

# The Influence of Peer Support on Boredom Proneness Among Upper-Grade Primary School Students: The Mediating Role of Perceived School Climate

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**Abstract :** Objective : Boredom is significantly correlated with various negative emotions such as anxiety and depression. This study aims to explore the impact of peer support on boredom among primary school students and verify the mediating role of perceived school climate. Methods: Three scales, namely the Peer Support Scale, Perceived School Climate Scale, and Boredom Proneness Scale, were used. The survey was conducted among fifth and sixth-grade students from three primary schools, with 500 questionnaires distributed and 465 valid ones recovered. Results: Perceived school climate plays a fully mediating role between peer support and boredom proneness, accounting for 100% of the mediating effect. Conclusion: Peer support can enhance upper-grade primary school students' positive perception of the school climate and reduce their boredom proneness.

**Keywords:** Peer Support; Perceived School Climate; Boredom Proneness; Upper-Grade Primary School Students

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## 1. Introduction

Boredom is a complex negative emotion experienced when one feels life is meaningless. Among adolescents, 12.1% belong to the high-boredom group, 21.5% often feel bored in daily life (Yang, Liu, & He, 2005), and 42.2% experience boredom during classes or learning, with the frequency of this experience second only to that of happiness (Dadzie, Drody, & Danckert, 2024)<sup>Error! Reference source not found.</sup>. Boredom is not only closely related to internal problems such as anxiety, depression, stress, and suicidal ideation but also associated with external problems like mobile phone dependence, emotional eating, cognitive failure, aggressive behavior, and suicidal behavior (Yu & Zhang, 2021). Trait boredom, also known as boredom proneness, refers to an individual's stable tendency to experience boredom, manifested as difficulty in developing interest in internal or external stimuli.

Peer support is an important source of social support for students at school. Positive interaction and support from peers can enhance students' sense of belonging, relieve stress (Wu & Lee, 2022), and reduce boredom proneness by improving their sense of control and value (Zhang, 2023). Perceived school climate refers to an individual's subjective experience and evaluation of the school climate. Due to differences in cognition, experience, and psychological characteristics among individuals, different people may have different perceptions of the school climate even in the same school environment (Lombardi et al., 2019). Therefore, this study intends to explore the impact of peer support on boredom proneness and the mediating role of perceived school climate.

## 2. Research Status

### 2.1. The Impact of Peer Support on Boredom

Peer support plays an important role in adolescence, especially in emotional regulation and coping with bullying (Jenkins, Fredrick, & Wenger, 2017). A study on children in grades 4-6 of primary school found that peer support is significantly positively correlated with positive academic emotions and significantly negatively correlated with negative academic emotions (Cheng, Zhang, & Zou, 2023). Peer support can effectively alleviate negative academic emotions; whether it is emotional comfort and encouragement or substantive support in learning tasks, it helps students face their studies with more positive emotions (Li & Zhang, 2014).

According to the social support theory, peer support can provide emotional comfort and support, enhance adolescents' sense of belonging and identity, act as a buffer between stress and positive emotional experiences, and help adolescents cope with stress and setbacks as well as relieve negative emotions (Zhang, 2020). According to the control-value theory of emotion, the generation of boredom is related to the sense of control and value. Individuals with high peer support engage in more interactive and cooperative behaviors, gain a sense of belonging and security through mutual assistance, and thus become more willing to try new things and take challenges, and obtain a sense of accomplishment and value in the process of trying and challenging. When students' sense of accomplishment improves, their sense of control is enhanced, and their autonomy is increased. Autonomy can stimulate students' internal motivation, making them more active in participating in activities, thereby improving their evaluation of the value of activities (Reis, Pfister, & Schwarz, 2023).

Empirical studies have found that peer support is negatively correlated with boredom proneness. When facing boredom, seeking peer support can reduce the impact of boredom proneness (Xu et al., 2021). Therefore, this study proposes Hypothesis 1:

Peer support of primary school students negatively predicts boredom proneness.

### 2.2. The Impact of Perceived School Climate on Boredom Proneness

Perceived school climate refers to the relatively persistent and stable environmental characteristics in a school that are experienced by its members and have an impact on their behaviors (Gao, Zhang, Li, & Zhang, 2024). Students' perceived school climate is significantly correlated with their mental health (Zhu, Li, & Yang, 2017)<sup>Error!</sup>  
Reference source not found. Adolescents' perception of the school climate is significantly negatively correlated with their depression level (Xu, Zhou, Liu, & Wang, 2014) and has a significant negative predictive effect on academic boredom proneness (Zhu, 2024).

