



HOW SOCIAL SUPPORT AFFECTS CHINESE ENGLISH-LANGUAGE LEARNERS' LEARNING ACHIEVEMENT? A MEDIATIONAL ANALYSIS

Qiong Wu¹ⁱ,

Hong Lin²

¹School of Humanities and Education,
Foshan University,
Foshan City,
People's Republic of China

²Nansha Yuwotou Middle School,
Guangzhou City,
People's Republic of China

Abstract:

While previous research has shown that perceived social support (PSS) influences students' learning achievement, there is limited research in the field of English as a foreign language (EFL). This study aims to examine the role of emotions, specifically foreign language enjoyment (FLE), as a mediator between PSS and EFL achievement. The study included 477 seventh and eighth grade students (average age of 13.68 and a standard deviation of 0.61, with 49.5% girls). Using bootstrap analysis, it was found that FLE fully mediates the relationship between PSS and EFL learning achievement, while the direct effect from PSS to academic achievement is not statistically significant. These findings provide empirical support for the existing literature's theoretical assumptions, which suggest that supportive social relationships impact foreign language achievement through affective pathways.

Keywords: perceived social support, foreign language enjoyment, EFL achievement, mediating mechanism

1. Introduction

Social support refers to the various types of assistance and resources provided by significant others and members of extended social networks, such as parents, classmates, and teachers, among others, to individuals (Thoits, 2011). The importance of social support as well as its effects on key indicators of well-being and school functioning have increasingly become a consensus among educational researchers (Arslan, 2018; Demaray

et al., 2009; Karunaratne, 2022). For example, empirical studies indicate that students' perceived social support is significantly and positively correlated with academic achievement (Mackinnon, 2012), behavioral and affective engagement (Estell & Perdue, 2013), student motivation (Wentzel et al., 2010), and psychological well-being (Arslan, 2018). In addition, perceived social support has also been found to buffer individuals from adverse outcomes, such as amotivation, academic stress, negative affect, and procrastination (Legault et al., 2006; Poots & Cassidy, 2020; Scholz et al., 2012; Yang et al., 2023).

Academic achievement, as a representation of the knowledge and skills acquired by students in the formal education process, largely determines the attainment of academic honors, achieving further education, and success in the labor market (Kell et al., 2013; York et al., 2015). A number of precursors of academic achievement were identified, which include learning strategies, approaches to learning, motivational factors of goal orientation, optimism, and locus of control (e.g., Richardson et al., 2012; Vrugt & Oort, 2008), as well as social support (Mackinnon, 2012; Song et al., 2015). However, existing research has mainly explored the correlation between PSS and students' general academic achievement, with limited studies investigating the linkage between the two variables in the EFL context. Thus, it is necessary to investigate whether social support has a predictive effect in EFL achievement.

In view of the potential promoting effect of social support on academic achievement, increasing attention has been paid to the mediating mechanism between these two constructs. For example, in a study conducted among Chinese university students, Li et al. (2018) documented that self-esteem fully mediated the association between PSS and academic achievement. In another study with Dutch seventh-grade students, Ahmed et al. (2010) found that motivational beliefs and achievement emotions particularly mediated the relationship between PSS and mathematics achievement. As the foundation of learning (Zull, 2006), academic emotions are influenced by PSS on one hand (Ahmed et al., 2010; Wentzel, 1998), and also impact academic achievement on the other hand (e.g., Camacho-Morles et al., 2021). However, there are few studies on the mediating effect of achievement emotions (e.g., academic enjoyment) in the relationship between PSS and academic achievement, especially in the EFL education setting in China. Therefore, the present study was designed to explore the potential mediating role of achievement emotions in the linkage between PSS and EFL achievement among Chinese EFL learners.

2. Literature Review

2.1 Perceived Social Support

Consistent with Thoits (2011)'s perspective, the present study defined PSS as the assistance and resources perceived by students from significant others (i.e., parents, teachers, and classmates) during the process of learning English. More precisely, the tangible support of instrument and information and the intangible support of love and

care from the peers (Cutrona & Suhr, 1992; Feeney & Collins, 2015), the care, assistance, and encouragement that obtained from parents (Ryan et al., 2015), and academic support, emotional care, and opportunities for accessing information that provided by teachers (Chen et al., 2003; Lei et al., 2018; Szumski & Karwowski, 2019) are the major aspects of PSS.

Given the importance of PSS, in the field of education, the predictive effects of PSS are receiving increasing attention. For example, in an exploratory study conducted among Hispanic ninth-grade students, López et al. (2002) found that the more social support students perceived, the higher their grade point average (GPAs). In another study with adolescents in Maryland, Roeser et al. (2000) documented that the perceived support from schools and families is positively correlated with positive emotional experiences. According to the control-value theory (CVT), achievement emotions mediate the relationship between cognitive appraisals (i.e., control and value appraisals) and academic achievement (Pekrun, 2006). Further, control and value appraisals are regarded as the proximal antecedents of achievement emotions, indicating that other factors (e.g., social support) are seen as the distal antecedents of achievement emotions (Pekrun, 2006). Thus, it could be inferred that achievement emotions might play a mediating role between PSS and academic achievement. However, the potential mediating effect of achievement emotions in the relationship between PSS and academic achievement was scarcely explored, especially in a Chinese EFL context. To address this literature gap, the purpose of this study was to explore the possible mediating effect of achievement emotions (e.g., academic enjoyment) between PSS and EFL achievement among Chinese secondary EFL learners.

