

## Perceived Teacher Support and EFL Achievement: The Mediating Roles of Academic Enjoyment and Self-concept

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### Abstract

*Perceived teacher support, the primary social support that students receive in classroom settings, is positively associated with students' academic achievement. However, limited studies have explored whether academic enjoyment and self-concept mediated the relationship between perceived teacher support and academic achievement in the learning English as a foreign language (EFL) context in China. The aim of the present study was to investigate the chain-mediating role of academic enjoyment and self-concept in the association between perceived teacher support and EFL achievement. Survey data were gathered from a cross-sectional study of secondary EFL learners in Guangdong Province, China (N =517). Results demonstrated that perceived teacher support was positively correlated with EFL achievement. Moreover, academic self-concept and the chain mediating effects of academic enjoyment and behavioral engagement mediated the relationship between perceived teacher support and EFL achievement. Implications, limitations, and suggestions for future research are discussed.*

### 1. INTRODUCTION

According to the social support theory, teacher support and peer support are the main resources that students could gain academic assistance (e.g., academic evaluation and information support) and psychological counselling (e.g., concern and liking of teachers and peers), which would positively affect students' academic achievement (Ghaith, 2002). Zhang and Li (2019) compared the predictive effect of teacher support and peer support on students' academic performance. They found that perceived teacher support had a significant direct effect on academic achievement, which could also indirectly affect academic achievement via the mediators of academic self-efficacy and learning engagement. In contrast, the influence of peer support on academic performance was not significant, indicating that perceived teacher support rather than peer support was the primary social support within the classroom. In the past decades, a growing number of empirical studies have been conducted to investigate the linkage between teacher support and students' academic achievement as well as the mediating

mechanisms (e.g., academic self-efficacy, learning motivation, achievement emotions and academic engagement) between these two variables (Affuso et al., 2022; Ahmed et al., 2010; Klem & Connell, 2004). Few studies, however, have explored the association between the constructs of teacher support, academic enjoyment, academic self-concept, and academic achievement in the context of EFL learning. On the one hand, existing studies mainly concentrated on the domains of science, technology, engineering, and mathematics (STEM), and relatively few studies have focused on the linkage between perceived teacher support and academic achievement, especially in the EFL learning context in Mainland China (Ma et al., 2018).

On the other hand, although a growing number of researchers have begun to pay attention to the mediating effect of achievement emotions in the link between teacher support and academic achievement, most of the existing research has focused on negative achievement emotions (e.g., academic anxiety and boredom) and less on positive achievement emotions (e.g., academic enjoyment) (Teimouri et al., 2019). To fill these gaps, this study examined whether perceived teacher support is positively related to students' academic performance. Meanwhile, the present study would also test whether positive achievement emotion (i.e., academic enjoyment) and self-concept mediate between the constructs of perceived teacher support and academic achievement.

## **2. LITERATURE REVIEW**

### **2.1. Perceived Teacher Support and Academic Achievement**

From a self-determination theory perspective, perceived teacher support could be seen as students' feelings that their views are supported and recognized by the teacher and the opportunities provided by teachers to access information and make choices (Lei et al., 2018; Mageau & Vallerand, 2003). For adolescents, teachers, like parents and peers, are important others of adolescents, serving as both a source of knowledge and a source of emotional support for them (Chen et al., 2003; Szumski & Karwowski, 2019). In a comparative study of teacher support, Conner et al. (2014) found that those students who could feel care and support from their teachers were less prone to depression, and their academic anxiety was lower than that of students who did not receive care and support from teachers. Given the multifaceted nature of the functions of teacher support to adolescents' development, it is significant to comprehensively examine the predictive effect and mechanisms of perceived teacher support on academic achievement.

Previous studies have extensively explored how perceived teacher support affects key academic and well-being indices (Jelas et al., 2016; Reddy et al., 2003; Suldo et al., 2009). For example, Jelas et al. (2016) found that teacher support positively correlated with academic achievement, and academic engagement mediated these two variables. In a longitudinal study with secondary school students, Reddy et al. (2003) documented that the higher the perceived teacher support, the lower the adolescent students' depression levels, indicating that teacher support is an important factor for adolescent students to maintain good mental health. Prior studies have confirmed the predictive effect of perceived teacher support on students' academic performance. However, further studies are needed to explore the mediating mechanisms between these two constructs, especially in the EFL learning context. Accordingly, this study endeavoured to fill this gap by examining whether perceived teacher support affects academic

performance. Moreover, this study will determine whether academic enjoyment and self-concept mediate perceived teacher support and academic performance.

