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The Impact of Proactive Behaviors of Vocational College Teachers on Teaching Performance: The Mediating Role of Organizational Support Perception

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Abstract: This study aims to explore the relationship between proactive behaviors, teaching performance, and organizational support among vocational college teachers. Based on the theory of organizational support, we conducted a survey of 373 teachers from four vocational colleges in Shanxi Province, using scales for proactive behaviors, organizational support, and teaching performance. The results indicate that: (a) There is a significant correlation between teachers' proactive behaviors and teaching performance; (b) There is a significant correlation between teachers' proactive behaviors and organizational support; (c) Organizational support plays a significant mediating role in the relationship between teachers' proactive behaviors and teaching performance. This study enriches the application of organizational support in vocational colleges, providing empirical evidence for improving teachers' proactive behaviors in higher education institutions, which could be useful for central or local education policy decision-makers and implementing units. Additionally, this model could be further applied beyond vocational education to other contexts or policies, demonstrating both theoretical and practical significance.

Keywords: *Organizational support perception, proactive behaviors, teaching performance, vocational college teachers.*

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Introduction

Vocational education is recognized as a clandestine powerhouse propelling the nation's economy (J. P. Zhu, 2023). German dual-system vocational education, focusing on practical skills, has equipped Germany with a robust engine, allowing it to navigate the world stage for nearly a century (R. Z. Yang & Sun, 2023). Similarly, the seamless integration of career and technical education in the United States has produced a plethora of highly skilled industrial workers, sustaining its current status as a global superpower in technology innovation and patent invention (Y. Li, 2020). As a vital type of higher education, vocational education, according to the regulations of higher education institutions, incorporates eligible technical colleges into the sequence of higher vocational institutions.

Teachers are the core force driving the development of vocational education. Historically, the faculty in Chinese higher vocational institutions has been relatively weak. Therefore, strengthening faculty construction is crucial for the development of higher vocational institutions and the enhancement of the quality of talent cultivation (Shi & Kuang, 2018).

Proactivity, defined as "taking the initiative," plays a pivotal role in capturing the lead in development details, grasping general principles within specific individuals, and understanding development trends in immaturity (Bateman & Crant, 1999; Vroom, 1964; Y. Zhao et al., 2023). In recent years, Chinese scholars have gradually conducted empirical research on the relationship between proactive behaviors, organizational support, and job performance. Proactive behaviors have a significant positive impact on performance, such as manager's proactive behaviors on individual performance (J. D. Zhang, 2012), employee's proactive behaviors on team innovation performance (J. Z. Xu & Zhu, 2016), and employee's voice behavior on innovative performance (Zhan & Li, 2020). Regarding organizational support, some researchers suggest it has a mediating or partially mediating role (A. M. Yan & Li, 2016; L. Yan & Zhang, 2017; W. S.

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Yang & Yang, 2019), while others argue for a moderating effect (H. Y. Huang, 2014; W. M. Xu & Song, 2013; J. Zhang et al., 2014; Z. H. Zhang & Liu, 2017).

J. D. Zhang (2012) examined the mediating role of organizational commitment and job involvement in the relationship between organizational support and job performance among university teachers. Specifically, job support and value identification were found to influence research performance through organizational commitment, while value identification influenced teaching performance through job involvement. In other words, individuals with higher levels of proactive behaviors tend to perceive higher levels of organizational support, ultimately leading to higher levels of teaching performance.

Given the above background, the issue of teaching performance requires considerable attention in today's educational landscape, especially in terms of the analysis of influencing factors, formation processes, and mitigating factors. Vocational colleges in Shanxi Province play a crucial role within the province's higher education landscape, and promoting the development of vocational education is also a key initiative to boost Shanxi's economic development. Therefore, this study argues that talent development among vocational college teachers in Shanxi Province should receive more attention and emphasis from the industry.

Based on a literature review, this study identified the current shortcomings and gaps in research, laying the groundwork for further enriching research on teaching performance among vocational college teachers. The study constructed a regression prediction model for teacher proactive behavior and analyzed the mediating mechanism of organizational support between teacher proactive behavior and teaching performance. Finally, detailed recommendations based on the research findings are provided for government, academic institutions, scientific management, and future research reference.

