

The Role Cognition of Vocational Teachers and Its Relationship with Social Support and Professional Values

Liu Lingfeng, Suhaidah Tahir

Abstract: In the era of "Internet+ Education" and smart technologies, vocational college teachers face numerous challenges, such as blurred role cognition and a lack of professional value. There is also a crisis of teachers being instrumentalized, marginalized, and blurred by internet tools. The role cognition of vocational college teachers is crucial in determining their professional behavior and teaching effectiveness. This study examines Chinese vocational college teachers from the perspective of a Chinese scholar. This study analyzes teachers' role cognition from two dimensions: social support and professional values. Social support encompasses social, administrative, and peer-related aspects. The research reveals a significant positive correlation between the development of social support and teachers' sense of professional values. Social support directly and positively predicts teachers' sense of professional values, and conversely, teachers' sense of professional values also directly and positively predict their role cognition. Social support indirectly predicts teachers' role cognition in a positive manner, with professional values acting as a complete mediator. Consequently, it can be concluded that to leverage the supportive roles of social support, administration, and peers, enhancing teachers' sense of professional values is paramount. This enhancement will ultimately lead to a more positive impact on teachers' cognition.

Keywords: vocational college teacher, role cognition, professional values, social support, structural equation modelling, influencing factors, teacher cognition, intelligent era, teacher development, role crisis.

Highlights

What is already known about this topic:

- Teacher role cognition determines teachers' behavior and strategies, influencing their performance and effectiveness.
- Social support is considered to have an impact on teachers' professional development.
- Vocational college teachers may experience insufficient support from social support systems due to partial social discrimination.

What this paper contributes:

- Professional values have a direct and significant impact on teacher role cognition, playing a mediating role in the triangular relationship studied. The effectiveness of social support on teacher cognition is influenced by the mediating effect of professional values.
- The study investigated the relationship between teacher role cognition, social support, and professional values, providing assistance to decision-makers in implementing teacher development and support programs.

Implications for theory, practice and/or policy:

- Administrative managers should focus on teachers' professional values and respect to enhance their role cognition. Without this, social support will not improve teacher cognition.
- Government departments should strengthen the provision of a sense of value for vocational college teachers in order to enhance teacher role cognition.

Introduction

As artificial intelligence and big data technologies advance, teachers' professional values are being challenged. Their roles are increasingly being seen as instrumentalized, marginalized, and blurred (Liu, 2022). Understanding their roles and missions, and enhancing cognition through practice, has become a crucial issue for teachers. In this context, the role of the social support system becomes very important. This paper aims to explore the relationships among role cognition, self-worth, and social support among vocational teachers in China, under the backdrop of the intelligent era, hoping to provide actionable advice for contemporary educators and administrators.

Education has always been a key factor in a country's development, and teachers play a crucial role in educational progress. The cognitive perception of a teacher's role serves as the foundation for fulfilling their responsibilities. It is commonly believed that teachers' role cognition is a combination of positive cognitive evaluation, emotional experience, willful behavior, and action commitment toward professional traits and social environments (Li & Xie, 2022). Adams (2013) and Berger and Lê Van (2018) have pointed out that teachers' role cognition determines their teaching behaviors and strategies. How teachers perceive themselves plays a decisive role in guiding their practices, professional development, and educational attitudes. Researchers like Van Der Anna et al. (2018) have found that teachers' actions and decisions inevitably align with their own cognition; otherwise, teachers will dynamically adjust their behaviors and strategies. On the other hand, Suarez (2022) highlights that teachers' role cognition impacts teaching performance and effectiveness. Identification with the teacher's professional role enhances their confidence in teaching, decision-making ability, professional identity, teaching efficacy, classroom performance, management techniques, and ultimately influences student performance and the capacity to serve educational policies.

Social support is a guarantee for teachers' personal growth and professional development, and it has a positive impact on their professional cognition. In the context of vocational education in China, corporate support has a positive influence on professional competence (Zhang et al., 2022). At the school level, teachers' professional competence is believed to be influenced by the work environment and school management level. Suarez (2022) and others have found that a cooperative atmosphere plays a crucial role in fostering a positive attitude towards teaching and influencing teachers' understanding of their roles. For example, research has found that cooperation among teachers is a key factor influencing job satisfaction, self-efficacy, as well as professional burnout and work engagement (Van Der Anna et al., 2018). Administrative support is also part of the social support system. Valentina et al. pointed out that the development of teachers' role cognition is influenced by administrative concepts within and outside the education industry.