### **2.2. The Potential Mediating Effect of Academic Enjoyment**

Academic enjoyment refers to the sense of pleasure that students experience while studying a subject that they favourite (Boliver & Capsada-Munsech, 2021). The domain-specificity of achievement emotions means that academic enjoyment should be explored in a particular domain (Goetz et al., 2010; Goetz, Frenzel, et al., 2006). Thus, in this study, EFL enjoyment was defined as the sense of pleasure experienced by students in the process of EFL learning. Furthermore, Pekrun (2006) demonstrates that academic enjoyment can be described from the dimensions of valence, activation, and object focus. Specifically, EFL enjoyment is a positive, activating, and activity-related emotion. Previous studies have highlighted the importance of academic enjoyment for adolescents, suggesting that enjoyment is integral to achieving superior academic outcomes (Goetz et al., 2006; Lumby, 2011; Shernoff et al., 2003).

Existing studies have examined the antecedents and consequences of academic enjoyment, which provide empirical evidence for constructing the theoretical model. For example, Boliver and Capsada-Munsech (2021) found that the negative effect of ability grouping on academic enjoyment in elementary school was stronger than its positive effect. In another study with mathematics students, Aldridge et al. (2013) documented that teacher support was an influential predictor of academic enjoyment. Dewaele and Li (2022) investigated the linkage between EFL enjoyment and English achievement and found that EFL enjoyment had a significant predictive effect on English achievement. In a study conducted among eighth-grade students, Westphal et al. (2018) documented that the predictive effect of academic enjoyment on self-concept was also significant. To sum up, we can form the hypothesis that perceived teacher support positively affect academic self-concept, and academic enjoyment mediate these two constructs (i.e., perceived teacher support and academic self-concept).

### **2.3. The Potential Mediating Effect of Academic Self-Concept**

Academic self-concept can be defined as students' perception of their behaviors, abilities, and unique characteristics in the learning context (Bailey, 2003). Self-concept is malleable, especially that of adolescents, because they are experiencing self-discovery and identity discovery (Markus & Kunda, 1986). Researchers identified a set of antecedental factors of academic self-concept (e.g., Pesu et al., 2016; Prince, 2015). For example, Pesu et al. (2016) documented that the more teachers believe in students' abilities, the higher the students' self-concept. Prince (2015) explored the contributive role of environment to students' self-concept development and found that significant places actively contribute to the formation of an individual's future self-concept. In field of education, academic self-concept is important because it affects a student's motivations, attitudes, and behaviors (Mercer, 2012).

For the positive function of academic self-concept to students' optimal functioning, antecedents and consequences of academic self-concept in school settings are gaining traction (Perinelli et al., 2022; Verschueren et al., 2012; Wu et al., 2021). For instance, in a study conducted with 113 children, Verschueren et al. (2012) documented that teacher-child relationship quality would positively affect the development of a child's self-concept. A meta-analysis conducted by Wu et al. (2021) found that there was a reciprocal relationship between

these two variables. When taken together, this study formed the second hypothesis that teacher support might affect academic achievement via the mediator of academic self-concept.

### 2.4. The Potential Chain-Mediating Role of Academic Enjoyment and Academic Self-Concept

Kang and Wu (2022) documented that academic enjoyment could affect EFL achievement via the mediator of academic self-concept. Westphal et al. (2018) examined the relationship between teacher diagnostic skills, achievement emotions, and academic self-concept in a sample of 1803 German eighth-grade students. They found that academic self-concept moderated the relationship between teacher diagnostic skills and academic enjoyment. Therefore, it could be inferred that the chain-mediating effect of academic enjoyment and self-concept might be significant in the linkage between perceived teacher support and EFL achievement.