2.2 Achievement Emotions

As one of the crucial non-cognitive factors that affect academic achievement, achievement emotions, which refers to the emotional experiences that related to learning activities or learning outcomes, have been increasingly studied (Peixoto et al., 2017; Pekrun, 2006, 2019). Based on a series of qualitative and quantitative research, nine most commonly experienced emotions in educational contexts were identified, those are, enjoyment, hope, pride, relief, anxiety, boredom, hopelessness, anger, and shame (Pekrun et al., 2002).

Inspired by the CVT, a growing number of studies were conducted to confirm the antecedents of achievement emotions or the effects of achievement emotions on school outcomes (Liu et al., 2021). For example, Liu et al. (2021) found that perceived teacher support is positively related to positive emotions (e.g., academic enjoyment) and negatively related to negative emotions (e.g., academic anxiety) in a sample of Chinese secondary school students. In another study with Chinese non-English major undergraduates, Xie and Guo (2023) confirmed the predictive effect of teacher-and-peer support on positive EFL-related emotions (e.g., hope, joy, and relief). Additionally, the predictive effects of achievement emotions on academic achievement (J. M. Dewaele & Li, 2022), learning motivation (Shao et al., 2019), learning strategies (Shen et al., 2023),

and academic engagement (Feng & Hong, 2022; Wang et al., 2023), were also confirmed. Thus, the present study hypothesized that achievement emotions may serve as a possible mediator between PSS and EFL achievement.

2.3 Linking PSS with Academic Emotions and Academic Achievement

Albeit limited, the literature in academic settings indicated a correlation between PSS and affective experiences. For instance, Wentzel (1998) documented that PSS was negatively correlated with psychological distress of academic anxiety and depression among American sixth-grade students. Furthermore, consistent with the control-value theory, the predictive effect of achievement emotions on academic achievement has been widely confirmed (Camacho-Morles et al., 2021; Li et al., 2020; Yu et al., 2022). Furthermore, the higher the perceived academic and personal support from teachers and peers, the higher the academic achievement (Ghaith, 2002). Taken together, it could be inferred that social support could directly affect academic achievement and might also indirectly affect academic achievement through achievement emotions.

In terms of valence, achievement emotions could be categorized into positive emotions (e.g., academic enjoyment) and negative ones (e.g., academic anxiety) (Pekrun et al., 2007). However, there were few studies investigating positive achievement emotions before the positive psychology movement was introduced to the field of second language acquisition (SLA) or EFL (MacIntyre & Gregersen, 2012). Therefore, further research is needed to explore whether positive achievement emotions, such as academic enjoyment, mediate the linkage between PSS and EFL achievement.

2.4 The Current Study

As previously mentioned, there is a limitation of empirical evidence in China regarding the mechanisms by which PSS impacts achievement in foreign language learning in the EFL context. Drawing upon the literature review aforementioned, this study posits that the influence of PSS on foreign language achievement is conveyed through students' "inner psychological resources", including the emotion of enjoyment. Succinctly put, this study aims to investigate whether enjoyment serves as a joint mediator in the relationship between support from significant individuals (e.g., parents, peers, and teachers) and EFL achievement, while also controlling for gender and age. Specifically, this study aimed to test the following three hypotheses.

H₁: Perceived social support (PSS) exerts a positive effect on the emotion of enjoyment in learning foreign language.

H₂: Academic enjoyment in learning foreign language positively contributes to language achievement.

H₃: Perceived social support, via the mediating mechanism of academic enjoyment, plays a pivotal role in fostering foreign language achievement.

3. Methods

3.1 Participants and Procedure

A total of four hundred and seventy-seven Chinese secondary EFL learners (49.5% females) recruited from one middle school in Guangdong province, China using convenience sampling participated in the present study. The participants' ages ranged from 12 to 15 years old, with an average age of 13.68 years ($SD = 0.68$). Judging from the socio-economic status, most of the participants were from China's middle-class families. In addition to the verbal consent from participants' parents or legal guardians, written informed consent, in line with the 1964 Helsinki Declaration, was also signed and obtained by the participants before conducting the questionnaire survey. With the assistance of the English teachers, participants were invited to answer the questionnaire survey in paper-pencil format in an English class. All the items of the studied variables were responded on a five-point Likert scale (1 = strongly disagree, 5 = strongly agree), where higher scores indicate a higher level of approval of the related items.

3.2 Measures

3.2.1 Perceived Social Support Scale

In this study, PSS consists of parental support, teacher support, and peer support (Demaray et al., 2009). The parental support refers to the caring, encouragement, and helpfulness perceived from parents in learning English; peer support refers to peers' caring, valuing, and helpfulness; and teacher support refers to the perception of their English teacher's caring, friendliness and helpfulness. Accordingly, the 6-item parental support scale, the 7-item teacher support, and the 8-item peer support scale that adapted from the Child and Adolescent Social Support Scale (Malecki & Demaray, 2002) were applied to measure participants' PSS. The example items for the three subscales are as follows: "My parents care about my performance in English" for the perceived parental support scale; "My friends care about how much I learn in English" for the perceived peer support scale; and "My English teacher considers my feeling" for the perceived teacher support.

The mean score of the items in the subscale is applied to represent the corresponding variable (e.g., teacher support, peer support). PSS was treated as a latent variable underpinned by the three subcomponents of teacher support, peer support and parental support. In this study, the internal consistency of the PSS was good (Cronbach's $\alpha = 0.77$).

3.2.2 Foreign Language Enjoyment Scale

In view of contextual specificity, achievement emotions could be divided into class-related, homework-related, and examination-related emotions (Pekrun et al., 2006). Emotions might be varied in different learning settings. In this study, class-related enjoyment was measured by the four items adapted from the Achievement Emotions Questionnaire (AEQ) (Pekrun et al., 2011). An example item is "I look forward to my

English class". The foreign language enjoyment was considered as a latent variable in structural equation modelling analysis (SEM). The Cronbach's alpha reliability of foreign language enjoyment was good (Cronbach's alpha = 0.82).