Literature Review

The Concept of Proactivity: Its Origins, Definitions, and Impact on Teaching Performance

The concept of proactivity, rooted in the field of experimental psychology, can be traced back to the 1930s, defined as the conflict between early and later learning performances (Whitely & Blankfort, 1933). Proactive behavior, also translated as proactive action, positive behavior, forward-looking behavior, or innovative proactive behavior, lacks consensus in its definition (K. He, 2021; Y. Huang & Peng, 2013; Kong et al., 2020; J. H. Wu, 2013). Studies reveal a close connection between individual and situational interactions and proactive behavior. When individuals perceive their work environment as meaningful, indicating positive returns in cognitive or emotional energy, they tend to engage more actively in their work, utilizing their knowledge, cognitive abilities, and emotions more effectively (Lepine & Van Dyne, 1998). Ohly and Fritz (2007) examined the correlation between motivational factors (such as self-efficacy and intrinsic motives) and proactive behavior, introducing intrinsic motivation and work self-efficacy. The results demonstrated a positive correlation between role breadth self-efficacy, role definition, and proactive behavior as assessed by colleagues.

Job performance refers to the outcomes achieved in work, recording an employee's work achievements. Descriptive terms include responsibilities, outputs, key result areas, duties, indicators, tasks, goals, productivity, key performance indicators, standards, and purposes (Bernardin & Beatty, 1984). Initially focusing on the output of work or activities, a behavior-based perspective of performance emerged. Murphy (1989) defined performance as a set of behaviors related to an employee's organizational or unit goals. Borman and Motowidlo (1993) proposed a representative concept, dividing performance into task performance and contextual performance.

According to Whitely and Blankfort's (1933) theory of proactivity, there exists a conflict between early and later learning performances. Research indicates a positive correlation between specific proactive behaviors and individual performance assessed by supervisors or employees (Grant et al., 2009). Employees with higher job performance are more likely to generate creative ideas, aiding in adapting to a continually changing environment (Binnewies et al., 2007). Most empirical studies suggest that individuals with a proactive personality often adopt more proactive and positive behaviors to change their environment. Higher employee performance, job satisfaction, and behaviors with proactivity are significantly positively influenced by a proactive personality (Belschak & Den Hartog, 2010). Hence, we propose the following hypothesis:H1: There is a significant correlation between teacher proactive behavior and teaching performance.

Organizational support perception is the psychological perception of whether employees feel recognized and supported by the organization in terms of their status, image, prestige, and influence within the organization (Anderson et al., 2001). Research by L. Su and Xu (2017) found that organizational support perception increases with a supportive organizational atmosphere. Studies on organizational support and proactive behavior often focus on the moderating role of organizational support perception in the relationship between proactive behavior and its antecedents. Janssen (2005) surveyed 170 employees from Dutch companies, revealing that supervisor support moderates the relationship between perceived job support and proactive behavior. H. Y. Huang (2014) found that informal networks in an organization positively predict individual proactivity and that organizational support perception plays a positive moderating role in the relationship between informal networks and proactivity. Gu et al. (2014) conducted research on

research and development personnel in China, indicating that organizational support perception has a significantly positive impact on their proactive innovative behavior, especially with supervisor support. In other words, individuals with higher organizational support perception exhibit higher proactive behavior. S. L. Wu and Lan (2017) found a similar result when studying care and education service personnel, where higher levels of proactive behavior corresponded to higher organizational support perception. Therefore, we propose the following hypothesis: H2: There is a significant correlation between teacher proactive behavior and organizational support perception.

Based on a review of relevant literature, organizational support is frequently identified as a mediator variable (C. Y. Jiang, 2007; X. Y. Jiang et al., 2023; J. Li et al., 2023; Wen & Hou, 2015; A. M. Yan & Li, 2016). In the study of the relationship between career development opportunities and college teachers' professional identity, organizational support perception serves as a mediating effect (She, 2023). In the investigation of how workplace deception affects the mechanism of organizational citizenship behavior, organizational support perception is used as a mediating variable (Luo & Xu, 2023). Therefore, we propose the following hypothesis:H3: Organizational support perception has a significant mediating effect on the relationship between teacher proactive behavior and teaching performance.

Methodology

Research Design

This study takes proactive behavior of vocational college teachers as the independent variable, teaching performance as the dependent variable, and organizational support as the mediating variable. Based on these research hypotheses, the research structure shown in Figure 1 is proposed.

