

The Relation of Group Leader's Leadership Style, Teacher's Competencies and Job Performance among China's Higher Vocational Colleges: A Pilot Study

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Abstract

This study embarks on investigation on the relationship between group leader's leadership style, teacher's competencies and job performance in the context of public higher vocational colleges in Zhejiang province of China and also explores on how leadership style of group leaders may affect teacher's job performance under the influence of teacher's competencies. A pilot study was conducted among 150 teachers in public higher vocational colleges in Zhejiang Province which represents the characteristics of the population and provides a reliable basis for the subsequent large-scale study. This study adopted a survey method by using simple random sampling method for the data collection. The reliability and validity of the instrument were examined through content validity, convergent validity, and discriminant validity and structural validity analyses were conducted through factor analysis to test whether the structure of the questionnaire is consistent with theoretical expectations. Reliability based on expert assessment and the data was analyzed using the statistical software SPSS version 22. The result shows that the survey instrument is reliable and valid and is able to help the researcher to explore the association of group leader's leadership style, teacher's competencies and job performance among China's higher vocational colleges.

Keywords: Group Leader's Leadership Style, Teacher's Competencies, Teacher's Job Performance, Higher Vocational Colleges

Introduction

This study embarks on investigation on the relationship between group leader's leadership style, teacher's competencies and job performance in the context of public higher vocational colleges in Zhejiang province of China. Understanding the interplay between leadership approaches and teacher's competencies as well as job performance becomes crucial as this plays a critical role in preparing students for the demands of the rapidly evolving workforce. This study also explores on how leadership style of group leaders may affect teacher's job performance under the influence of teacher's competencies. From a practical

perspective, this study aims to provide higher vocational college administrators the suggestions to prioritize the professional development of teachers as a means to enhance their job performance, thereby contributing to improved student outcomes. Additionally, fostering a culture of open communication should be encouraged, wherein teachers are motivated to provide constructive feedback to their leaders. This feedback can serve as a foundation for refining leadership practices and enhancing overall institutional effectiveness. By conducting a pilot study with 150 teachers in public higher vocational colleges in Zhejiang Province which represents the characteristics of the population, this study provides a reliable basis for the subsequent large-scale study.

As an important part of higher education in China, higher vocational education aims to cultivate technical and skilled talents who can serve the economic and social development, and is characterized by “higher education, vocational, practical and openness”. Teachers, as the instructors of students’ learning, developers of intelligence, and designers of future development, bear the educational, academic and service responsibilities given by the times. Scholars have attached great importance to improving the quality of teaching by strengthening the construction of the teacher team. Nevertheless, teacher’s competencies in China’s higher vocational colleges are still having issues in various aspects such as insufficient focus on practical skills, which are essential for vocational education (Zhang & Xu, 2022). In addition, there is often a disconnect between the academic knowledge imparted by teachers and the practical skills required by industries. Many teachers in higher vocational colleges are lack of direct industry experience, which is crucial for providing relevant and up-to-date training to students. This gap can result in graduates who are not fully prepared for the workforce, thereby affecting their employability (Lv et al., 2022). Most importantly, effective vocational education requires strong collaboration between colleges and industry partners. However, many teachers lack the skills and opportunities to engage in meaningful partnerships with industry, limiting the practical training opportunities available to students (Lv et al., 2022).

China’s higher education institutions and management systems are being challenged by these new competencies. Thus, it is urgently being demanded to improve the quality of education in terms of talent cultivation and technological innovation, which largely depends on the systematic reforms conducted by its higher vocational institutions. In China, after completing nine years of compulsory education in primary school and junior school, students shall take a final regional examination. Those with sufficiently high scores enroll in senior high schools; those who do not meet the entrance requirements for senior high schools attend vocational schools at the secondary level. In 2017, the percentage of enrolment in senior high schools was 51.9% higher than vocational schools (42.1%), at the national level (Wang & Liu, 2018). In contrast, the common practice of students’ placement in China is solely taken from the exam assessment. Psychometric test is not a compulsory assessment. This condition may lead to the consequence that the aligning of one’s personality with a suitable career are not well determined at an early stage, of which it may hinder the recruitment of competent teachers who are supposed to be the driving force behind the development of higher vocational education.