3.2.3 EFL Achievement

Participants' English grades in the previous semester were collected to represent their EFL achievement. The examination questions were uniformly formulated by the local municipal education bureau to ensure a good face validity. The maximum score for the examination paper is 100 points, with 60 points being the passing mark. The higher the score, the higher the EFL achievement. In this study, EFL achievement was converted into standardized z-scores and was regarded as an observed variable in the SEM analysis.

3.2.4 Control Variables

This study aimed to explore the predictive effect and mechanisms of PSS on EFL achievement in a sample of Chinese secondary EFL learners. However, gender and age differences in achievement emotions suggested that gender and age should be controlled when exploring the relationships between PSS, foreign language enjoyment, and EFL achievement (Dewaele et al., 2016; Meyer & Schlesier, 2022). Therefore, gender and age were controlled in the SEM analysis.

3.3 Data Analysis

To confirm the hypotheses of this study, the data analysis was conducted using Mplus 8.3 and was divided into three steps (Muthén & Muthén, 2013).

First, due to the fact that the data were self-reported by participants, Harman's single-factor test was ran to eliminate possible common method biased (Podsakoff et al., 2003).

Second, descriptive statistics and correlations were collected to provide preliminary information and confirmatory factor analyses (CFAs) were carried out to evaluate the properties of the measurement model (i.e., PSS→foreign language enjoyment→EFL achievement).

Third, bootstrapping method with 5000 resamples was conducted to examine the mediating effect of foreign language enjoyment between PSS and EFL achievement.

The mediating effect is significant if zero was not contained in the 95% bias-corrected and accelerated confidence intervals (BCa95% CIs) (Preacher & Hayes, 2008). The acceptable cut-off criteria for evaluating the fit of the measurement model consists of the ratio of chi-square and freedom degree ($\chi^2/df < 5$), root mean square error of approximation (RMSEA ≤ 0.08), standardized root mean square residual (SRMR ≤ 0.08), comparative fit index (CFI $\geq .90$), and Tucker-Lewis index (TLI $\geq .90$) (Hu & Bentler, 1999; Marsh et al., 2004).

4. Results

4.1 Common Method Bias

All items of the variables of PSS and foreign language enjoyment were treated as a single-factor construct. The model fit of this single-factor construct was poor, with $\chi^2(14) = 160.987, p < .001, CFI = .902, TLI = .855, RMSEA = .149, 90\% CI [.128, .170], SRMR = .058$. This result indicated that the issue of common method bias was unlikely to affect the data analysis, despite all data being self-reported.

4.2 Descriptive Statistics and Bivariate Correlations

Table 1 demonstrates the results of descriptive statistics and bivariate correlations of the studied variables. It was found that PSS was positively correlated with foreign language enjoyment ($\beta = .62, p < .01$) and EFL achievement ($\beta = .18, p < .01$). Moreover, foreign language enjoyment was positively related to EFL achievement ($\beta = .26, p < .01$). Concerning the control variables (i.e., gender and age), it was found that gender and age were significantly associated with EFL achievement. Therefore, gender and age need to be controlled in the following analyses.

Table 1: Descriptive statistics and bivariate correlations

	1	2	3	4	5
1. Perceived social support	-				
2. Foreign language enjoyment	.62**	-			
3. EFL achievement	.18**	.26**	-		
4. Gender	-.03	-.06	.10*	-	
5. Age	.07	.04	-.12**	-.08	-
Mean	4.01	3.81	.00	-	-
SD	.48	.66	.99	-	-
Cronbach's Alpha	.77	.82	-	-	-

** $p < .01$; * $p < .05$

4.3 Measurement Models

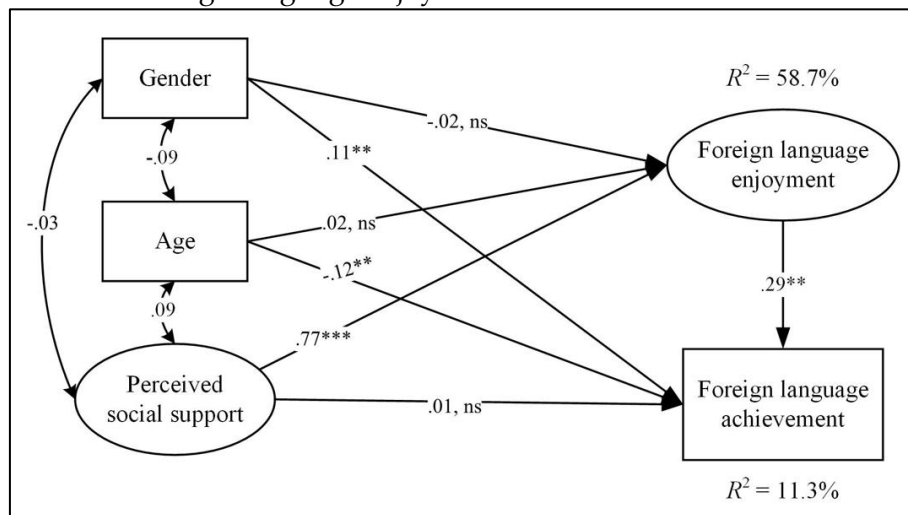
First, without considering the covariates of gender and age, the measurement model of "PSS→foreign language enjoyment→EFL achievement" demonstrated a good fit: $\chi^2(13) = 47.912, p < .001, CFI = .977, TLI = .963, RMSEA = .075, 90\% CI [.053, .098], SRMR = .030$. When gender and age were added, the model on the latent bivariate correlations between PSS, foreign language enjoyment, and EFL achievement fit the data well: $\chi^2(37) = 126.249, p < .001, CFI = .943, TLI = .931, RMSEA = .071, 90\% CI [.058, .085], SRMR = .076$. Moreover, the standardized factor loadings of PSS and foreign language enjoyment ranged from 0.66 to 0.80 (higher than the criteria of 0.50) (Sharma et al., 2005), indicating that none of the items in these two variables need to be deleted.