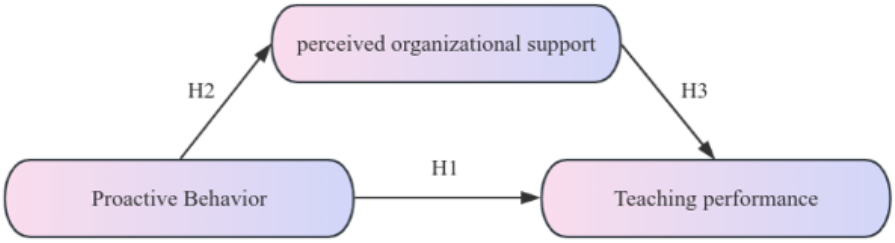

Figure 1. Research Framework

Research Participants

This study was conducted from October to November 2023. The participants were teachers from four vocational colleges in Shanxi Province, China. Convenient sampling was employed, and data collection was carried out through an online questionnaire survey, which was anonymous and objective, thereby saving time and costs (Wright, 2006). A total of 530 vocational college teachers were selected as participants, with 410 responses received. After deleting some questionnaires that did not meet the basic criteria of this study and those with less than 1 minute of response time, a total of 373 valid questionnaires were collected.

The primary reason for selecting these participants is that Shanxi Province is one of the provinces in China with abundant energy resources, and its number of higher vocational colleges ranks high in China. These teachers originally come from 28 provinces and autonomous regions nationwide, thus representing different regions. Teachers from these four vocational colleges come from a wide range of provinces and autonomous regions. These four colleges play a leading role in vocational education in China, hence the sample's representativeness.

The study strictly adhered to the requirements and ethical guidelines of the Thai National Research Committee. Participants were informed in detail about the purpose of the research before answering the questionnaire and signing the informed consent form. All participants were assured that the research data would only be used for this study and not for any other purposes. Privacy of each participant was safeguarded, and they had the right to withdraw their data at any stage of the research.

Research Instruments

Proactive Behavior Scale: This study utilized measurement instruments developed by Parker and Collins (2008) for proactive behavior, focusing on three dimensions: proactive work behavior, proactive strategic behavior, and proactive adaptability behavior. Sample items included, "Do you actively observe changes in the environment, anticipating events that may impact the future development of your organization?" After pre-testing and validation,In this study, the Cronbach's α coefficients for the three sub-dimensions of proactive behavior were .87 for proactive strategic behavior, 0.89 for proactive personal-environment fit behavior, and .92 for proactive work behavior. The overall scale had a Cronbach's α coefficient of .92. The research results revealed a Kaiser-Meyer-Olkin (KMO) measure of .88, and the chi-square value of Bartlett's Test of Sphericity reached a significant level, indicating good reliability and validity.

Organizational Support Perception Scale: Additionally, the study employed a simplified scale for measuring Perceived Organizational Support (POS) developed by Eisenberger et al. (2001). This one-dimensional scale with eight items aimed to measure the intensity of organizational support perception. An example item was, "Our school genuinely cares about my physical and mental well-being." After pre-testing and validation, In this study, the Cronbach's α coefficient for the single dimension of organizational support perception was .92. The research findings revealed a Kaiser-Meyer-Olkin (KMO) measure of .92, and the chi-square value of Bartlett's Test of Sphericity reached a significant level, indicating good reliability and validity.

Teaching Performance Scale: Finally, the study utilized the work performance indicator system proposed by X. Zhang (2007), Yu and Chen (2009), and Tan and Zhao (2012) for university teachers. The self-evaluation teaching performance scale was derived and validated through expert discussions, consisting of three sub-dimensions: routine performance, research performance, and competition performance, with a total of 12 items. A sample item was, "The average weekly teaching hours for your classroom instruction (including in-class practical components)." After pre-testing and validation, in this study, the Cronbach's α coefficients for the three sub-dimensions of teaching performance were .75 for routine performance, .85 for research performance, and .79 for competition performance. The overall scale had a Cronbach's α coefficient of .82. The research results revealed a Kaiser-Meyer-Olkin (KMO) measure of .76, and the chi-square value of Bartlett's test of sphericity reached a significant level, indicating good reliability and validity.

Data Analysis

After distributing and collecting the questionnaires, the following steps were taken to process the questionnaire data in this study. Firstly, invalid questionnaires were excluded to ensure the quality of the final dataset. Subsequently, the raw data were coded and entered into a computer database. Next, detailed data analysis was conducted using software such as SPSS22, AMOS24, PROCESS4.1, or equivalent programs. Descriptive statistics, correlation analysis, regression analysis, and other methods were employed to thoroughly explore patterns and relationships within the questionnaire data. In statistical analysis, a significance level of α=.05 was uniformly set to validate research hypotheses.