Vocational education still faces social discrimination to some extent and lacks sufficient social support, which may negatively affect teachers' role cognition and their sense of capability. Therefore, the research has certain value both at the theoretical level and at the practical level. In Thea van Lankveld et al.'s (2016) study, it was also noted that whether teachers are valued by the organization determines the impact of the teaching environment on teachers' roles. Berger and Kim Lê Van (2018) propose that the respect for teachers is reflected in two aspects: being valued by students and being valued by the organization. This is manifested in teaching outcomes.

To explore the relationship among these three factors, this paper establishes three research hypotheses. The research model is illustrated in Figure 1 below.

H1: Social support affects vocational teachers' role cognition.

H2 : Professional Values affects vocational teachers' role cognition.

H3: Social support affects vocational teachers' Professional Values

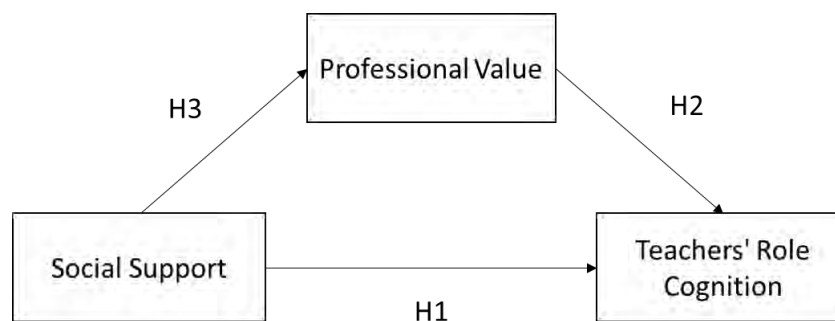


Figure 1. The Framework of the Research

Notes:SS=social support, PV=professional values , TRC=teacher' s role cognition

Methodology

Participants and Procedure

The primary data analysis method for this study is PLS-SEM, conducted using SmartPLS 4.0 software. The suitability of the model was assessed, and PLS-SEM was found to be appropriate, meeting the needs of the study. PLS-SEM evaluates the model holistically, allowing for the simulation of factors and composite constructs, addressing complex structural issues, and requiring a lower sample size.

The paper adopts SEM (Structural Equation Modeling) to establish the structural relationships among teacher role cognition, social support, and professional values. As there were no mature scales available in existing research regarding the factors influencing teachers' role cognition, this study adopted methods such as literature review and expert interviews to compile a self-developed scale based on cited mature scales. Therefore, based on literature review and teacher interviews, this paper made targeted adaptations to these mature scales to align them with the research theme.

The study primarily targets vocational college teachers in China. To gather data more efficiently and scientifically, the survey employs convenience and snowball sampling techniques, aiming to encompass a broad range of teacher types. The questionnaire is distributed via WeChat, China's largest social media platform, with a link and clear identification of the intended respondents to facilitate a more scientific analysis of the impact on teacher role identity. Due to the collection methods and the location of the collector, the majority of responses are from teachers in Southern China. The questionnaire was administered in April 2024 in China, resulting in the collection of 248 questionnaires, of which 219 were valid. The survey excluded questionnaires where the response time was less than 2 seconds per question, resulting in an effective response rate of 88%. The obtained valid sample size significantly meets the requirements for sample size.

Measures

To study the relationships between variables, this paper utilized a survey questionnaire method to gather data and constructed a Structural Equation Model (SEM). Data analysis was conducted using smartpls4.0 software. To ensure consistency in measurement criteria across different established scales, a 5-point Likert scale was adopted for the questionnaire design, with five options ranging from "1=Strongly Disagree" to "5=Strongly Agree."

Teacher Role Cognition Scale

At present, there is no mature scale for measuring teachers' role cognition. However, based on literature review and teacher interviews, in this study, we constructed teachers' professional cognition from five

aspects: teacher behavior, efficacy, willingness to serve society, identity, and professional drive. The Teacher Efficacy Scale used by Li and Xie (2022) covers teacher behavior, prestige, and emotion related to teacher roles. Suarez and McGrath utilized the OECD (2019) and OECD (2020) TALIS scales to measure teacher behavior. The study on Teacher self-efficacy is further divided into Teacher self-efficacy and Self-related efficacy in multicultural classrooms. Berger and Lê Van (2018) employed the French translation of the 12-item short version of the Ohio State Teacher Efficacy Scale (Tschannen-Moran & Woolfolk Hoy, 2001) along with the Teacher Professional Motivation Scale. This paper integrates the above scales with vocational teachers' professional cognition for analysis.