4.4 SEM Analyses

In addition, the result of SEM analysis showed that the model of "PSS→foreign language enjoyment→EFL achievement" had good fit when considering covariates of gender and

age: $\chi^2(30) = 67.721, p < .001, CFI = .976, TLI = .965, RMSEA = .051, 90\% CI [.035, .068], SRMR = .034$. Thus, the correlations between all variables (PSS, foreign language enjoyment, EFL achievement, gender, and age) were tested (see Figure 1). In this phase, there are five findings. First, PSS was positively correlated with foreign language enjoyment ($\beta = .77, SE = .04, p < .001$). Second, foreign language enjoyment was found to be positively correlated with EFL achievement ($\beta = .29, SE = .10, p < .01$). Third, gender was positively associated with EFL achievement ($\beta = .11, SE = .04, p < .01$), revealing that female EFL learners perform better than their male counterparts. Fourth, age was negatively related to EFL achievement ($\beta = -.12, SE = .04, p < .01$), showing that EFL achievement deteriorates with age. Fifth, PSS explained significant proportions of variance in foreign language enjoyment (58.7%), and EFL achievement (11.3%).

Figure 1: SEM testing of the relationship between PSS, foreign language enjoyment and EFL achievement



Note: The values are standardized regression weights, 'ns' denotes insignificant coefficients, *** $p < .001$, ** $p < .01$.

4.5 Mediation Analysis

Results of mediation analysis are presented in Table 2. First, the lower and upper bounds of the BCa 95% CIs (.07, .39) did not contain zero for the model of "PSS → enjoyment → achievement", showing that the mediating effect of foreign language enjoyment between PSS and EFL achievement is significant. Second, the direct effect of PSS on EFL achievement was not significant for 95% CIs were [-.20, .22]. Thus, it could be inferred that foreign language enjoyment fully mediated the relationship between PSS and EFL achievement.

Table 2: Results of mediation analysis

Model path	Effect	SE	Bias-corrected CIs 95%	
			Lower	Upper
Total effect	.23	.05	.13	.33
Indirect effect: PSS → enjoyment → achievement	.22	.08	.07	.39
Direct effect	.01	.11	-.20	.22

5. Discussion

Given the importance of PSS, an increasing amount of empirical research has been conducted to verify the predictive effects of PSS on key indicators of academic and well-being outcomes in educational settings (Poots & Cassidy, 2020; Scholz et al., 2012). However, there is scarce research exploring the predictive effect of PSS on academic achievement in the field of EFL education. Furthermore, there is even less research exploring the mediating mechanism between PSS and EFL achievement. To fill these existing gaps, by applying Pekrun's CVT (2006), the present study examined the potential mediating effect of achievement emotions (i.e., foreign language enjoyment) between PSS and EFL achievement among Chinese secondary EFL learners.

The results of correlation matrix demonstrated that PSS was positively correlated with foreign language enjoyment, which indicates that H₁ of this study is valid. This finding confirms the predictive role of PSS in positive achievement emotions (i.e., enjoyment) in the EFL education settings, which is consistent with existing research (Ahmed et al., 2010; Roeser et al., 2000; Scholz et al., 2012). On the one hand, PSS was confirmed as one precursor of foreign language enjoyment, which would expand researchers' understanding of the antecedents of achievement emotions. On the other hand, the positive effect of PSS on foreign language enjoyment suggests that the caring, assistance, and support from teachers, parents, and peers are effective and can positively impact on EFL learners' emotional experiences. Furthermore, this study took domain specificity of achievement emotions into account rather than considering emotions in a general manner as previous studies (Ahmed et al., 2010; Tannert & Gröschner, 2021), which would provide a better understanding of the influence of social support on achievement emotions.

This study also found that foreign language enjoyment was positively correlated with EFL achievement, showing that H₂ was supported. This finding confirms the control-value theory hypothesis that positive achievement emotions have a positive effect on improving academic achievement (Pekrun, 2006). Also, this finding is consistent with the conclusions of empirical research, confirming the positive effect of academic enjoyment on academic achievement (e.g., Dewaele & Li, 2022; Tsang & Dewaele, 2023). In addition to providing empirical evidence for the CVT, pedagogically, this study confirms the significance of positive emotional experiences in improving EFL achievement. Therefore, significant others (e.g., teachers, parents, and peers) are recommended to improve EFL learners' achievement by cultivating and enhancing their positive emotional experiences.

Results of mediation analysis revealed that foreign language enjoyment fully mediated the relationship between PSS and EFL achievement, indicating that H₃ was supported. That is, the more support EFL learners perceive from their teachers, parents, and peers, the higher their level of academic enjoyment experienced, which in turn results in better EFL achievement. Consistent with the social support theory, this study found that PSS plays an important role in improving academic achievement (Hupcey et al.,

1998). Existing research has confirmed the mediating effects of engagement, motivation, and self-esteem in the association between PSS and academic achievement (Ahmed et al., 2010; Jelas et al., 2016; Li et al., 2018). The present study confirms the mediating effect of achievement emotions (i.e., academic enjoyment) between PSS and academic achievement among Chinese secondary EFL learners, which further deepens the understanding of the mechanisms between these two constructs.