Basically, human resource development promotes competency development by creating chances within the organization for individuals to build their abilities for both their

personal benefit and the benefit of others (Jiang,2020). According to several researchers, expertise is one of the performance criteria (Murniarti et al.,2019; Mohammadi,2021). Liu and Hsuan-Po (2024) investigated the relationship between competency and job performance of college and university teachers and discovered that interpersonal interaction, virtues, knowledge, and skill have statistically significant effects in predicting job performance, and interpersonal interaction, knowledge, and skill have statistically significant effects in predicting task-performance; interpersonal interaction and virtues have statistically significant effects in predicting task-performance; and interpersonal interaction and virtues have statistically significant effects in predicting task-performance. Therefore, as for higher vocational colleges in China, it is necessary to explore the level of teacher's competencies towards job performance, so as to enhance teacher's job performance in ensuring the quality of higher vocational education.

Past researchers also examined the influence of competencies on job performance from a dynamic perspective by introducing variables. Some researchers believe that factors such as leadership style, especially transformational leadership play a regulatory role in competency and job performance, which is regarded as one of the most effective leadership strategies for increasing the effectiveness and efficiency of organizations and improving their performance (Askar Garad et al., 2022). According to Chen et al. (2018), transformational leadership is a source of inspiration for subordinates in pursuing their personal goals on the one hand, and in enhancing the productivity and development of the organization via the integration of individuals working in the company on the other. What's more, transformational leadership can stimulate the potential ability of the members (Quiros,2020), create common goals (Abet&Lehal,2019) and influence members to commit to organizational goals (Çilek,2019). However, the researcher is interested to explore if there are other leadership styles such as authoritative leadership, democratic leadership and even laissez-faire leadership may have an effect on teacher's competencies as well as job performance in higher vocational institutions.

Teacher leaders, according to Kamaruzaman et al. (2020), support learning and teaching for themselves and others, create effective communication among colleagues, and take advantage of chances to generate good change in school environments. Group leaders in China's higher vocational colleges are the teacher leaders mainly contributing to leadership by delineating the school's objectives and standards, executing instructional strategies, proposing techniques and resources to fellow teachers, and encouraging teachers to voice their own perspectives while the dominant leadership style applied by group leaders and the effect on teacher's job performance is unclear.

Literature Review

Leadership Style

Leadership style is described as the ability to facilitate, motivate, and inspire followers via the effective and efficient supply of institutional resources to implement plans and achieve common goals (Northouse, 2018). Malaysian higher education institutions are highly valued for their impact on societal development. Administrator's leadership styles of all levels have an impact on lecturers' job satisfaction and play an important part in the realization of the institution' aims and vision (Pihie et al.,2011). Likewise, two elements of transformational leadership, idealized influence and inspiring motivation, were found to positively correlate

with individual commitment to change in the context of Malaysian higher education (Lo et al., 2010). As China's higher education is facing great challenge driven by globalization, leaders of higher education institutions are required to meet the challenge and aim to explore the effective leadership styles to enhance lecturer's competencies and job performance though little has been written from the perspective of educational leadership among China's higher education institutions (Cheng & Zhu, 2021).