Table 1: The 5-item Teacher Role Cognition Scale for Vocational College Teachers

TRC1: I am deeply concerned about whether my teaching is beneficial for students to participate in social activities.
trc2: I am able to impart knowledge and skills that integrate career development with societal needs to my students.
TRC3: Define a teacher who bases his/her profession on knowledge and skills to support students' social, emotional and moral development
TRC4: Being a teacher is a significant aspect of my identity
TRC5: The teaching profession allows individuals to maximize their interests and professional abilities.

Social Support Scale

Teachers' social support can be analyzed from three levels: social support, school support, and administrative support. Based on the research conducted by Zhixin Zhang et al. (2022) on the social support system, social support is categorized into three types: school support, enterprise support, and family moral support. Similarly, Jianning Li and Yuan Xie (2022) suggested that social support can be perceived in two ways: objective assistance provided by material resources, society, and social groups, and the subjective experience of feeling respected, understood, and supported. According to Xiao (1994)'s Social Support Scale, designs were made for support from family, colleagues, and social groups. Research on the administrative support in universities lacks standardized measurement scales, necessitating tailored design. Based on studies by scholars like Josephine Lau (2022), questionnaires concerning Chinese policy levels have been developed. In the study by Jia Song and Zunwei Yang (2023), open-ended questions like "How do you consider the work and administrative environment around you at the university?" were used to collect data.

A comprehensive scale from the questionnaire has been selected for use. Therefore, building on the previous research regarding social support, our study can focus on the actual sources of support, the relationships between teachers and their colleagues, as well as the support provided by the school and administrative environment.

Table 2: the 5-item Social Support Scale for Vocational College Teachers

SS1: You and some of your colleagues can mutually support and care for each other to what extent?
SS2: The school provides good support for my teaching and research expenses and resources.
SS3: As for you, society holds a supportive and appreciative attitude towards higher vocational education or higher vocational teachers.
SS4: You believe you have more cooperative relationships with other teachers or businesses.
SS5: You believe that the university administration provides sufficient support and resources, granting teachers the freedom to support their teaching and research work.

Professional Values Scale

In many literature sources, the professional values of teachers have been mentioned, but there is no comprehensive scale specifically for vocational teachers. Therefore, this paper summarizes mainstream related scales and organizes a questionnaire from three perspectives: social, self-importance, and recognition by organization and students. Berger and Lê Van (2018) utilized three value judgment systems—self, social, and family—to illustrate the role of teachers. In articles studying teacher roles,

professional values necessary to become a teacher, as examined in prior empirical studies (Berger et al., 2017), were assessed using an adapted version of the FIT-Choice scale.

Table3: the 3-item Professional Values Scale for Vocational College Teachers

PV1: I am satisfied with the social status and social life of vocational teachers.
PV2: I believe that vocational college teachers play an important role in social development and student employment.
PV3: Are your teaching outcomes recognized by students and the organization?

Findings and Discussions

Confirmatory Factor Analysis

Before testing the hypotheses, a two-step approach was used to assess the reliability and validity (convergent and discriminant) of the study constructs. The composite reliability (CR) estimates for all constructs, as shown in Table 4, exceeded the recommended threshold of 0.70, indicating satisfactory reliability (Bagozzi & Yi, 2012). Factor loadings and Average Variance Extracted (AVE) were utilized to assess convergent validity. Additionally, all AVE values exceeded the critical threshold of 0.50, indicating acceptable convergent validity (Fornell & Larcker, 1981). Cronbach's Alpha, with a value greater than 0.7, is also a method to measure the reliability of measurement constructs (Nunnally & Bernstein, 1994). Since a self-compiled scale was used, an A value above 0.6 is also acceptable, and all values of Discriminant Validity have been validated. Additionally, Outer Loading values greater than 0.5 (Chin, 1998; Hulland, 1999) can be considered indicative of good item consistency, and a VIF value below 5 suggests that multicollinearity is not a serious issue (Hair et al., 2017). In summary, the analysis indicates a satisfactory fit for the measurement model. The study provides evidence of acceptable internal reliability for the adopted measurement scales.