The present study contributes to the literature by identifying that academic enjoyment serves as the mechanism by which PSS affects academic achievement. In addition to providing empirical evidence for the CVT and the social support theory, this finding also has implications for educational practices. First, the finding that PSS positively correlated with foreign language enjoyment and EFL achievement implies the significance of social support to learning and well-being outcomes. Therefore, support (e.g., caring, assistance, and encouragement) from English teachers, parents, and peers should be valued in EFL learning. Specifically, creating collaborative groups (Haataja et al., 2022), fostering high-quality teacher-student relationships (Ma et al., 2018), and enhancing parental responsibility by implementing parenting support programs (Widding, 2018) are the possible ways to improve PSS. Second, the full mediating effect of foreign language enjoyment in the relationship between PSS and EFL achievement suggests that the improvement of PSS (e.g., providing supportive interaction and creating a cooperative learning atmosphere) could positively impact on foreign language enjoyment, which, in turn, contributes to the improvement of EFL achievement (Ghaith, 2002; Oh et al., 2014).

Despite the theoretical and practical contributions, three limitations need to be further studied. First, although the impact of common method bias has been excluded, self-reported data (e.g., social desirability and interpretive bias) might weaken the objectivity of research findings. Thus, future research is recommended to coordinate the use of multiple data sources (e.g., teachers and peers) to reduce potential biases. Second, the cross-sectional design of the present study hinders inferences regarding the causal relationships between the studied variables. It is suggested to adopt a longitudinal study design to further explore the relationships between the studied variables (Hancock et al., 2013). Third, gender and age were controlled as covariates while examining the relationship between PSS, foreign language enjoyment, and EFL achievement. However, apart from gender and age, prior academic performance, achievement goals, and socioeconomic status may also influence achievement emotions and academic achievement (Lüftenegger et al., 2016; Pekrun et al., 2017; Tazouti & Jarlégan, 2019). Therefore, future research is recommended to control for these possible factors when investigating the relationships between the studied variables.

6. Conclusion

Focusing on Chinese secondary EFL learners, this study found that PSS was positively correlated with foreign language enjoyment and EFL achievement. Furthermore,

mediation analysis indicated that PSS indirectly influenced EFL achievement through foreign language enjoyment. These findings confirm the positive effects of PSS and positive emotions (i.e., academic enjoyment) on improving students' EFL achievement. Therefore, English teachers and policymakers could effectively improve students' foreign language performance by creating a supportive learning environment and enhancing students' positive emotional experiences.

Conflict of Interest Statement

There is no conflict of interest to disclose.

About the Author(s)

Qiong Wu is a senior lecturer in the Department of Foreign Languages, currently employed at the School of Humanities and Education in Foshan University. Her scholarly pursuits are centered upon English education.

Orcid: orcid.org/0009-0007-8001-3213

Hong Lin teaches at Nansha Yuwotou Middle school, Nansha District, Guangzhou City, Guangdong Province, China, possessing ample pedagogical expertise and a keen interest in the psychology of foreign language education for secondary school students.

References

- Ahmed, W., Minnaert, A., van der Werf, G., & Kuyper, H. (2010). Perceived social support and early adolescents' achievement: The mediational roles of motivational beliefs and emotions. *Journal of Youth and Adolescence*, 39(1), 36–46. <https://doi.org/10.1007/s10964-008-9367-7>
- Arslan, G. (2018). Social exclusion, social support and psychological wellbeing at school: A study of mediation and moderation effect. *Child Indicators Research*, 11(3), 897–918. <https://doi.org/10.1007/s12187-017-9451-1>
- Camacho-Morles, J., Slep, G. R., Pekrun, R., Loderer, K., Hou, H., & Oades, L. G. (2021). Activity achievement emotions and academic performance: A meta-analysis. *Educational Psychology Review*, 33(3), 1051–1095. <https://doi.org/10.1007/s10648-020-09585-3>
- Chen, C., Greenberger, E., Farruggia, S., Bush, K., & Dong, Q. (2003). Beyond parents and peers: The role of important non-parental adults (VIPs) in adolescent development in China and the United States. *Psychology in the Schools*, 40(1), 35–50. <https://doi.org/10.1002/pits.10068>
- Cutrona, C. E., & Suhr, J. A. (1992). Controllability of stressful events and satisfaction with spouse support behaviors. *Communication Research*, 19(2), 154–174. <https://doi.org/10.1177/009365092019002002>
- Demaray, M. K., Malecki, C. K., Rueger, S. Y., Brown, S. E., & Summers, K. H. (2009). The role of youth's ratings of the importance of socially supportive behaviors in the