According to the attachment theory, the important people for students at school are peers and teachers, and positive interaction with these important people can promote adolescents' social adaptation. A positive school climate can enhance students' sense of belonging, make students feel that they are part of the school, and thus improve their learning motivation and classroom participation. Therefore, this study proposes Hypothesis 2: The perceived school climate of upper-grade primary school students negatively predicts boredom proneness.

### **2.3. The Impact of Peer Support on Perceived School Climate**

Peer support plays an important role in shaping students' perception of the school climate, especially in terms of bullying, mental health, and academic engagement (Ulmanen, Tikkanen, & Pyhältö, 2024). According to the attachment theory, parent-child attachment enhances individuals' trust in the surrounding environment, and studies have also confirmed that parent-child attachment in the family can predict individuals' perceived social support (Wen, Chen, Yang, & Li, 2016). For upper-grade primary school students, the important people at school shift from parents to peers. Mutual support among peers can reduce students' stress and anxiety, improve their sense of happiness and life satisfaction, and thus have a positive impact on the perceived school climate (Jia, Way, Ling, & Yoshikawa, 2009)<sup>Error! Reference source not found.</sup>.

The social cognitive theory also holds that environmental factors affect emotional states through individual perception. When students perceive positive peer support, they will form a more friendly cognition of the campus environment, thereby reducing boredom; on the contrary, tense peer relationships may aggravate boredom by worsening the perception of the campus climate. Therefore, this study proposes Hypothesis 3:

Peer support of primary school students can positively predict perceived school climate, and perceived school climate plays a mediating role between peer support and boredom proneness.

## **3. Research Objects and Methods**

### **3.1. Research Objects**

Three primary schools were selected, and convenience sampling was adopted with the informed consent of the subjects. Fifth and sixth-grade students from the three primary schools were randomly selected, and questionnaires were distributed in a class-group testing manner. A total of 500 questionnaires were distributed, and 465 were recovered, with a recovery rate of 93%. Among the respondents, 264 were girls, accounting for 57.89%; 405 were sixth-grade students, accounting for 88.82%; and 410 were non-only children, accounting for 89.91%.

The average score of boredom proneness was 35.482, and the average item score was 2.959, which was at a lower-middle level. The average scores of perceived school climate and peer support were 81.931 and 12.114 respectively, with the average item scores of 3.039 and 3.211, which were at an upper-middle level. The results of the normality test showed that there was no significant sampling bias in the measurement indicators of the sample in this study. The kurtosis and skewness of each indicator were within the range of  $\pm 1.5$ , and the number of people in each category was evenly distributed without serious deviation from the normal distribution. Therefore, it is reasonable to use parametric statistical methods for subsequent statistical analysis.

### 3.2. Research Tools

Peer Support Scale: It is the Peer Support Subscale extracted from the Perceived Social Support Scale, which was compiled by Zimet et al. (1988) and revised by Huang Li et al. (1996). A higher score indicates a higher level of peer support. The Cronbach's  $\alpha$  coefficient of the Peer Support Scale was 0.846.

Perceived School Climate Scale: The Adolescent Perceived School Climate Questionnaire compiled by Jia et al. (2009) was used. The Cronbach's  $\alpha$  coefficient of this questionnaire in this study was 0.947.

Boredom Proneness Scale: The shortened version of the Boredom Proneness Scale, which was introduced by Li et al. (2016) in the Chinese college student group, was used. The internal consistency reliability of the total scale was 0.89, and it was applied here to measure primary school students. The Cronbach's  $\alpha$  coefficient of this questionnaire in this study was 0.893.

### 3.3. Data Analysis

In this study, the valid questionnaire data were analyzed using the online software SPSSAU, including descriptive statistical analysis, correlation analysis, and mediating effect analysis, to verify the mediating role of perceived school climate between peer support and boredom proneness.

## 4. Research Results

### 4.1. Common Method Bias Test

Harman's single-factor test was used to test the common method bias in this study. The analysis results showed that there were 5 factors with eigenvalues greater than 1, and the explanatory rate of the first factor was 38.606%, which did not exceed the critical value of 40%. This indicates that there was no significant common method bias in this study.

### 4.2. Correlation Analysis

Pearson product-moment correlation was used to conduct a correlation analysis among boredom proneness, peer support, and perceived school climate, and the results are shown in the table 1.

It can be seen from the table that there were strong correlations among the three variables. The boredom proneness of upper-grade primary school students was negatively correlated with both peer support and perceived school climate ( $r=-0.256$ ,  $p<0.01$ ;  $r=-0.208$ ,  $p<0.01$ ); the peer support of upper-grade primary school students was positively correlated with perceived school climate ( $r=0.628$ ,  $p<0.01$ ).