Table 4. Cronbach's alpha , Average Variance Extracted (AVE), Composite Reliability and Discriminant Validity index summary

Items	Cronbach's alpha	CR	AVE	social support	professional values	Teacher' role cognition
social support	0.864	0.820	0.606	0.805		
professional values	0.669	0.902	0.649	0.552	0.778	
Teacher' role cognition	0.836	0.884	0.604	0.421	0.737	0.777
parameter evaluation	>0.7	>0.7	>0.5	<0.85	<0.85	<0.85

Structural Equation Modelling

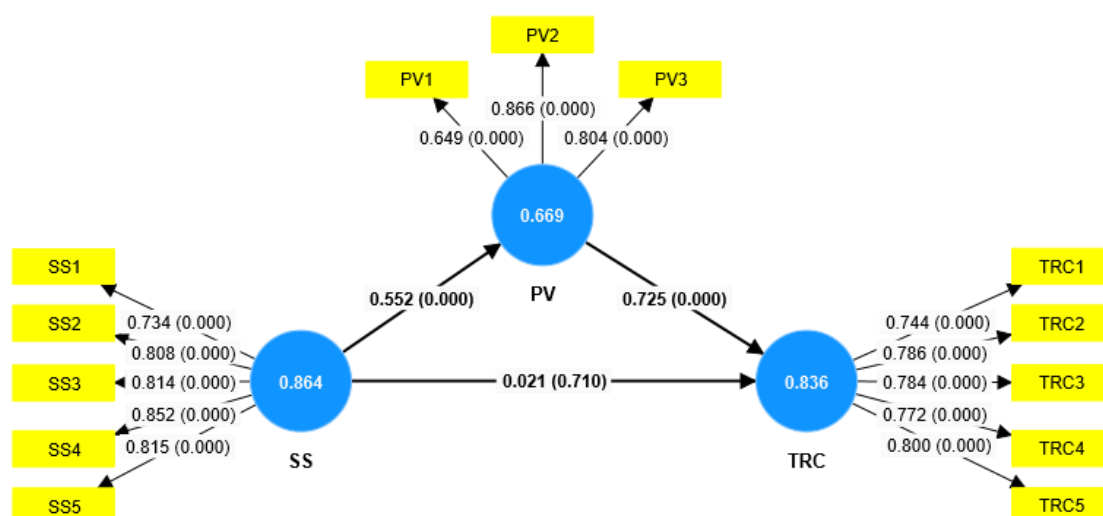


Figure 2: Path Coefficients and P values

Using Structural Equation Modeling (SEM) as the primary analytical tool, this study examines the impact of social support and professional values on teachers' role cognition. The proposed structural model and hypotheses were evaluated by examining the significance of path coefficients and P-values. To determine the significance level of path coefficients, a bootstrap procedure recommended by Joe F Hair Jr, Matthews, Matthews, and Sarstedt (Hair et al., 2017) was employed, using 5000 samples to obtain precise estimates. The results are presented in Table 5 and Figure 2. The results confirm the hypotheses (H1 and H2), showing a significant positive correlation between social support and Professional values ($\beta=0.552$, $P<0.05$), a significant positive correlation between Professional values and teacher's role cognition ($\beta=0.725$, $P<0.05$), but no supported positive correlation between social support and teacher's role cognition ($\beta=0.021$, $P>0.05$). Thus, the H3 hypothesis is rejected. The positive relationship between teacher's role cognition and social support is mediated indirectly through professional values.

Table 5: The Regression Path Coefficient and its Significance

Path	β	Sample mean (M)	Standard deviation (STDEV)	T statistics (O/STDEV)	P values	result
PV -> TRC	0.725	0.731	0.050	14.567	0.000	significant
SS -> PV	0.552	0.557	0.051	10.765	0.000	significant
SS -> TRC	0.021	0.018	0.057	0.372	0.710	not-significant
SS -> PV -> TRC	0.400	0.407	0.049	8.252	0.000	significant

The fitted structural equation model results (Table 5 and Figure2) show standardized path coefficients and β coefficients, determining the effect size of hypothesized paths between two variables. The larger the absolute value of the β coefficient, the stronger the effect; in the case of Professional values and social support values, Professional values contributes more to the impact on teacher's role cognition. H1 and H2 were found to be statistically significant (Table 5 and Figure 2), with social support acting through Professional values on teacher's role cognition and Professional values having strong predictive power for teacher's role cognition. social support also demonstrates strong predictive ability for Professional values.