Teacher's Competencies

Currently, some of the representative perspectives on the concept of teacher's competencies were defined by past scholars. Carl O. Olson et al. (2000) identified teacher's competencies as "the professional knowledge, skills, and values that teachers should have to be able to successfully implement teaching". Tigelaar et al. (2004) stated that teacher's competencies in higher education are "a combination of teacher characteristics, including teacher personality, knowledge and skills, as well as teaching skills and personal attitudes in a variety of teaching environments". Lv (2022) made the effort to compile the "Hierarchical Matrix Questionnaire of Competence Indicators for New Engineering Teachers in Colleges and Universities". The questionnaire is based on the constructed competence index system of the assessment on the new engineering teachers in colleges and universities. The relevant experts judged the importance of competence characteristics, assigned reasonable scores to the competence qualities, and developed into a "four-dimensional integration" consisting of knowledge literacy, engineering literacy, teaching literacy and personal literacy for colleges and universities teachers. Thus, the new engineering teacher's competency model is composed with aspects, namely, knowledge quality, engineering quality, teaching quality and personal quality.

Teacher's Job Performance

Up to now, the research on the job performance of teachers in higher vocational colleges is a blank. At present, the connotation and evaluation index system of teacher's job performance in higher vocational colleges are still copying the traditional standards of teacher's evaluation in ordinary colleges and universities. At the same time, there is no unified definition of the job performance of university teachers. Yet, the existing definition can be broadly divided into two schools of view. One view holds that the job performance of university teachers includes not only the work behavior and results, but also the future potential. Future potential mainly refers to the awareness and potential of teachers' self-development (Hu, 2010). This point of view implies the systematic connotation of performance. Another point of view is similar to the comprehensive view of individual performance. It is believed that the job performance of university teachers refers to their behavior and performance that can be observed and evaluated in the process of education and teaching, which is related to individual and school goals and results (Pan et al., 2006). This view reflects the synergy between individual performance and organizational performance.

Association of Leadership Style and Teacher's Job Performance

Werang and Lena's (2014) cross-sectional empirical study sought to investigate the link between leadership, school organizational environment, and teacher job performance in Merauke Regency, Indonesia. Krejcie and Morgan's method was used to identify the valid sample of 118 senior instructors. To determine the association between various research variables, survey questionnaires were employed. Their research found that leadership was

substantially connected with teacher job performance ($r = 0.395$, $p < 0.001$). Furthermore, a strong positive link was discovered between school organizational environment and teacher job performance ($r = 0.242$, $p < 0.001$). They specifically indicated that the prevalence of authoritative leadership in the analyzed schools was also the preferred leadership style. Similarly, Arar and Oplatka (2015) conducted a literature analysis of prior research to determine the practiced leadership styles of Arab educational leaders, and their findings revealed a lack of democratic spirits in the Arab world.

Association of Leadership Style and Teacher's Competencies

After combing the existing research results on teacher's competencies in higher vocational colleges in details, it is found that leadership style is an important factor affecting teacher's competencies. Transformational leaders have a significant impact on the staff of the organization as a guide of the organization's work and coordinator of the organization's behavior. Authoritative leaders usually exercise strict control over their subordinates and demand unconditional obedience, thus making the relationship between authoritative leaders and their subordinates mostly instrumental and difficult to play a role in the process of employees' personal development. The results of the research by Liu and Fan (2022) also showed that democratic leadership has a positive effect on generating proactive enthusiasm in the work of employees and it positively promotes their subjective creativity. Laissez-faire leadership has different effects depending on the employee's situation, but most of the scholars still argue that laissez-faire style plays a negative role in the organization.

Association of Teacher's Competencies and Teacher's Job Performance

Some scholars have carried out the analysis of the correlation between teacher competency and job performance. Wardoyo (2015) used embedded model to measure individual teacher competency, and found that teaching, professional and individual competency have a significant impact on teacher's performance through multiple regression technique method, and social competency has no significant impact on teacher's performance. Based on case interviews it was also found that teachers improve their teaching performance over time and teacher competency increases. Arifin et al. (2014) through a questionnaire study of teachers found that teacher competency and job satisfaction have a positive and significant effect on teacher performance. Rahmatullah (2016) used descriptive and inferential quantitative analysis with 150 teachers in Indonesia and found that there is a correlation between teacher competency and teacher performance, and improving teacher competency can effectively improve teacher job performance, and teachers who have higher performance come from continuous learning and competency improvement.

