

## THEMATIC PAPER: APPRENTICESHIP

# The impact of teacher and parent support on academic achievement in secondary vocational students: The roles of learning engagement and achievement goal orientation

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**ABSTRACT**

This study examines the impact of teacher and parent support on the academic performance of secondary vocational students, with a focus on their interaction. By surveying 710 students in Shanghai using a self-determination theory-based scale, data were analyzed with Statistical Product and Service Solutions (SPSS) and Analysis of Moment Structures (AMOS). Results show that autonomy, emotional, and ability support from both parents and teachers significantly enhance academic performance. Learning engagement mediates the relationship between support and achievement, while achievement goal orientation moderates the effect of support on engagement. Furthermore, the interaction between teacher and parent support influences learning engagement. These findings highlight the importance of addressing students' psychological needs, fostering cooperation between families and schools, and guiding students toward goal orientation and a positive learning mindset, improving academic outcomes.

**Key words:** parent support, teacher support, academic performance, secondary vocational school students, self-determination theory

**INTRODUCTION**

Teacher and parent support are critical for students' academic development (Zimet *et al.*, 1988). Teacher support enhances academic achievement by fostering motivation and interest (Deci & Ryan, 2000), while family education complements school efforts (Yang, 2021). Although much research has focused on regular high school students, secondary vocational students face unique challenges. However, with appropriate support, these students demonstrate a strong desire to improve (Tang, 2021).

In China, academic performance remains a key measure of success, with teacher and parent support significantly

boosting learner engagement, which, in turn, improves academic outcomes (Skinner & Belmont, 1993). Both forms of support influence engagement through emotional, autonomy, and ability assistance, while achievement goal orientation plays a key role in academic performance.


This study examines how teacher and parent support impact secondary vocational students' academic outcomes in Shanghai, using self-determination theory, which emphasizes autonomy and competence as key motivators. The study explores the interaction between teacher and parent support, learning engagement, and achievement goal orientation (Ryan, 1995). Research indicates that social support positively impacts academic

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performance (Rosenfeld *et al.*, 2000), and learning engagement, including emotional experiences and cognitive strategies, is crucial for academic success (Fredricks *et al.*, 2004). Based on these insights, the study proposes the following hypotheses: (1) both teacher and parent support independently impact academic performance; (2) teacher and parent support interact to affect students' academic performance; (3) learning engagement mediates the relationship between teacher support and academic performance; (4) learning engagement mediates the relationship between parent support and academic performance; (5) achievement goal orientation moderates the effects of teacher and parent support on academic performance.

## METHODS AND RESEARCH DESIGN

This study surveyed 710 secondary vocational students from four public schools in Shanghai. A total of 800 questionnaires were distributed *via* the wx.cn platform, with an 88.75% response rate. Validated scales measured parent support, teacher support, learning engagement, achievement goal orientation, and academic performance. Teacher support was assessed using a modified Teacher as Social Contact (TASC) Scale, while parent support was measured with the Perceived Social Support Scale (PSSS). The Learning engagement scale referred to Fredricks' research and divided learning engagement into three dimensions of behavior, emotion and cognition. And the scale was revised also on the basis of the eleven items of engagement domain in The Student Self-Report For Middle School in Research Assessment Package scale (RAPS-SM) developed by Connell *et al.* and the Chinese Vocational School Student Learning Engagement Scale developed by Chinese scholar Wei Xiangyun. And achievement goal orientation was measured with Elliot and Chureh's Achievement Goal Questionnaire. Academic performance was evaluated based on results from the Unified Academic Level Examination or class rankings. Data analysis using Analysis of Moment Structures (AMOS) and Statistical Product and Service Solutions (SPSS) showed strong reliability and validity, with Cronbach's alpha values above 0.8 for most measures.