**Table 1 Correlation Analysis (n=465)**

	Boredom Proneness	Peer Support	Perceived School Climate
Boredom Proneness	1		
Peer Support	-0.256**	1	
Perceived School Climate	-0.208**	0.628**	1

Note: \* indicates  $p<0.05$  \*\* indicates  $p<0.01$

### 4.3. Mediating Effect Analysis of Perceived School Climate

Parallel mediating effect analysis was used to analyze the mediating role of perceived school climate.

Taking boredom as the dependent variable and peer support as the independent variable for regression analysis, the results showed that peer support of upper-grade primary school students had a significant direct predictive effect on boredom ( $F(1,463)=20.893, p<0.001$ ). That is, when the variable of perceived school climate was not included in the model, peer support could significantly negatively predict boredom, which supports Hypothesis 1.

Taking perceived school climate as the dependent variable and peer support as the independent variable for regression analysis, the results showed that peer support of upper-grade primary school students had a significant positive predictive effect on perceived school climate ( $F(1,463)=302.178, p<0.001$ ). That is, the higher the peer support score, the more positive the perception of the school climate among upper-grade primary school students, which supports Hypothesis 2.

Taking boredom proneness as the dependent variable and including both peer support and perceived school climate as independent variables for regression analysis, the results showed that peer support and perceived school climate could jointly predict boredom ( $F(2,462)=17.115, p<0.001$ ).

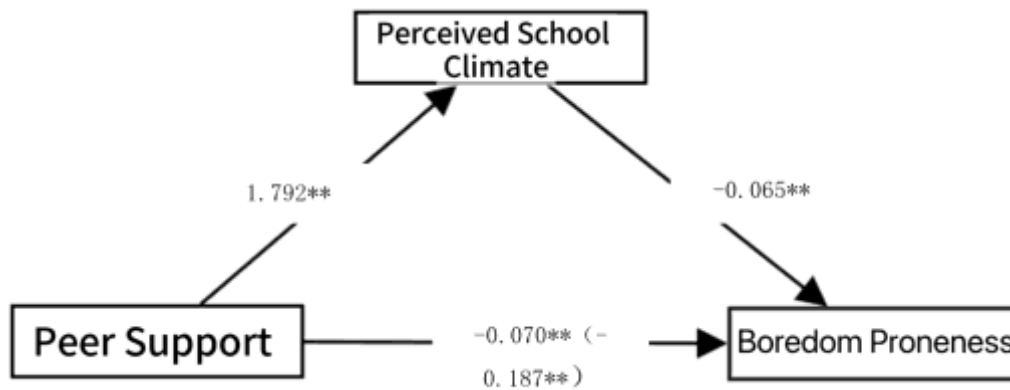
Finally, the Bootstrap method was used to test the significance of the mediating effect results. As shown in Table 3, the standardized path coefficient of the direct effect of peer support on perceived school climate was 1.792 ( $p < 0.01$ ), the standardized effect coefficient of the direct effect of perceived school climate on boredom proneness was -0.065 ( $p < 0.01$ ), and the standardized effect coefficient of the direct effect of peer support on boredom proneness was -0.187 ( $p<0.01$ ). The 95% confidence interval (CI) of the mediating effect of perceived school climate between peer support and boredom proneness was [-0.201, -0.058], which did not include 0. This indicates that perceived school climate plays a fully mediating role in the impact path of peer support on boredom, accounting for 100% of the mediating effect, and thus supports Hypothesis 3.

Model path	95% CI		Standardized effect coefficient	Effect proportion
	Lower limit	Upper limit		
DE Peer support→Perceived School Climate	1.994	1.994	1.792***	/
Perceived School Climate→Boredom Proneness	-0.101	-0.029	-0.065***	/
Peer support→Boredom Proneness	-0.172	0.032	-0.070**	37.43%
IE Peer support→Perceived School Climate→Boredom Proneness	-0.201	-0.058	-0.117	62.57%
TE Peer support→Boredom Proneness	-0.267	-0.107	-0.187***	100%

Note: \*\* indicates  $p<0.01$  \*\*\* indicates  $p<0.001$ . DE = Direct effect, IE = Indirect effect, TE = Total effect.

**Table 2 Summary of the Test Results of Mediating Effect (n=465)**

The mediating role of perceived school climate can be more directly seen from the mediating path diagram, as shown in Figure 1.



Note: ( ) indicates the direct effect and does not include the mediating effect size.