- relationship between social support and self-concept. *Journal of Youth and Adolescence*, 38(1), 13–28. <https://doi.org/10.1007/s10964-007-9258-3>
- Dewaele, J.-M., MacIntyre, P. D., Boudreau, C., & Dewaele, L. (2016). Do girls have all the fun? Anxiety and enjoyment in the foreign language classroom. *Theory and Practice of Second Language Acquisition*, 2(1), 41–63.
- Dewaele, J. M., & Li, C. (2022). Foreign language enjoyment and anxiety: Associations with general and domain-specific English achievement. *Chinese Journal of Applied Linguistics*, 45(1), 32–48. <https://doi.org/10.1515/CJAL-2022-0104>
- Estell, D. B., & Perdue, N. H. (2013). Social support and behavioral and affective school engagement: The effects of peers, parents, and teachers. *Psychology in the Schools*, 50(4), 325–339. <https://doi.org/10.1002/pits.21681>
- Feeney, B. C., & Collins, N. L. (2015). A new look at social support: A theoretical perspective on thriving through relationships. *Personality and Social Psychology Review*, 19(2), 113–147. <https://doi.org/10.1177/1088868314544222>
- Feng, E., & Hong, G. (2022). Engagement mediates the relationship between emotion and achievement of Chinese EFL learners. *Frontiers in Psychology*, 13, 1–12. <https://doi.org/10.3389/fpsyg.2022.895594>
- Ghaith, G. M. (2002). The relationship between cooperative learning, perception of social support, and academic achievement. *System*, 30, 263–273. [https://doi.org/10.1016/S0346-251X\(02\)00014-3](https://doi.org/10.1016/S0346-251X(02)00014-3)
- Haataja, E., Dindar, M., Malmberg, J., & Järvelä, S. (2022). Individuals in a group: Metacognitive and regulatory predictors of learning achievement in collaborative learning. *Learning and Individual Differences*, 96, 102146. <https://doi.org/10.1016/j.lindif.2022.102146>
- Hancock, G. R., Harring, J. R., & Lawrence, F. R. (2013). Using latent growth modeling to evaluate longitudinal change. In G. R. Hancock & R. O. Mueller (Eds.), *Structural equation modeling: A second course* (pp. 309–342). Information Age Publishing.
- Hu, L. T., & Bentler, P. M. (1999). Cutoff criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives. *Structural Equation Modeling: A Multidisciplinary Journal*, 6(1), 1–55. <https://doi.org/10.1080/10705519909540118>
- Hupcey, J. E., Crnp, R., & Rnc, E. (1998). Clarifying the social support theory-research linkage. *Journal of Advanced Nursing*, 27, 1231–1241. <https://doi.org/10.1046/j.1365-2648.1998.01231.x>
- Jelas, Z. M., Azman, N., Zulnaidi, H., & Ahmad, N. A. (2016). Learning support and academic achievement among Malaysian adolescents: The mediating role of student engagement. *Learning Environments Research*, 19(2), 221–240. <https://doi.org/10.1007/s10984-015-9202-5>
- Karunarathne, R. A. I. C. (2022). Impact of perceived social support and social skills on adolescent's self-esteem: The social support theory perspective. *Journal of Business and Technology*, 6(2), 37. <https://doi.org/10.4038/jbt.v6i2.87>

- Kell, H. J., Lubinski, D., & Benbow, C. P. (2013). Who rises to the top? Early indicators. *Psychological Science*, 24(5), 648–659. <https://doi.org/10.1177/0956797612457784>
- Legault, L., Green-demers, I., & Pelletier, L. (2006). Why do high school students lack motivation in the classroom? Toward an understanding of academic amotivation and the role of social support. *Journal of Educational Psychology*, 98(3), 567–582. <https://doi.org/10.1037/0022-0663.98.3.567>
- Lei, H., Cui, Y., & Chiu, M. M. (2018). The relationship between teacher support and students' academic emotions: A meta-analysis. *Frontiers in Psychology*, 8, 1–12. <https://doi.org/10.3389/fpsyg.2017.02288>
- Li, C., Dewaele, J. M., & Jiang, G. (2020). The complex relationship between classroom emotions and EFL achievement in China. *Applied Linguistics Review*, 11(3), 485–510. <https://doi.org/10.1515/applirev-2018-0043>
- Li, J., Han, X., Wang, W., Sun, G., & Cheng, Z. (2018). How social support influences university students' academic achievement and emotional exhaustion: The mediating role of self-esteem. *Learning and Individual Differences*, 61(January 2017), 120–126. <https://doi.org/10.1016/j.lindif.2017.11.016>
- Liu, X. Xian, Gong, S. Y., Zhang, H. po, Yu, Q. lei, & Zhou, Z. jin. (2021). Perceived teacher support and creative self-efficacy: The mediating roles of autonomous motivation and achievement emotions in Chinese junior high school students. *Thinking Skills and Creativity*, 39, 100752. <https://doi.org/10.1016/j.tsc.2020.100752>
- López, E. J., Ehly, S., & García-Vázquez, E. (2002). Acculturation, social support and academic achievement of mexican and mexican american high school students: An exploratory study. *Psychology in the Schools*, 39(3), 245–257. <https://doi.org/10.1002/pits.10009>
- Lüftenegger, M., Klug, J., Harrer, K., Langer, M., Spiel, C., & Schober, B. (2016). Students' achievement goals, learning-related emotions and academic achievement. *Frontiers in Psychology*, 7, 1–10. <https://doi.org/10.3389/fpsyg.2016.00603>
- Ma, L., Du, X., Hau, K. T., & Liu, J. (2018). The association between teacher-student relationship and academic achievement in Chinese EFL context: A serial multiple mediation model. *Educational Psychology*, 38(5), 687–707. <https://doi.org/10.1080/01443410.2017.1412400>
- MacIntyre, P., & Gregersen, T. (2012). Emotions that facilitate language learning: The positive-broadening power of the imagination. *Studies in Second Language Learning and Teaching*, 2(2), 193. <https://doi.org/10.14746/ssllt.2012.2.2.4>
- Mackinnon, S. P. (2012). Perceived social support and academic achievement: Cross-lagged panel and bivariate growth curve analyses. *Journal of Youth and Adolescence*, 41(4), 474–485. <https://doi.org/10.1007/s10964-011-9691-1>
- Malecki, C. K., & Demaray, M. K. (2002). Measuring perceived social support: Development of the child and adolescent social support scale (CASSS). *Psychology in the Schools*, 39(1), 1–18. <https://doi.org/10.1002/pits.10004>
- Marsh, H. W., Wen, Z., & Hau, K. T. (2004). Structural equation models of latent interactions: Evaluation of alternative estimation strategies and indicator

