Pekrun, 2006). In line with this theoretical structure, the present study found that FL enjoyment mediated the relationship between PTS and learning engagement, which provide empirical evidence for the validity of the control-value theory in the Chinese context. Although existing studies have confirmed the positive effect of PTS on students' learning engagement (e.g., Jelas et al., 2016), few studies have explored the mediating mechanisms between these two variables. This study contributes to the literature by identifying that teacher support affects students' learning engagement by affecting students' enjoyment. That is, an increase in the level of teacher support would enhance the level of students' FL enjoyment, which would increase their level of engagement in learning English.

Third, the mediating effect of FL boredom in the relationship between PTS and learning engagement was also significant, suggesting that H_3 was supported. Like FL enjoyment, FL boredom is a prominent emotion that EFL learners might experience. However, limited studies have been conducted to explore the mechanism of FL boredom between PTS and learning engagement. In a qualitative study with Indonesian college students, Hidajat et al. (2020) found that social support from teachers could increase students' intrinsic motivation by decreasing boredom. Besides, Wu and Kang (2023) documented that FL boredom would negatively affect learning engagement, affecting FL achievement. However, no studies have comprehensively

explored the relationship between PTS, FL boredom, and learning engagement. To contribute to the literature, this study explored the link between PTS, FL boredom, and learning engagement and found that PTS would reduce students' levels of FL boredom, which in turn enhances students' engagement in English learning.

F. Implications, limitations and directions for future research

Findings that FL enjoyment and FL boredom mediated the relationship between PTS and learning engagement have theoretical and practical implications. On the one hand, this study provides empirical evidence for the social support theory and control-value theory (Lakey & Cohen, 2000; Pekrun, 2006), showing that these two theories are established in foreign language education in the Chinese context. On the other hand, the findings that FL enjoyment and FL boredom fully mediated the relationship between PTS and learning engagement suggested that foreign language educators could increase students' emotional experience of enjoyment and reduce the detrimental effect of FL boredom by increasing the level of teacher support (e.g., showing more care for students and providing timely feedback) (Dunn & Rakes, 2010; Wong et al., 2018), which in turn enhance students' involvement in English learning.

Although the link and mediating mechanisms between PTS and learning engagement were explored, three limitations need to be considered. First, the cross-sectional design of the present study prevents us from clarifying the causal relationship between the studied variables. Future studies are advised to confirm the causal relationship between PTS, FL emotions, and learning engagement based on longitudinal data. Second, only prior FL achievement was controlled as a covariate while exploring the relationship between studied variables. Other factors such as psychological capital (Kang et al., 2021; Kang & Wu, 2022b), family socioeconomic status (Chen et al., 2021), and teacher-student relationship (Clem et al., 2021) might also affect achievement emotions and learning engagement. Accordingly, future studies are recommended to control more covariates to eliminate the bias of the relationship between PTS, FL enjoyment, FL boredom, and learning engagement caused by factors including psychological capital, teacher-student relationship, and family socioeconomic status. Third, the participants are Han students who are deeply influenced by Confucian heritage culture. However, there are fifty-five ethnic minorities in China, and few studies have been conducted based on participants from these groups (Yang, 2015). Thus, future studies are suggested to pay adequate attention to ethnic minority groups in China to expand further the application scope of theories (i.e., the control-value theory and the social support theory) and promote foreign language education in minority areas.

F. Conclusion

The present study identified that PTS was positively correlated with students' learning engagement in the EFL context in China. Furthermore, after controlling for prior FL achievement, we uncovered that FL enjoyment and FL boredom fully mediated the impact of PTS on learning engagement. The more teacher support that EFL learners perceive, the more likely they are to experience more enjoyment and less boredom, and thus the higher the degree of participation in EFL learning. English educators could promote students' enjoyment level and alleviate their boredom level by offering more support and, thus, students' involvement in EFL learning could be improved.

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