We can see from the "SS -> PV -> TRC" pathway that the mediating effect of Professional Values is established. Therefore, when considering the impact of Social Support on Teacher's Role Cognition, it is necessary to take into account the teacher's sense of professional value. Without a strong sense of professional value, social support cannot ultimately translate into Teacher's Role Cognition.

Discussion

Social support is an external guarantee for teachers' personal growth and career development, and it has a positive impact on their professional cognition. The study by Li and Xie (2022) shows that there is a strong correlation between social support and teachers' professional identity, suggesting potential mutual interpretations.

This research does not fully support the above view; the data results show that the impact of social support on the role of Chinese vocational teachers is mediated by indirect factors such as professional values. Common scholarly views suggest that stronger social support leads to greater improvements in teachers' professional capabilities and vice versa. However, the study indicates that social support does not show a direct supportive role in teacher role cognition. This may be due to social support potentially positively impacting professional identity, but vocational education in China still faces social discrimination to some extent. Hence, vocational school teachers may receive limited social support, which could negatively affect their professional identity and self-efficacy. On the other hand, obstacles such as insufficient public funding support, prejudice against vocational teachers' status, inadequate corporate cooperation, lack of long-term operational mechanisms, and insufficient depth of school-

enterprise teaching cooperation are barriers to improving teachers' professional capabilities (Zhang et al., 2022).

Differences in conclusions among scholars may be due to regional specificities, and differences in sample sizes across China, but the findings of this study confirm that professional values indeed play a significant role. The mediating role of teachers' professional values has been the focus of multiple studies. Abubakar et al. (2019) explored the relationship between perceived organizational support and teacher outcomes, finding that teachers' perceptions of organizational support affect their professional values, thereby affecting their work performance and satisfaction. Yin, Lee, Zhang, and Jin (2020) conducted a cross-cultural study examining the mediating role of teachers' professional values between teaching efficacy and job satisfaction.

The study found that professional values mediate the relationship between teaching efficacy and job satisfaction and that there are cultural differences. This research translates the complete mediating role played by professional values between social support and role cognition, providing guidance for supporting vocational teachers in China, with a focus on the professional values of vocational teachers.

Conclusion and Suggestions

In the age of intelligence, teachers face greater challenges. China's vocational education teachers experience professional discrimination, and the era of intelligence poses a dual threat to their professional values. Effectively supporting teachers' development has become a significant issue. This paper studies the relationship between social support, professional values, and teachers' role cognition, aiming to provide references for teacher development and management within the context of the intelligent era.

The study employed quantitative analysis to explore the relationship between teacher role cognition and social support and professional values. SmartPLS 4.0 software was used for measurement and structural modeling. Initially, the hypotheses received varying degrees of support (see Table 5 and Figure 2), although the impact of social support on teacher's role cognition was found to be statistically nonsignificant. Professional values were found to have a positive impact on teacher's role cognition, while social support also showed a positive influence on professional values. These findings suggest that social support plays a mediating role between social support and teacher's role cognition. Whether social support for teachers can be effective depends on whether teachers feel respected, which is also an intermediate variable for the effectiveness of general external factors. To effectively influence teacher's role cognition through social support, it is necessary to enhance their professional values first. Otherwise, the supportive role of social support may not effectively contribute to improving teacher's role cognition. Therefore, for teacher administrators, it is important to focus more on the value manifestation of teachers and provide them with a greater sense of respect and recognition in the process of supporting them, in order to effectively fulfill the supportive role.

The conclusions of this study may differ across specific regions and cultures due to the profound impact of regional culture and national socio-political and economic conditions on social support. Future researchers are encouraged to conduct more localized studies. The data from this study, collected via convenience sampling, has regional characteristics; thus, researchers in China could undertake broader sample surveys for more systematic analysis.

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Author's Contributions (CRediT)

Liu Lingfeng: Conceptualization, methodology, formal analysis, data curation, visualization, writing—review and editing; Suhaidah Tahir: supervision, review. All authors have read and agreed to the published version of the manuscript.

Authors' Disclosures

Not applicable

Data Accessibility Statement

The datasets used and analyzed during the current study are available from the corresponding author on reasonable request.

Ethics and Consent

The study involves an analysis or evaluation of public interest or policies, and does not require specific ethical review.

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Competing Interests

The authors have no competing interests to declare.

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