- construction. *Psychological Methods*, 9(3), 275–300. <https://doi.org/10.1037/1082-989X.9.3.275>
- Meyer, S., & Schlesier, J. (2022). The development of students' achievement emotions after transition to secondary school: A multilevel growth curve modelling approach. *European Journal of Psychology of Education*, 37(1), 141–161. <https://doi.org/10.1007/s10212-021-00533-5>
- Muthén, L. K., & Muthén, B. (2013). *Mplus version 8.3: User's guide*. Muthén & Muthén.
- Oh, H. J., Ozkaya, E., & Larose, R. (2014). How does online social networking enhance life satisfaction? The relationships among online supportive interaction, affect, perceived social support, sense of community, and life satisfaction. *Computers in Human Behavior*, 30, 69–78. <https://doi.org/10.1016/j.chb.2013.07.053>
- Peixoto, F., Sanches, C., Mata, L., & Monteiro, V. (2017). "How do you feel about math?": Relationships between competence and value appraisals, achievement emotions and academic achievement. *European Journal of Psychology of Education*, 32(3), 385–405. <https://doi.org/10.1007/s10212-016-0299-4>
- Pekrun, R. (2006). The control-value theory of achievement emotions: Assumptions, corollaries, and implications for educational research and practice. *Educational Psychology Review*, 18(4), 315–341. <https://doi.org/10.1007/s10648-006-9029-9>
- Pekrun, R. (2019). Achievement emotions: A control-value theory perspective. In R. Patulny, A. Bellocchi, R. E. Olson, S. Khorana, J. McKenzie, & M. Peterie (Eds.), *Emotions in late modernity* (pp. 142–157). Routledge.
- Pekrun, R., Elliot, A. J., & Maier, M. A. (2006). Achievement goals and discrete achievement emotions: A theoretical model and prospective test. *Journal of Educational Psychology*, 98(3), 583–597. <https://doi.org/10.1037/0022-0663.98.3.583>
- Pekrun, R., Frenzel, A. C., Goetz, T., & Perry, R. P. (2007). The control-value theory of achievement emotions: An integrative approach to emotions in education. In P. A. Schutz & R. Pekrun (Eds.), *Emotion in education* (pp. 13–36). Academic Press.
- Pekrun, R., Goetz, T., Frenzel, A. C., Barchfeld, P., & Perry, R. P. (2011). Measuring emotions in students' learning and performance: The Achievement Emotions Questionnaire (AEQ). *Contemporary Educational Psychology*, 36(1), 36–48. <https://doi.org/10.1016/j.cedpsych.2010.10.002>
- Pekrun, R., Goetz, T., Titz, W., & Perry, R. P. (2002). Academic emotions in students' self-regulated learning and achievement: A program of qualitative and quantitative research. *Educational Psychologist*, 37(2), 91–105. https://doi.org/10.1207/S15326985EP3702_4
- Pekrun, R., Lichtenfeld, S., Marsh, H. W., Murayama, K., & Goetz, T. (2017). Achievement emotions and academic performance: Longitudinal models of reciprocal effects. *Child Development*, 88(5), 1653–1670. <https://doi.org/10.1111/cdev.12704>
- Podsakoff, P. M., MacKenzie, S. B., Lee, J. Y., & Podsakoff, N. P. (2003). Common method biases in behavioral research: A critical review of the literature and recommended remedies. *Journal of Applied Psychology*, 88(5), 879–903. <https://doi.org/10.1037/0021-9010.88.5.879>

- Poots, A., & Cassidy, T. (2020). Academic expectation, self-compassion, psychological capital, social support and student wellbeing. *International Journal of Educational Research*, 99(June 2019), 101506. <https://doi.org/10.1016/j.ijer.2019.101506>
- Preacher, K. J., & Hayes, A. F. (2008). Asymptotic and resampling strategies for assessing and comparing indirect effects in multiple mediator models. *Behavior Research Methods*, 40(3), 879–891. <https://doi.org/10.3758/BRM.40.3.879>
- Richardson, M., Abraham, C., & Bond, R. (2012). Psychological correlates of university students' academic performance: A systematic review and meta-analysis. *Psychological Bulletin*, 138(2), 353–387. <https://doi.org/10.1037/a0026838>
- Roeser, R. W., Eccles, J. S., & Sameroff, A. J. (2000). School as a context of early adolescents' academic and social-emotional development: A summary of research finding. *The Elementary School Journal*, 100(5), 443–471. <https://doi.org/10.1086/499650>
- Ryan, R. M., Deci, E. L., Grolnick, W. S., & La Guardia, J. G. (2015). The significance of autonomy and autonomy support in psychological development and psychopathology. In D. Cicchetti & D. J. Cohen (Eds.), *Developmental psychopathology: Theory and practice* (pp. 795–849). Wiley.
- Scholz, U., Kliegel, M., Luszczynska, A., & Knoll, N. (2012). Associations between received social support and positive and negative affect: Evidence for age differences from a daily-diary study. *European Journal of Ageing*, 9(4), 361–371. <https://doi.org/10.1007/s10433-012-0236-6>
- Shao, K., Pekrun, R., & Nicholson, L. J. (2019). Emotions in classroom language learning: What can we learn from achievement emotion research? *System*, 86, 102121. <https://doi.org/10.1016/j.system.2019.102121>
- Sharma, S., Mukherjee, S., Kumar, A., & Dillon, W. R. (2005). A simulation study to investigate the use of cutoff values for assessing model fit in covariance structure models. *Journal of Business Research*, 58(7), 935–943. <https://doi.org/10.1016/j.jbusres.2003.10.007>
- Shen, B., Wang, Y., & Yang, Y. (2023). Relationships between Chinese university EFL learners' academic emotions and self-regulated learning strategies: A structural equation model. *Language Teaching Research*, 1–26. <https://doi.org/10.1177/13621688221144832>
- Song, J., Bong, M., Lee, K., & Kim, S. Il. (2015). Longitudinal investigation into the role of perceived social support in adolescents' academic motivation and achievement. *Journal of Educational Psychology*, 107(3), 821–841. <https://doi.org/10.1037/edu0000016>
- Szumski, G., & Karwowski, M. (2019). Exploring the Pygmalion effect: The role of teacher expectations, academic self-concept, and class context in students' math achievement. *Contemporary Educational Psychology*, 59, 101787. <https://doi.org/10.1016/j.cedpsych.2019.101787>
- Tannert, S., & Gröschner, A. (2021). Joy of distance learning? How student self-efficacy and emotions relate to social support and school environment. *European*