## RESULTS

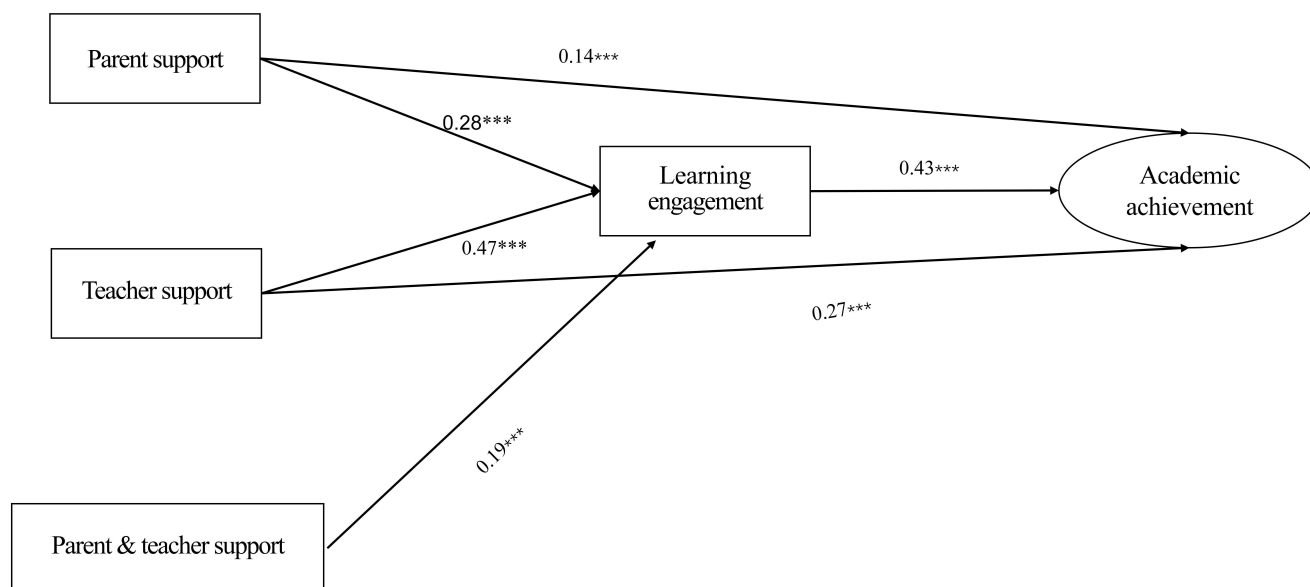
This study investigates how parent and teacher support influence the academic performance of secondary vocational students, focusing on perceived support across three dimensions: autonomy, emotion, and ability support. The analysis, based on multiple observed variables, demonstrated good model fit ( $\chi^2/df = 1.738$ , comparative fit index [CFI] = 0.976, tucker-lewis index [TLI] = 0.974, root mean square error of approximation [RMSEA] = 0.032), with standardized factor loadings

ranging from 0.67 to 0.88. Results revealed that both teacher support ( $\beta = 0.47$ ,  $P < 0.001$ ) and parent support ( $\beta = 0.26$ ,  $P < 0.001$ ) significantly influenced academic achievement, confirming the importance of these forms of support in vocational students' academic performance.

To explore the mediating role of learning engagement, a structural equation model was employed, revealing strong fit indices ( $\chi^2/df = 1.475$ , CFI = 0.976, TLI = 0.974, RMSEA = 0.026). Both teacher support ( $\beta = 0.47$ ,  $P < 0.001$ ) and parent support ( $\beta = 0.279$ ,  $P < 0.001$ ) positively influenced learning engagement, which subsequently impacted academic performance ( $\beta = 0.426$ ,  $P < 0.001$ ), validating the intermediary role of learning engagement. Bootstrap analysis (5000 simulations) indicated that teacher support had both direct (effect = 0.270, 95% confidence interval [CI] = [0.180, 0.355]) and indirect effects (effect = 0.200, 95% CI = [0.146, 0.266]) on academic performance, while parent support showed direct (effect = 0.139, 95% CI = [0.044, 0.223]) and indirect effects (effect = 0.119, 95% CI = [0.070, 0.177]). The total effect of teacher support was greater than that of parent support (difference = 0.213, 95% CI = [0.045, 0.383]), highlighting the stronger influence of teacher support due to longer interaction and close student-teacher relationships. These findings confirm that learning engagement partially mediates the impact of both support types on academic performance.