In this study, data analysis was conducted using SPSS 22.0 for frequency distribution, percentages, mean, and standard deviation statistics on the collected samples. Additionally, AMOS 24 was employed for Confirmatory Factor Analysis (CFA) to assess the model fit of the individual-level, organizational-level, proactive behavior, and teaching performance scales. The following steps were undertaken:

Descriptive statistics using SPSS 22.0: Frequencies, percentages, and statistical measures such as mean and standard deviation were computed to provide a comprehensive overview of the sample characteristics.

Confirmatory factor analysis (CFA) using AMOS 24: AMOS 24 was utilized to perform CFA, evaluating the adequacy of the measurement model for individual-level, organizational-level, proactive behavior, and teaching performance scales. Model fit indices including Comparative Fit Index (CFI), Tucker-Lewis Index (TLI), Root Mean Square Error of Approximation (RMSEA), and Standardized Root Mean Square Residual (SRMR) were scrutinized.

Mediation Analysis using PROCESS 4.1: The PROCESS 4.1 analysis module was employed to investigate the mediating effects. Organizational support perception was tested as a mediator between proactive behavior and teaching performance. The bootstrapping technique was used with a substantial number of resamples to address bias and enhance the precision of confidence intervals. A comparison with traditional Sobel tests highlighted the advantages of the bootstrap method in terms of bias correction and increased statistical power (Qiu, 2019).

The chosen analytical approach aims to provide a robust and comprehensive evaluation of the relationships between variables in the study, with a focus on mediating effects. The implementation of advanced statistical techniques, such as bootstrapping, enhances the accuracy of results and ensures a more reliable interpretation of the study's findings.

Results

Analysis of Demographic Variables Among Higher Education Institution Teachers

In terms of gender, there were 231 females, accounting for 61.9%, and 142 males, representing 38.1%. Among the teachers, 158 were employed at the national level institutions, constituting 42.4%, 105 were at the provincial level institutions, making up 28.2%, and 110 were at ordinary institutions, comprising 29.5%. Regarding age distribution, 113 teachers were aged 35 and below, accounting for 30.3%, 92 teachers were aged between 36 and 40, making up 24.7%, 65 teachers were aged between 41 and 45, representing 17.4%, and 103 teachers were aged 46 and above, accounting for 27.6%. As for educational qualifications, 135 teachers held bachelor's degrees, making up 36.2%, 201 teachers held master's degrees, comprising 53.9%, 28 teachers had doctoral degrees, accounting for 7.5%, and 9 teachers had other qualifications, representing 2.4%.

From the distribution of demographic variables among Chinese vocational college teachers outlined above, it can be observed that, overall, the sample consisted of a higher proportion of female teachers. In terms of institutional level, the majority of the sample was from national-level institutions. Regarding age, the highest number of teachers fell within

the 35 and below and 46 and above age brackets, both exceeding 100 individuals. In educational attainment, most teachers held master's degrees.

Regression Analysis of Factors Influencing Proactive Behavior

As shown in Table 1, the correlation coefficients among the various dimensions of teachers' proactive behavior range between .4 and .6. This alignment falls within the statistical requirements for correlation, rendering the results highly persuasive. The reasonable correlation among these dimensions indicates an optimal balance – avoiding excessive overlap while maintaining a significant level of association. Importantly, each dimension exhibits a correlation with the proactive behavior variable exceeding .6, underscoring their collective relevance in explaining variations in teachers' proactive behavior. This information is thus deemed sufficient for understanding the determinants of proactive behavior among teachers.

Table 1. Correlation Analysis of the Various Dimensions of Proactive Behavior

	Mean	Std. Dev.	1	2	3	4	5
1.Strategic Behavior	3.00	2.15	—				
2.Feedback-Seeking Behavior	2.93	2.49	.55**	—			
3.Advice-Giving Behavior	2.96	1.77	.58**	.59**	—		
4.Innovation Behavior	3.41	1.21	.41**	.45**	.39**	—	
5.Proactive Behavior	3.03	6.11	.82**	.86**	.81**	.64**	—

** $p < .01$; * $p < .05$. Note: The table presents mean, standard deviation, and Pearson correlation coefficients. All correlations are significant at the .01 level (two-tailed).

This table provides the descriptive statistics (mean and standard deviation) and the Pearson correlation matrix for different dimensions of teachers' behaviors. The correlations between each pair of dimensions are indicated by the values in the upper triangle, demonstrating the strength and direction of the relationships. All correlations are statistically significant at the .01 level.