Methodology

Before conducting a formal, large-scale questionnaire survey, researchers usually need to conduct a small sample pilot study. The purpose of this procedure is to discover the shortcomings of the research design and measurement tools as early as possible and make timely corrections to avoid irreparable errors after the formal survey conducted (Rong, 2010). For this purpose, pre-testing and analyzing the questionnaire is a prerequisite and guarantee for the formal survey. Basically, the data collection process, the sample object and method of a pilot test should be consistent with the formal survey, therefore, the teachers in public higher vocational colleges in Zhejiang Province were selected as the sample object of this survey.

The main scale of this questionnaire consists of three measurement scales with 60 question items, all of which use a four-point Likert scale. The questionnaire was distributed to the respondents through “Questionnaire Star” platform. After screening, a total of 150 valid questionnaires were obtained for the pilot test. The sample distribution of the questionnaires was summarized in Table 1.1.

Table 1.1

Sample Distribution of the Questionnaires

Name	Options	Frequency	Percentage %
The College / Institution	Zhejiang Agricultural Business College	2	1.333
	Jiaxing Vocational and Technical College	2	1.333
	Hangzhou Vocational and Technical College	2	1.333
	Zhejiang Vocational Academy of Art	3	2
	Lishui Vocational and Technical College	3	2
	Ningbo Childhood Education College	4	2.667
	Yiwu Industrial and Commercial College	4	2.667
	Zhejiang Vocational College of Special Education	4	2.667
	Taizhou Vocational College of Science and Technology	5	3.333
	Zhejiang Industry and Trade Vocational College	5	3.333
	Zhejiang Pharmaceutical College	5	3.333
	Ningbo Vocational and Technical College	5	3.333
	Zhejiang College of Construction	5	3.333
	Zhejiang Industry and Trade Vocational College	5	3.333
	Taizhou Vocational and Technical College	6	4
	Zhejiang College of Security Technology	6	4
	Zhejiang International Maritime College	6	4
	Wenzhou Vocational College of Science and Technology	7	4.667
	Zhejiang Institute of communications	7	4.667
	Zhejiang Industry Polytechnic College	7	4.667

	Ningbo City College of Vocational Technology	8	5.333
	Zhejiang Business Technology Institute	8	5.333
	Zhejiang Post and Telecommunication College	8	5.333
	Huzhou Vocational and Technical College	8	5.333
	Zhejiang Business College	9	6
	Zhejiang college of Sports	16	10.667
Gender	Male	81	54
	Female	69	46
Academic acquisition	Doctor degree	28	18.7
	Doctor in progress	31	20.7
	Master's degree	69	46
	Bachelor's degree or others	22	14.7
Professional title	Professor	25	16.67
	Associate professor	27	18
	Lecturer	78	52
	Teaching Assistant	20	13.33
Teaching subject	Natural science	50	33.33
	Social science	48	32
	Humanistic science	52	34.67
Working experience	10 years and less	57	38
	11-20 years	54	36
	20 years or more	39	26

Results

Reliability Test

Variable reliability analysis is used to test the degree of consistency of all measurement items for each concept. Streiner (2003) pointed out that if a questionnaire contains several different variables, it is inappropriate to calculate the degree of internal consistency among them; however, if each variable is measured with several measurement items, then it is possible for each variable to calculate its degree of internal consistency. Therefore, the Cronbach's alpha reliability coefficient is used to test the reliability of the variables. It is generally accepted that a Cronbach's alpha value of more than 0.7 can be considered as fair reliability and more than 0.8 can be considered as good reliability. By calculating the Cronbach's alpha coefficient, the researcher found that the reliability coefficients of the questionnaires are all above 0.7, which were presented in Table 1.2, indicating that the questionnaires have good internal consistency, and have high reliability.