- Educational Research Journal*, 20(4), 498–519.
<https://doi.org/10.1177/14749041211024784>
- Tazouti, Y., & Jarlégan, A. (2019). The mediating effects of parental self-efficacy and parental involvement on the link between family socioeconomic status and children's academic achievement. *Journal of Family Studies*, 25(3), 250–266. <https://doi.org/10.1080/13229400.2016.1241185>
- Thoits, P. A. (2011). Mechanisms linking social ties and support to physical and mental health. *Journal of Health and Social Behavior*, 52(2), 145–161. <https://doi.org/10.1177/0022146510395592>
- Tsang, A., & Dewaele, J. M. (2023). The relationships between young FL learners' classroom emotions (anxiety, boredom, & enjoyment), engagement, and FL proficiency. *Applied Linguistics Review*, Advance online publication. <https://doi.org/10.1515/applirev-2022-0077>
- Vrugt, A., & Oort, F. J. (2008). Metacognition, achievement goals, study strategies and academic achievement: Pathways to achievement. *Metacognition and Learning*, 3(2), 123–146. <https://doi.org/10.1007/s11409-008-9022-4>
- Wang, H., Wang, Y., & Li, S. (2023). Unpacking the relationships between emotions and achievement of EFL learners in China: Engagement as a mediator. *Frontiers in Psychology*, 14, 1–13. <https://doi.org/10.3389/fpsyg.2023.1098916>
- Wentzel, K. R. (1998). Social relationships and motivation in middle school: The role of parents, teachers, and peers. *Journal of Educational Psychology*, 90(2), 202–209. <https://doi.org/10.1037//0022-0663.90.2.202>
- Wentzel, K. R., Battle, A., Russell, S. L., & Looney, L. B. (2010). Social supports from teachers and peers as predictors of academic and social motivation. *Contemporary Educational Psychology*, 35(3), 193–202. <https://doi.org/10.1016/j.cedpsych.2010.03.002>
- Widding, U. (2018). Parental determinism in the Swedish strategy for parenting support. *Social Policy & Society*, 17(3), 481–490. <https://doi.org/10.1017/S1474746417000513>
- Xie, X., & Guo, J. (2023). Influence of teacher-and-peer support on positive academic emotions in EFL learning: The mediating role of mindfulness. *Asia-Pacific Education Researcher*, 32(4), 439–447. <https://doi.org/10.1007/s40299-022-00665-2>
- Yang, X., Zhu, J., & Hu, P. (2023). Perceived social support and procrastination in college students: A sequential mediation model of self-compassion and negative emotions. *Current Psychology*, 42(7), 5521–5529. <https://doi.org/10.1007/s12144-021-01920-3>
- York, T. T., Gibson, C., & Rankin, S. (2015). Defining and measuring academic success. *Practical Assessment, Research and Evaluation*, 20(5), 1–20. <https://doi.org/10.7275/hz5x-tx03>
- Yu, W., Wu, H., & Zhao, W. (2022). A qualitative analysis of control-value appraisals, positive achievement emotions, and EFL performance in a Chinese senior high school context. *Frontiers in Psychology*, 13, 1–10. <https://doi.org/10.3389/fpsyg.2022.986684>

Zull, J. E. (2006). Key aspects of how the brain learns. *New Directions for Adult and Continuing Education*, 110, 3–9. <https://doi.org/10.1002/ace.213>

Creative Commons licensing terms

Author(s) will retain the copyright of their published articles agreeing that a Creative Commons Attribution 4.0 International License (CC BY 4.0) terms will be applied to their work. Under the terms of this license, no permission is required from the author(s) or publisher for members of the community to copy, distribute, transmit or adapt the article content, providing a proper, prominent and unambiguous attribution to the authors in a manner that makes clear that the materials are being reused under permission of a Creative Commons License. Views, opinions and conclusions expressed in this research article are views, opinions and conclusions of the author(s). Open Access Publishing Group and European Journal of Education Studies shall not be responsible or answerable for any loss, damage or liability caused in relation to/arising out of conflicts of interest, copyright violations and inappropriate or inaccurate use of any kind content related or integrated into the research work. All the published works are meeting the Open Access Publishing requirements and can be freely accessed, shared, modified, distributed and used in educational, commercial and non-commercial purposes under a [Creative Commons Attribution 4.0 International License \(CC BY 4.0\)](https://creativecommons.org/licenses/by/4.0/).