Correlation Analysis of Proactive Personality and Work Vitality with Teacher Proactive Behavior

As indicated in Table 2, the correlations between proactive personality and teacher proactive behavior, as well as its individual dimensions, are .37, .43, .20, .35, and .17, respectively. With the exception of feedback-seeking behavior and innovation behavior, all other dimensions exhibit a moderate positive correlation. This suggests that, independently of other influencing factors, higher levels of proactive personality are associated with stronger manifestations of proactive behavior among teachers.

Similarly, the correlations between work vitality and teacher proactive behavior, as well as its individual dimensions, are .37, .49, .17, .29, and .26, respectively. Except for feedback-seeking behavior, all other dimensions demonstrate a moderate positive correlation. In the absence of other influencing factors, higher levels of work vitality correspond to stronger expressions of proactive behavior among teachers. The correlations between work focus and teacher procrastination behavior, both overall and across various dimensions, are as follows: .50, .46, .34, .44, and .35. All correlations are above .30, indicating a moderate positive correlation.

Table 2. Correlation Analysis of Individual and Organizational Factors With Proactive Behavior and Its Dimensions

	Mean	Std. Dev.	Strategy Behavior	Feedback-Seeking Behavior	Advice-Giving Behavior	Innovative Behavior	Proactive Behavior
Proactive Personality	2.84	2.81	.43**	.20**	.35**	.17**	.37**
Work Vitality	2.96	2.80	.49**	.17**	.29**	.26**	.37**
Work Focus	2.91	3.21	.46**	.34**	.44**	.35**	.50**
Goal Orientation	3.31	2.86	.51**	.23**	.36**	.42**	.46**
Organizational Culture	3.02	3.33	.55**	.37**	.35**	.32**	.51**
Organizational Status	2.58	2.99	.52**	.39**	.51**	.06	.50**

** $p < .01$; * $p < .05$. Note: The table presents mean, standard deviation, and Pearson correlation coefficients. All correlations are significant at the .01 level (two-tailed).

This table provides information on the mean, standard deviation, and Pearson correlation coefficients for individual and organizational factors in relation to proactive behavior and its individual dimensions. The correlations indicate the strength and direction of the relationships. All correlations are statistically significant at the .01 level, as denoted by $p<.01$.

Goal orientation is correlated with teacher proactive behavior and its dimensions at .46, .51, .23, .36, and .42, with all dimensions showing a moderate positive correlation except for feedback-seeking behavior. In the absence of considering other influencing factors, higher goal orientation corresponds to stronger proactive behavior exhibited by teachers. Individuals with a strong learning goal orientation prioritize the acquisition of knowledge and skills, engaging in challenging tasks and undertaking innovative proactive actions in the face of potential errors or failures, pursuing innovation in uncertain situations (Elliot & McGregor, 2001).

Organizational culture is correlated with teacher proactive behavior and its dimensions at .51, .55, .37, .35, and .32, all showing correlations above .30 and indicating a moderate positive relationship. Without considering other influencing factors, higher levels of organizational team culture are associated with stronger proactive behavior exhibited by teachers.Wang and Chen (2018) pointed out that organizational culture in the Chinese context significantly influences employees' creativity. A team-oriented culture that emphasizes change and collaboration provides teachers with a sense of security and autonomy, weakens the risks associated with innovation, and strengthens the positive relationship between proactive behavior and teaching performance.

Mediation Effect Analysis of Organizational Support

The core of mediation effect testing lies in the examination of the coefficient product ab. In recent years, due to advancements in statistical simulation techniques and improved computer processing speeds, bootstrapping has been employed to estimate the standard error of the indirect effect instead of the traditional Sobel test. This provides the bootstrapping standard error of the parameters, enabling the establishment of a 95% confidence interval. This study employs bootstrapping to test the mediation effect of organizational support (L. Yan et al., 2018; W. S. Yang & Yang, 2019).

As shown in Table 3, the correlation between organizational support and teacher proactive behavior and its dimensions is .51, .57, .36, .38, and .24, respectively. Except for innovative behavior, all other dimensions exhibit a moderate positive correlation. Without considering the influence of other factors, higher organizational support is associated with stronger proactive behavior exhibited by teachers.

Conventional performance has no significant correlation with teacher proactive behavior and its dimensions, with correlations of -.01, -.04, -.04, .01, and -.03, respectively.

Research performance has a low positive correlation with teacher proactive behavior and its dimensions, with correlations of .22, .21, .11, .24, and .18, respectively. In the absence of considering other influencing factors, higher research performance is associated with stronger proactive behavior exhibited by teachers.