Table 1.2

Reliability Test Results of the Questionnaire

Constructs	Cronbach's α
Teacher's Competency	.859
Teacher's Job Performance	.757
Group Leader's Leadership Style	.818
OVERALL	.833

Validity Test

Questionnaire validity is generally analyzed in terms of content validity, convergent validity, and discriminant validity. Content validity is usually judged by the number of factors in the validated factor analysis and the factor loading value of each entry in the variable, generally, the factor loading value is greater than 0.5 and no cross loading can be considered as good structural validity. Convergent validity can be determined by calculating the AVE and CR values, with an AVE value greater than 0.5 and a CR value greater than 0.6 indicating high convergent validity of the variables. Discriminant validity is determined by comparing the square root of AVE with the magnitude of the correlation coefficient between the variable and other variables.

Validity analysis focuses on assessing the accuracy of what the questionnaire measures, i.e. whether the questionnaire actually measures the constructs that the researcher wants to understand. Structural validity analyses are usually conducted through factor analysis to test whether the structure of the questionnaire is consistent with theoretical expectations. Prior to factor analysis, the KMO test and the Bartlett's Spherical Test were used to determine whether the variables of interest in the questionnaire qualified for factor analysis. Generally, when the KMO is greater than 0.7, it can be considered to meet the conditions of factor analysis. As shown in Table 1.3, the KMO value of the questionnaire is 0.711 and the significance level of the Bartlett's ball test is 0.000, which indicates that the questionnaire data is suitable for factor analysis.

Table 1.3

Test Results for KMO and Bartlett

KMO		0.711
Bartlett Sphericity Test	Approximate chi-square	9307.064
	df	3570.000
	p-value	0.000

Next, the researcher used principal component analysis to extract common factors from the raw indicators. It is generally accepted that if the cumulative variance explained ratio of all common factors with eigenvalues greater than 1 is greater than 60%, the questionnaire data can be considered to have good structural validity. According to the pre-survey results, factor analysis extracted a total of 15 factors with eigenroot values greater than 1, and the cumulative variance explained ratio after rotation is 72.750%.

Finally, orthogonal rotation was performed using the maximum variance rotated axis method to obtain a rotated component matrix containing the factor loading values for each item, thus identifying and naming the common factors. The optimal situation is if an item in

the rotated component matrix has a factor loading greater than 0.5 on the corresponding common factor and no item has two or more common factors with a loading greater than 0.4. According to the results of the pilot study, all the research items correspond to common degree values higher than 0.4 and the absolute value of the corresponding factor loading coefficients is greater than 0.5, which implies that there is a strong correlation between the research items and the factors, and the factors can effectively extract information. Therefore, the scale has good structural validity.

Discussion and Conclusion

This study focuses on higher vocational education in Zhejiang Province of China, a region at the forefront of China's development, to examine the prevailing leadership styles. Similarly, this study explores the conceptualization and evolution of competencies, as well as the current state of research regarding the dimensions of teacher competencies identified in the literature, which can be attributed, to some extent, to the professional training programs mandated by China's Ministry of Education. Notably, teachers in higher vocational colleges are required to be "double-qualified", a standard that has become a significant driving force for professional development within these institutions. Moreover, this study provides a comprehensive analysis of the performance characteristics of higher vocational college faculty and examines the strength of the relationships between various leadership styles and individual job performance with teacher's competencies as a mediating variable.

Additionally, as mention earlier, this paper is aimed to analyze the validity and reliability of the items measuring the three constructs including group leader's leadership style, teacher's competencies and teacher's job performance before conducting the actual survey. This will guarantee the accuracy and appropriateness of the questions contained in the instrument. Additionally, the results of the pilot test indicate that the Cronbach's alpha values for all constructs are above 0.70. Thus, it can be concluded that all the constructs used in this study are reliable and no need to remove any item.

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