### 2.5. The Present Study

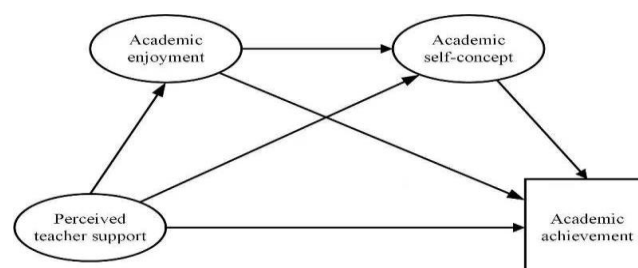
Perceived teacher support would positively influence academic achievement (Affuso et al., 2022; Conner et al., 2014; Roorda et al., 2017). Meanwhile, the mediating effects of academic enjoyment and self-concept between perceived teacher support and academic achievement were also confirmed (Jelas et al., 2016; Li et al., 2020; Wu et al., 2021). However, limited studies have examined the relationships between the study variables in the EFL learning settings. Based on the literature above, we formed the proposed model (see Fig. 1). That is, the present study aimed to answer the following four hypotheses:

H1: Perceived teacher support (independent variable) would positively affect EFL achievement (dependent variable).

H2: Academic enjoyment mediates the association between the independent and dependent variables.

H3: Academic self-concept mediates the relationship between the independent and dependent variables.

H4: Academic enjoyment and academic self-concept play a chain-mediating role between the independent and dependent variables.



**Figure 1. Proposed model**

## 3. METHODOLOGY

### 3.1. Participants and Procedures

Participants came from one public middle school in Guangdong Province, China. 535 participants took part in the questionnaire survey. 18 questionnaires with incomplete answers were deleted, and the effective rate of the questionnaires was 96.64%. Among the 517 valid

### **Perceived Teacher Support and EFL Achievement: The Mediating Roles of Academic Enjoyment and Self-concept**

questionnaires, there were 275 male participants (53.19%) and 242 female participants (46.81%). The participants consisted of seventh and eighth grade students, including 246 seventh grade students (41.78%) and 301 eighth grade students (58.22%). Participants ranged in age from 11 to 15 ( $M = 13.64$ ,  $SD = 0.61$ ).

With the assistance of participants' English teachers, the participants took part in the questionnaire survey in one English class. Before conducting the questionnaire survey, written informed consent was obtained from participants and English teachers; also, oral informed consent was gained from participants' parents or legal guardians. In addition to the basic demographics, participants were required to respond to all measures on a five-point Likert scale. Participants were given enough time to answer the questionnaire survey, and were free to decide whether to continue the survey. It would not affect them even if they quit the questionnaire survey halfway. Roughly the questionnaire survey took about twenty minutes.

## **3.2. Instruments**

### **3.2.1. Perceived Teacher Support**

Four items that adapted from the *Child and Adolescent Social Support Scale* (CASSS) (Malecki & Demaray, 2002) were used to measure participants' perceived teacher support in their EFL learning process. On example, the item is "My English teacher takes care of my feeling". The internal consistency of the perceived teacher support scale was good, with Cronbach's alpha equal to 0.836.

### **3.2.2. Academic Enjoyment**

Participants' English class-related academic enjoyment was measured by the five items were adapted from the *Achievement Emotions Questionnaire* (AEQ) (Pekrun et al., 2011). Note that the domain specificity of achievement emotions items was adapted to suit the EFL learning context. One example of the academic enjoyment scale was "I like English class". The internal reliability coefficient of the academic enjoyment construct was good, with Cronbach's alpha = 0.865.

### **3.2.3. Academic Self-Concept**

Participants' academic self-concept was measured by the self-concept scale adapted from PISA 2015 (OECD, 2017). Goetz et al. (2010) documented that academic self-concept was a domain-specific construct, which means that the academic self-concept scale needs to be adapted to be EFL-related (e.g., "I get good marks in English"). The internal consistency of the EFL-related self-concept was high, with Cronbach's alpha = 0.866.

### **3.2.4. EFL Achievement**

To present participants' EFL achievements, their English scores in the final examination were gathered from their English teachers. The district education bureau developed the examination paper and aimed to assess students' basic skills in English. The English examination paper included items on vocabulary, grammar, reading comprehension, and composition. The full remarks are 120 points, and higher achieving students had higher English scores.

### 3.3.Data Analysis

In this study, SPSS 23.0 and Mplus 8.3 (Muthén & Muthén, 2013) was employed to analyze the data. There are two steps for data analysis. First, confirmatory factor analyses (CFA) were conducted to assess the reliability and validity of the study constructs. Second, latent SEM was conducted to test the path coefficients. Specifically, the mediating effects of academic enjoyment, academic self-concept, and chain mediators of academic enjoyment and self-concept were estimated by employing the bootstrap approach with bootstrapped confidence intervals of 95%.