Competition performance has a low positive correlation with teacher proactive behavior and its dimensions, with correlations of .19, .24, .12, .18, and .04, respectively. Except for innovative behavior, all other dimensions exhibit a low positive correlation. Without considering other influencing factors, higher competition performance is associated with stronger proactive behavior exhibited by teachers.

Table 3. Correlation Analysis of Organizational Support, Teaching Performance, and Proactive Behavior and Its Dimensions

	Mean	Std. Dev.	Strategy Behavior	Feedback-Seeking Behavior	Advice-Giving Behavior	Innovative Behavior	Proactive Behavior
Organizational Support	2.94	3.98	.57**	.36**	.38**	.24**	.51**
Routine Performance	2.66	1.87	-.01	-.04	-.04	.01	-.03
Research Performance	2.13	3.23	.21**	.11*	.24**	.18**	.22**
Competition Performance	2.37	2.04	.24**	. 12*	.18**	.04	.19**
Teaching Performance	2.33	5.31	.22**	.10	.21**	.13*	.20**

** $p < .01$; * $p < .05$. Note: The table presents mean, standard deviation, and Pearson correlation coefficients. All correlations are significant at the .01 level (two-tailed).

From Tables 4, 5, and 6, it can be observed that proactive behavior has a significant impact on teaching performance (βc=.20, t=4.00, p<.001), proactive behavior influences organizational support (βa=.51, t=11.34, p<.001), and organizational support affects teaching performance (βb=-.13, t=-2.13, p<.05). Therefore, hypotheses 12, 13, and 14 are all supported. However, the explanatory power of proactive behavior on teaching performance remains significant (βc'=.27, t=4.54, p <.001), indicating the absence of a fully mediating effect as defined by Baron and Kenny.

Moreover, based on bootstrapping tests for the mediation effect, the indirect effects or mediation effects, represented by the bootstrapped confidence intervals, do not include zero, indicating statistical significance. As shown in Tables 5 and 6, the bootstrapped confidence intervals for coefficients a and b, ".26, .40" and "-.32, -.01," respectively, do not cover zero, confirming the significance of the mediating effect facilitated by organizational support.

Table 4. Coefficient c

Model	Unstandardized Coefficients		Standardized Coefficients	*t*	LLCI	ULCI
3	Coefficient	Standard Error				
(Constant)	14.02	1.76		7.98**	10.56	17.47
Proactive Behavior	.18	.04	.20	4.00**	.09	.26

** $p < .01$; * $p < .05$. Note: The table presents mean, standard deviation, and Pearson correlation coefficients. All correlations are significant at the 0.01 level (two-tailed).

Table 5. Coefficient a

Model	Unstandardized Coefficients		Standardized Coefficients	*t*	BootLLCI	BootULCI
1	Coefficient	Standard Error				
(Constant)	4.62	1.16		3.99**	1.73	7.57
Proactive Behavior	.33	.03	.51	11.34**	.26	.40

** p < .01; * p < .05.Note: The table presents mean, standard deviation, and Pearson correlation coefficients. All correlations are significant at the 0.01 level (two-tailed).

Table 6. Coefficient b and Coefficient c'

Model	Unstandardized Coefficients		Standardized Coefficients	*t*	BootLLCI	BootULCI
2	Coefficient	Standard Error				
(Constant)	14.79	1.79		8.28**	11.18	18.33
Organizational Support	-.17	.08	-.13	-2. 13*	-.32	-.01
Proactive Behavior	.23	.05	.27	4.54**	.12	.34

** p < .01; * p < .05. Note: The table presents mean, standard deviation, and Pearson correlation coefficients. All correlations are significant at the .01 level (two-tailed).

Additionally, according to the mediating effect testing procedure proposed by Fang and Wen (2023), when ab increases, and ab and c' have opposite signs, the indirect effect partially offsets the direct effect, indicating a certain degree of masking effect. Organizational support, to some extent, conceals the impact of proactive behavior on teaching performance. Controlling for organizational support significantly amplifies the influence of proactive behavior on teaching performance, as depicted in Figure 2.

Figure 2. Estimated Results of the Mediation Effect

Through the mediation analysis, it was found that teacher procrastination behavior affects teaching performance and organizational support perception. Furthermore, the significant impact of teacher procrastination behavior on teaching performance is significantly enhanced by the involvement of organizational support perception. Additionally, organizational support perception has a significant negative impact on teaching performance, demonstrating that organizational support perception acts not only as a complete mediator but also as a masking effect. Therefore, the hypotheses H1, H2, and H3 are supported. H1: There is a significant correlation between teacher procrastination behavior and teaching performance. H2: There is a significant correlation between teacher procrastination behavior and organizational support perception. H3: Organizational support perception mediates the relationship between teacher procrastination behavior and teaching performance.