Further analysis using hierarchical regression identified a significant interaction between parent and teacher support ( $\beta = 0.191$ ,  $P < 0.001$ ), suggesting that their combined support enhances learning engagement. Simple slope tests showed that teacher support had a positive effect on learning engagement when parent support was low ( $\beta = 0.165$ ,  $P < 0.001$ ), and this effect was even stronger when parent support was high ( $\beta = 0.547$ ,  $P < 0.001$ ). These results suggest that both forms of support are critical for enhancing learning engagement and academic performance.

Hierarchical regression analysis was used to test the moderating effects of achievement goal orientation on the relationship between teacher and parent support and academic performance among secondary vocational students. Independent variables (teacher and parent support) and moderators (mastery, performance-approaching, and performance-avoiding goals) were mean-centered to reduce multicollinearity before forming interaction terms. Results reveal that mastery goal orientation significantly moderates the effect of support on academic achievement ( $\beta = 0.177$ ,  $P < 0.001$ ); academic performance increases with support regardless of mastery level, but the effect is stronger in



**Figure 1.** Model diagram of parent and teacher support affecting secondary school students' academic performance. \*\*\* $P < 0.001$ .

students with high mastery orientation. Similarly, performance-approaching goal orientation amplifies the positive influence of support, while performance-avoiding goal orientation weakens it. Each moderator was examined individually using high (+1 standard deviation [SD]) and low (-1 SD) groups. These patterns underscore the critical role of achievement goal orientation in shaping how social support impacts academic outcomes. These findings highlight the importance of considering individual goal orientations in developing targeted educational interventions.

The current study investigated the influence mechanism of parent and teacher support on the academic performance of secondary vocational school students, using a theoretical model and empirical data. Parent and teacher support significantly influences secondary vocational school students' academic performance. Learning engagement plays a partial mediating role, and goal orientation plays a moderating role in the relationship between parent and teacher support and academic performance. Furthermore, there is a significant interaction between parent and teacher support on secondary vocational school students' learning engagement (Figure 1). These findings provide essential guidance for developing effective strategies and interventions aimed at enhancing student outcomes in vocational education settings.

## CONCLUSION

This study, based on Self-determination and Social Support Theories, explores how teacher and parent support impact the academic performance of secondary

vocational students. A measurement scale tailored to the Chinese context assesses students' perceptions of support. Through theoretical modeling and empirical research, the study clarifies the relationships between teacher support, parent support, learning engagement, achievement goals, and academic performance.

The results reveal how teacher and parent support, especially in autonomy, emotional, and ability-based support, enhance academic outcomes by stimulating motivation and fostering scientific thinking. Teacher support has a stronger effect due to greater school interaction time. Learning engagement mediates these effects, emphasizing the importance of supportive environments. Additionally, achievement goal orientation moderates these relationships, with mastery and achievement-approach goals strengthening the impact of support.

The study provides guidance on enhancing vocational students' academic development through collaboration between teachers, parents, and students, focusing on goal orientation and engagement to improve outcomes.

## DECLARATIONS

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None.

### Author contributions

Sun XN: Conceptualization, Methodology, Investigation, Formal analysis, Visualization, Writing—Original draft, Writing—Review and Editing, Supervision, and Project administration. The author have read and approved the

final version of the manuscript.

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### **Ethical approval**

Not applicable.

### **Informed consent**

The author informed study respondents that the questionnaire was for research purposes and their responses would be used anonymously. The responding students participated voluntarily and completed the questionnaire online without their teachers or other school staff present.

### **Conflict of interest**

The author has no conflicts of interest to declare.

### **Data availability statement**

No additional data.

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