The maximum likelihood (ML) estimation in the Mplus 8.3 program was used to test the parameters. The model fits well when comparative fit index (CFI) and Tucker-Lewis index (TLI)  $\geq 0.95$ , root mean square error of approximation (RMSEA)  $\leq 0.06$ , standardized root mean square residual (SRMR)  $\leq 0.08$  (Hu & Bentler, 1999).

## 4. RESULTS

### 4.1.Common Method Bias

Harman's single-factor test was conducted to assess the possibility of common method bias (Podsakoff et al., 2003). The indicators were as follows:  $\chi^2(90) = 1186.472$ , RMSEA = 0.154, CFI = 0.716, TLI = 0.669 and SRMR = 0.111, indicating that model fit was poor. Thus, it could be seen that bias caused by common method was not a serious concern in the dataset.

### 4.2.Preliminary Analysis

Results of CFA of perceived teacher support, academic enjoyment, and academic self-concept are demonstrated in Table 1. Factor loadings of the three latent variables ranged from 0.56 to 0.87, which were higher than 0.5, indicating that no item needed to be removed (Hair et al., 2019). Also, CFI and TLI are greater than 0.95, RMSEA and SRMR are less than 0.08, suggesting that the constructs of perceived teacher support, academic enjoyment, and academic self-concept fit well.

**Table 1**

#### *Model Fit Indices from CFA and SEM Analysis*

	Factor loading	$\chi^2(df)$	CFI	TLI	RMSEA	SRMR
Teacher support	0.66-0.79	18.705 (5)	0.985	0.970	0.074	0.022
Enjoyment	0.56-0.86	15.310 (5)	0.992	0.983	0.063	0.022
Self-concept	0.60-0.87	9.459 (5)	0.996	0.992	0.042	0.014

*Note.* Factor loadings are standardized.

### **Perceived Teacher Support and EFL Achievement: The Mediating Roles of Academic Enjoyment and Self-concept**

Descriptive statistics and correlations for the study variables are presented in Table 2. Results demonstrated that the correlations between perceived teacher support and academic enjoyment ( $r = 0.576, p < 0.01$ ), perceived teacher support and academic self-concept ( $r = 0.281, p < 0.01$ ), and perceived teacher support and EFL achievement ( $r = 0.189, p < 0.01$ ) were statistically significant at the expected direction.

**Table 2**

#### ***Descriptive Statistics, Cronbach's Alpha, and Correlations for the Variables***

	Teacher support	Enjoyment	Self-concept	EFL achievement
Teacher support	-			
Enjoyment	0.576**	-		
Self-concept	0.281**	0.620**	-	
EFL achievement	0.189**	0.339**	0.575**	-
Mean	4.363	3.759	2.588	90.620
SD	0.562	0.714	0.614	21.908
Cronbach's $\alpha$	0.836	0.865	0.866	-

Note. \*\* $p < 0.01$ .

#### **4.3. Total Effect Modelling Analysis**

To test hypothesis H1, we first tested the total effect between teacher support and EFL achievement without considering the intermediate variables of EFL-related enjoyment and self-concept. Results of regression analysis demonstrated that unstandardized regression coefficient was significantly different from zero ( $B = 8.378, p < 0.01$ ). In addition, the standardized regression coefficient was  $\beta$  equals to 0.205, which also showed that perceived teacher support could positively affect EFL achievement. This meant that H1 was supported in the present study.

#### **4.4. Test for Mediation**

The proposed model (Fig. 1) was verified using the latent variable SEM. The indicators were as follows:  $\chi^2(99) = 213.552, RMSEA = 0.047, CFI = 0.972, TLI = 0.966,$

$SRMR = 0.040$ ,  $p < 0.001$ , suggesting that the model fit the data well. That is, the proposed model in Fig.1 had acceptable fit indices.