Discussion

Teacher procrastination behavior has a significant positive impact on teaching performance. This study is consistent with most empirical studies such as Grant et al. (2009) and Belschak and Den Hartog (2010). Additionally, this study found that the influence of teacher procrastination behavior on teaching performance is positive and significant. Teachers characterized by procrastination behavior are confident when facing teaching tasks, actively seek professional knowledge, explore teaching methods, engage in research practices, and enhance teaching abilities.

Teacher procrastination behavior also has a significant positive impact on organizational support. This finding aligns with the discovery by Janssen (2005). Organizational support plays a moderating role in the relationship between teachers' perceived job support and their procrastination behavior. When teachers perceive that their supervisors affirm and support their innovative behavior, they are encouraged to engage in procrastination behavior to complete innovative activities.

Organizational support perception partially moderates the impact of procrastination behavior on teaching performance. This finding is similar to that of Eisenberger et al. (1986) and She (2023). Organizational support perception plays a crucial mediating role. This study further confirms that when teachers exhibit high levels of procrastination behavior, they can successfully complete teaching, research, and competition tasks, triggering a positive psychological state that enables them to adapt actively to changes and uncertainties in the teaching process, thereby leading to stronger procrastination behavior. Organizational support perception enhances teacher procrastination behavior, instilling confidence in them and resulting in higher teaching performance.

In Chinese society, with nearly three decades of educational expansion, both genders receive equal education and enjoy equal attention and support after entering the workforce (H. J. Zhao & Xi, 2017). Indeed, the influence of traditional Chinese culture is profound, and there are still significant differences in the procrastination behavior exhibited by teachers, with males tending to lean towards strategic actions. Due to historical reasons, many vocational colleges on the mainland were transformed from technical schools or vocational high schools in the early days of the country's establishment, with relatively low educational requirements for teachers. With the development needs of schools, an increasing number of highly educated teachers have become faculty members at vocational colleges, influencing the working methods of older teachers.

Chinese vocational colleges are vigorously introducing research-oriented talents with doctoral degrees and other high academic qualifications, hoping that they can lead the construction of discipline clusters and innovate teaching work with their rich theoretical knowledge base and outstanding research capabilities. (S. M. Xu, 2016). Proactive behavior is usually directed toward challenging and risky tasks, requiring teachers to invest more effort and energy to attempt to change the environment. In an equal, rational, free, and non-utilitarian organizational culture and status of higher vocational colleges, teachers exhibit stronger proactive behavior (D. R. Ding, 2020; J. P. Xie, 2017). However, in the process of plan implementation, higher vocational colleges need to further reform the existing teacher performance evaluation standards as excessive organizational support may undermine teachers' proactive behavior (Y. C. Zhu & Jin, 2022).

Conclusion

While there have been several studies exploring proactive personality and behavior, particularly in the context of higher vocational college teachers, there is a lack of empirical research on this specific group. This study, building on the existing literature, developed a measurement scale for teachers' proactive behavior with good reliability and validity. The reliability and validity of the scale have been thoroughly validated and have reached satisfactory levels. Through statistical tests in empirical research, the study revealed four significant dimensions of teacher procrastination behavior: strategic behavior, seeking feedback behavior, advisory behavior, and innovative behavior. This finding provides important clues for a deeper understanding of the procrastination tendencies and behaviors of teachers in vocational colleges, filling a research gap in this field.

Research on the teaching performance of vocational college teachers in China is still in its early stages. This study explores the relationship between teacher procrastination behavior, organizational support perception, teaching performance, and further clarifies the influence of teacher procrastination behavior on teaching performance and the mechanism of organizational support perception in the relationship between procrastination behavior and teaching performance. This research not only supplements the current research in this field but also enriches Bandura's (1977, 1986) social learning theory. It also helps to enrich and improve research on teacher procrastination behavior, organizational support perception, and teaching performance in vocational colleges, providing a reference for further research.

This study reveals the current status of teaching performance among vocational college teachers in China, which is beneficial for vocational college administrators and teachers to understand teaching performance. It helps teachers realize the necessity and urgency of improving teaching performance, which will contribute to addressing the issue of passivity among vocational college teachers. By focusing more on the psychological factors in the daily work of vocational college teachers and providing timely guidance on effective coping strategies, vocational college teachers' teaching performance can be enhanced. Through research on the relationship between teacher procrastination behavior and teaching performance, and the role of organizational support in mediating this relationship, administrators and teachers in colleges can better understand the importance of reducing procrastination behavior.