**Figure 1 The Intermediate path link diagram**

## 5. Conclusion and Discussion

### 5.1 Conclusion

The study showed that there is no direct correlation between peer support and boredom proneness among upper-grade primary school students; instead, the correlation is indirect through the key mediating factor of students' perception of a positive school climate. Based on this finding, when formulating intervention strategies, priority can be given to improving the students' peer support system: by strengthening mutual assistance and support among peers, guiding students to have a more positive view of the overall school climate, thereby effectively alleviating their sense of boredom during the learning process and ultimately preventing the formation of boredom proneness.

### 5.2 Discussion

The results of this questionnaire survey showed that the average score of boredom proneness among primary school students was slightly lower than the median value of 3 ( $M=2.959$ ,  $SD=0.390$ ), indicating that there was a certain degree of boredom proneness in the upper-grade primary school student group. The score of boredom proneness ( $35.482 \pm 4.656$ ) was lower than that of middle school students ( $40.01 \pm 11.19$ ; Peng, Sheng, Qiu, & Chen, 2023)<sup>Error! Reference source not found.</sup>. A longitudinal study found that boredom in the school environment may increase with the school year and is associated with a decline in academic performance (Grazia, Mameli, & Molinari, 2021).

This may be because Chinese education is relatively monotonous, mainly focusing on learning. With the increase in grades, students' learning pressure increases, while the interest in learning decreases, and the time for entertainment and leisure becomes less. Moreover, the main evaluation content in schools is still academic performance, and there are relatively few differentiated and personalized evaluations. A decline in academic performance means a sense of frustration, which can undermine students' sense of control, thereby leading to the experience of boredom. Therefore, Chinese education should continue to reform to make children's learning more free and diversified, allowing children to freely explore their interests and dreams.

#### 5.1. The Negative Predictive Effect of Peer Support on Boredom Proneness Among Upper-Grade Primary

## **School Students**

The research results showed that peer support of upper-grade primary school students had a negative predictive effect on boredom proneness, which was consistent with the existing research results (Johnson & Rogers, 2019; Suresh, Alam, & Karkossa, 2021). Good peer relationships can provide certain support and fun, reducing the sense of boredom, which is in line with the viewpoint of the social support theory. At the same time, individuals with high peer support engage in more interactive and cooperative behaviors, and obtain a sense of accomplishment and value through mutual assistance, trying, and challenging, thus reducing the sense of boredom.

### **5.2. The Negative Predictive Effect of Perceived School Climate on Boredom Proneness Among Upper-Grade Primary School Students**

Perceived school climate plays an important role in individuals' emotional experiences at school. The research results showed that perceived school climate could negatively predict boredom. This may be because a positive school climate provides rich learning resources and activities, satisfying students' curiosity and desire for knowledge, and reducing the sense of boredom caused by the lack of stimulation. Good teacher-student and peer relationships may also enhance students' sense of belonging and identity, making students more willing to participate in school activities and reducing the sense of boredom. In addition, a supportive school climate may encourage students to actively try and explore, improving their self-efficacy, thereby reducing the sense of boredom caused by a sense of powerlessness (Bettencourt, Musci, Clemans, & Carranza, 2017).

### **5.3. The Mediating Role of Perceived School Climate Between Peer Support and Boredom Proneness Among Upper-Grade Primary School Students**

This study also found that perceived school climate played a fully mediating role between peer support and boredom proneness among upper-grade primary school students, which means that peer support indirectly affects boredom proneness by constructing a positive cognition of the school environment. This mechanism is consistent with the "Supportive Environment - Sense of Belonging" model proposed by Poteat et al. (2024): when students feel more support from peers, they are more likely to consider the school as a positive, safe, and supportive environment, and this positive perception of the school climate will reduce their boredom proneness. This process can be explained in accordance with the path in the social cognitive theory that environmental factors affect emotional states through individual perception. When students perceive positive peer support, they will form a more friendly cognition of the campus environment, thereby reducing boredom; on the contrary, tense peer relationships may aggravate boredom by worsening the perception of the campus climate. According to the control-value theory of emotion, peer support indirectly improves the perception of the campus climate by enhancing students' sense of control and value evaluation, and ultimately reduces boredom proneness (Forsblom, Peixoto, & Mata, 2021).

Especially when encountering setbacks in studies, peer support can increase the sense of control of upper-grade primary school students. Studies have found that a sharp increase in the sense of boredom is related to negative academic performance, and students are more likely to experience boredom when they encounter setbacks in their studies (Grazia et al., 2021)<sup>Error! Reference source not found.</sup>. Peer support can provide emotional comfort and support, enabling individuals who have encountered academic setbacks to improve their self-efficacy to

overcome difficulties and enhance the sense of life meaning, thereby reducing boredom (O'Dea, Igou, & Van Tilburg, 2024). However, further investigation and research are needed to provide practical empirical evidence.

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