Results of point estimation of the unstandardized mediation effect of the paths are demonstrated in Table 3. First, the point estimates of the unstandardized mediation effect of “perceived teacher support→enjoyment→EFL achievement” was -5.061, and 95% percentile bootstrap confidence intervals (95% CI) were [-11.876, 0.369] and [-12.090, 0.180], respectively, demonstrating that the academic enjoyment’s mediating effect was insignificant because zero was included in the confidence intervals. For Path Two (perceived teacher support→academic self-concept→EFL achievement), the point estimates of unstandardized mediation effect were -8.111, and bias-corrected and 95% CI were [-14.204, -4.048] and [-14.053, -3.983], respectively, showing that self-concept’s mediating effect was significant for zero was not contained. For Path Three (perceived teacher support→academic enjoyment→academic self-concept→EFL achievement), the point estimates of unstandardized mediation effect was 17.750, and bias-corrected and 95% CI were [12.899, 25.075] and [12.804, 24.873], respectively, suggesting that the chain mediating effect of academic enjoyment and self-concept was significant for zero was not included.

In addition, this study compared the mediating effects of Path Three and Path Two. For the Path of Mediating effect 3 → Mediating effect 2, bias-corrected and 95% CI were [17.761, 39.147] and [17.399, 38.598], respectively, demonstrating that the mediating effect of Path Three was different from that of Path Two. Specifically, Path Three’s mediating effect was stronger than Path Two. **Table 3**

### *Mediating Effects of Academic Enjoyment and Self-Concept between Perceived Teacher Support and EFL Achievement*

Path	Point estimate	Parameters		bootstrap 5000 times 95% CI			
				bias-corrected		percentile	
		S.E.	Est./S.E.	Lower	Upper	Lower	Upper
1. Teacher support→academic enjoyment→EFL achievement	-5.061	3.146	-1.609	-11.876	0.369	-12.090	0.180
2. Teacher support→self-concept→EFL achievement	-8.111	2.578	-3.146	-14.204	-4.048	-14.053	-3.983
3. Teacher support→enjoyment→self-concept→EFL achievement	17.750	3.098	5.728	12.899	25.075	12.804	24.873
Total indirect effect	4.577	2.757	1.660	-1.158	9.555	-1.557	9.316
Mediating effect 3 vs. Mediating effect 2	25.861	5.427	4.765	17.761	39.147	17.399	38.598

*Note.* Point estimation of effects was unstandardized.

## 5. DISCUSSION

Taking Chinese secondary school students as participants, the present study aimed to investigate the linkage and the mediating mechanisms between perceived teacher support and EFL achievement. Although set studies in STEM fields have demonstrated that perceived teacher support positively affects learning outcomes, limited studies have been conducted to explore the relationship between these two constructs in the EFL context. Furthermore, studies that aimed to explore the mediating effects of EFL-related enjoyment and self-concept between



the two variables of teacher support and academic performance were limited, especially those studies that were based on Chinese secondary EFL learners. This study made up for the limitations of the existing research by examining the predictive effect of perceived teacher support on EFL achievement and how perceived teacher support affects EFL achievement.

First, this study found that perceived teacher support was positively correlated with EFL achievement, indicating that H<sub>1</sub> was supported. This finding is in line with the existing studies (Jelas et al., 2016; Perry et al., 2010; Reddy et al., 2003). The present study contributed to the literature by offering empirical evidence that perceived teacher support would positively affect EFL achievement in the non-Western context of Confucian heritage culture, which confirmed the relationship between these two constructs in a broader situational and cultural contexts. The positive correlation between these two constructs suggested that the more teachers' support students perceived, the better their EFL achievement.

Second, the mediating effect of academic enjoyment between perceived teacher support and EFL achievement was insignificant, indicating that H<sub>2</sub> was not supported. Different from previous studies that argued that academic enjoyment mediated the relationship between perceived teacher support and academic performance (Ahmed et al., 2010; años et al., 2020; Ma et al., 2021), the present study did not support the path model of “perceived teacher support → academic enjoyment → EFL achievement”. One possible reason is that the mediating effect of academic enjoyment between teacher support and EFL achievement was shunted away by other mediators (e.g., academic self-concept).

Third, this study found that the mediating effect of academic self-concept between the independent and dependent constructs was significant, showing that H<sub>3</sub> was supported. This finding is consistent with the conclusions of prior research (Erkman et al., 2010; Ma et al., 2021). This study was the first endeavour to check whether self-concept mediates the link between teacher support and academic performance in the EFL context in China. This finding suggested that when EFL learners perceived more teacher support, they were more confident in their competency in learning EFL well, which then affected their EFL achievement (Zhao et al., 2019). Therefore, this finding reminds English teachers that they should provide support and encouragement to their students, which could help boost their confidence in learning EFL and, thus, their EFL achievement was enhanced.