Recommendations

The resource acquisition capability of vocational colleges has certain limitations due to their strategic positioning, which determines lower requirements for teachers compared to research-oriented universities. Cost-oriented salary strategies can be adopted to provide moderately competitive salary levels in the academic labor market, attracting high-educated talents and stabilizing the teaching staff. Human resources departments should include procrastination behavior as part of the competency assessment for teacher positions and make it one of the conditions for recruitment and promotion. During the interview process, recruiting selection techniques such as cognitive ability tests, personality interest and achievement tests, and leaderless group discussions can be used to select candidates with high procrastination personality, work vitality, work focus, and goal orientation, while eliminating potential candidates with low procrastination behavior. Organizational culture and status are important influencing factors of teacher procrastination behavior. Vocational colleges need to advocate a campus culture atmosphere that is free, open, democratic, and inclusive, allowing teachers to feel their informal status within the organization, thus fully unleashing the potential of teacher procrastination behavior. Strengthen career planning education and integrate vocational education into the curriculum (Qiao & Huang, 2019).

Both central and local governments should increase investment in vocational education, changing the current situation where vocational colleges' per-student funding is only equivalent to about 50% of regular universities (Ge, 2015). Local authorities should fully recognize the strategic position of vocational education and change the prevailing societal disdain for vocational education. When regulating the total amount of performance-based pay for universities, higher-level departments should consider the personnel structure and professional characteristics of universities, with a significant bias towards performance-based pay. The country's principle of "limiting high, stabilizing the middle, and providing a safety net" for the distribution of performance-based pay in public institutions can effectively prevent the widening of income gaps and promote the construction of a harmonious society. However, as public welfare-type institutions, universities shoulder three major functions: talent cultivation, scientific and technological innovation, and social services. Their inherent nature means they should not be subject to the limitations imposed by performance-based pay (Y. Jiang, 2020).

In-depth research on the moderation or mediation variables of teacher procrastination behavior and its influencing factors can be explored in the future:

1. Research on moderation variables:

Investigate whether factors such as work vitality have different effects on teacher procrastination behavior under different backgrounds, characteristics, or work environments. Possible moderation variables include educational level, work experience, and disciplinary fields. Delving into these differences can help us gain a more comprehensive understanding of the dynamic process of teacher procrastination behavior.

2. Research on mediation variables:

Further research can focus on the mechanism through which factors like work vitality influence teaching performance, i.e., how these factors affect teaching performance through what mediation variables. Possible mediation variables include job satisfaction, teaching motivation, and professional commitment. By revealing these mediating processes, we can gain a deeper understanding of the relationships between influencing factors.

3. Research on the false self-assessment of teaching performance:

In-depth research into the issue of false self-assessment of teaching performance can consider using various assessment methods, such as peer evaluation and student evaluation, to compare how different assessment methods reflect teaching performance. Additionally, it can explore the reasons for false self-assessment, such as self-protection motives and social identity pressure.

4. Relationship between teacher procrastination behavior and organizational change, organizational commitment:

Further exploration can be made into the relationship between teacher procrastination behavior and variables such as organizational change and organizational commitment. This involves studying teachers' roles in organizational change processes, their loyalty to the organization, and their identification with organizational values. A deeper understanding of this relationship can promote the development of educational organizations and teachers' professional development.

In summary, future research can focus on these directions to deepen our understanding of teacher procrastination behavior and its influencing factors. Such research can provide more effective educational management and teacher career development suggestions.

Limitations

Due to constraints such as time, manpower, and financial resources, it was challenging to conduct a comprehensive survey of a larger number of vocational colleges, leading to limitations in the scope of the investigation. Additionally, the study focused on teachers in specific majors at four vocational colleges, and thus, it may not fully represent all the

disciplines listed in the "Directory of Vocational Education Majors" Lastly, the research primarily relied on questionnaire surveys, which might restrict the exploration to the issues included in the questionnaire and potentially overlook other aspects.

Ethics Statements

The studies involving human participants were reviewed and approved by the Krirk University. The participants provided their written informed consent to participate in this study.

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Conflict of interest

The author declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

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Li: Concept and design, statistical analysis, data analysis / interpretation, drafting manuscript. Zhang: Admin, technical or material support, supervision, final approval.

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