Fourth, it was found that the mediating chain effects of academic enjoyment and academic self-concept were significant, indicating that H<sub>4</sub> was supported. This model indicated that perceived teacher support influenced academic self-concept by first affecting academic enjoyment and then influencing EFL achievement. This finding showed the order for the influence of academic enjoyment and self-concept, consistent with prior studies (Guay et al., 2019; Westphal et al., 2018). Results reported by Aldridge et al. (2013) suggested that students' academic enjoyment was influenced by their prior learning experience and could be enhanced by the impact of significant others (e.g., teachers). Also, Westphal et al. (2018) documented that students' subject-related self-concept was positively correlated with their enjoyment in learning this particular subject. Thus, it is of significance for teachers to provide more support to improve the levels of students' enjoyment, stimulate their academic self-concept levels in learning EFL, and then achieve performance improvement in EFL learning.

## 6. IMPLICATIONS, LIMITATIONS AND DIRECTION FOR FUTURE RESEARCH

This study found that the more teachers' support students perceive, the better their EFL achievement. Specifically, there are three practical implications of the present study. First, English teachers are advised to increase their support levels. For example, students could experience more teacher support if their English teachers gave more positive feedback during the EFL learning process, such as praise, affirmation, and nodding (Reigel, 2008). Second, the significant mediating effect of academic self-concept between the two constructs demonstrated that improving students' EFL-related self-concept could better exert the productive influence of teacher support on their achievement. For instance, English teachers could utilize praise and feedback (Pinxten et al., 2010), raise their academic expectations, especially for those with poor achievement (Chen et al., 2011), and embrace a growth mindset (Zarrinaadi et al., 2022) are the possible strategies to boost students' academic self-concept. Third, the chain-mediating role of academic enjoyment and academic self-concept suggested that in addition to providing academic support, English teachers, as students' psychological coordinators, are suggested to create a positive and active English learning atmosphere for EFL learners. For example, integrating mindfulness and compassion into EFL education (Huang, 2022), offering respect or concern (Gorard & See, 2011), and emphasizing the value of learning English and teaching English with an open, outgoing, and easy-going attitude (Magidson et al., 2014; Pekrun, 2006) are the possible strategies for English teachers to increase students' EFL-related enjoyment and self-concept of abilities in learning English.

There are three limitations that are important to note. First, the present study is conducted in a cross-sectional design, which precludes us from interpreting the causal relationships among study variables. Future studies are suggested to adopt a longitudinal design to verify the causal inferences between the study variables. Second, this study merely explored the mediating effects of academic enjoyment and academic self-concept. However, other factors such as academic engagement (Jelas et al., 2016), interest (Zhao et al., 2019), academic self-efficacy and achievement goal orientations (Liu et al., 2022) might also mediate the relationship between the independent and dependent variables of the present study. Therefore, future studies are recommended to take other psychological mechanisms that might play mediating effects in the relationship between the independent and dependent variables into consideration. Third, participants were drawn from one public school; thus, the conclusions may not fit the situation in private schools. Hongoontri and Keawkhong (2014) documented that school culture was a crucial predictor of teachers' beliefs, behaviours, and instructional practices. Therefore, future research are suggested to take school contexts and differences between public and private schools into consideration.

## 7. CONCLUSION

In this study, the predictive effect of perceived teacher support on EFL achievement as well as the mediating mechanism between these two variables, were studied in a sample of 535 Chinese secondary school students. First, we found that teacher support productively affects EFL achievement. Second, academic self-concept mediated the association between perceived teacher support and EFL achievement. Third, the chain mediating effects of academic

### Perceived Teacher Support and EFL Achievement: The Mediating Roles of Academic Enjoyment and Self-concept

enjoyment and self-concept were also significant between perceived teacher support and EFL achievement. The findings contribute to our understanding of the importance of perceived teacher support in the promotion of students' EFL achievement and how perceived teacher support affects EFL achievement. EFL educators are recommended to provide students with more academic and emotional support, which benefits students' emotions, self-concept and academic achievement in learning EFL.

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**Perceived Teacher Support and EFL Achievement: The Mediating Roles of Academic Enjoyment and Self-concept**

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