



**PROFESSIONAL IDENTITY OF THE TEACHER IN HIGHER
VOCATIONAL EDUCATION COLLEGES
IN FUJIAN PROVINCE, CHINA**

**BY
DONG LIN**

**A DISSERTATION SUBMITTED IN PARTIAL FULFILLMENT
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Abstract

This study explored the construct validity of the six-factors of Teachers' Professional Identity of teachers in vocational colleges in Fujian. A mixed-method approach was employed. First, a survey research design with the distributing of questionnaires to 500 samples was used with the descriptive analysis of mean, standard deviation, frequency, and percentage, followed by the inferential analysis of Confirmatory Factor Analysis (CFA). Next, a semi-structure interviews with 10 of the vocational colleges' administrators were done to gain the perspectives in enhancing teachers' Professional Identity in Vocational Education in Fujian Provinces.

The results indicated that Teachers' Self-Perception and Teaching Competence were the most significant factors on Professional Identity, while the Job Satisfaction was highly related to salary, promotion opportunities. It is also suggested that the policymakers and educators should pay attention to Teachers' Sense of Belonging as another factor crucial for teachers as seen by administrators, thus, it is recommended that the six-factors scale of Professional Identity, developed in this study, could be used to examine Teachers' Sense of Belonging, in longitudinal research, in order to understand its evolvement in higher vocational education, both in Fujian and other Provinces.

(Total 251 page)

Keywords: Professional Identity, Teachers, Higher Vocational Education Colleges, Fujian Province, China

Student's Signature Dissertation Advisor's Signature

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Chapter 1

Introduction

1.1. Background and Significance of the Study

According to the Statistical Bulletin on National Education Development in July 2023, 3,013 institutions of higher learning have been established in China, including 1,489 higher vocational schools and about 619,500 teachers. It is important to invest in great efforts to produce excellent teachers (Antera et al., 2022), because professional growth is critical to student achievement (Bardach & Klassen, 2020). In a modern vocational education system, their role is not only to impart curricular outcomes but also to provide students with the tools necessary to achieve social and academic success in and out of the classroom (Franklin & Harrington, 2019). While vocational education helps students acquire technical knowledge and specific skills (Jabarullah & Hussain 2019; Anane, 2013; Syauqi, Munadi, & Triyono, 2020; Beer & Mulder, 2020), it is critical to have teachers who have credible professional identity with ability to link between future labor and education (Calero Lopez & Rodriguez-Lopez, 2020; Gessler, Bohlinger, & Zlatkin-Troischanskaia, 2021; Lee & Pilz, 2023).

In China, on January 24, 2019, The State Council of China officially released the National Implementation Plan for Vocational Education Reform (Xue, Li, & Li, 2021). The professional identity of vocational school teacher is considered as an important factor in their professional growth (Berger & Le, 2019; Fitzgerald, 2020).

While Professional identity is referred to teachers' recognition and understanding of themselves as educational professionals with their self-perceptions of their roles, with the belonging in a specific professional community with the beliefs and skills related to professional competence and efficacy that shown in performance

(Sancar, Atal, & Deryakulu, 2021; Maree, 2022), it is formed through formal education, practical experience, and interaction with peers and mentors, reflecting the internalization of professional roles, responsibilities, and ethical standards (Weinberg, 2019; Cruess, Cruess, & Steinert, 2019).

It is believed that professional identity influences the way in which each individual teacher approached his or her work, engage with colleagues and students, and adhere to professional standards (Cobb, 1976) as to be able to adapt and integrate to the society (Chen & Lu, 2020; Jarvis-Selinger, ManNeil Costello, Lee, & Holmes, 2019). Thus, professional identity is viewed as a strong impact on their role, cognition, and work performance (Steinert & Irby, 2019). As the concept of teacher's self and role is formed and reformed over time and represents various influences on their career interests, beliefs, values and goals (Noonan, Lyhty, & Moate, 2016). It plays a key role in determining happiness, especially through interactions with others (Kyprianides, Easterbrook, & Brown, 2019).

Accordingly, this makes professional identity important for the growth and development of career success (Suarez & McGreas, 2022). While professional identity reflects the positive perception, experience, and behavioral tendencies of the profession, it is a strong driving force for the development of professional competence (Cruess & Steinert, 2019). Although professional identity is a multidimensional concept, yet, there is no consensus on its core components (Carrinus, 2012; Richardson & Watt, 2018). However, many scholars agreed that to be a teacher, one must have a strong professional identity (Van der Waal, 2019) in order to cope with daily stress and conflict (Richardson & Watt, 2018).

Hence, improving teachers' professional identity is considered critical to retaining high-quality of educators with also a high-quality of teaching workforce (Steinert, 2019). It was revealed that in China, many teachers of higher vocational college lack effective teaching skills and practical experience, which leads to professional identity crisis (Ye & Zhao, 2019). Therefore, professional identity is

considered as an important factor of how teachers portray their roles and behaviors in their teaching career (Liu, Li, & Zhang, 2021).

The formation of teacher professional identity and professional learning is different but interrelated (Ahmad, Shah, Latada, & Sulaiman, 2019; Ngan, Hercz, & Van Thong, 2021). Developing professional identity also includes interpretation of learning experiences in terms of current or expected teacher status. This reflective process transforms the learning experience into a "life experience" (Bukor, 2011; Noonan, 2019). Meaningfully shape, and reshape the professional identity of teachers, thereby influencing their self-image as educators (Beijaard et al., 2000; Vloet & Van Swet, 2014; Noonan, 2019; Rom & Eyal, 2019). The professional identity of teachers is their role, perceptions, teaching competence, self-efficacy, job satisfactions, and interactions with other educators or the whole groups (Canrinus, Helms-Lorenz, Beijaard, Buitink, & Hofman, 2012; Karaolis et al., 2019; Ortan, Simut, & Simut, 2021). The professional status of active teachers will have an impact on their work, thus improving their teaching quality and thus promoting their development. (Niemi, Nevgi, & Aksit, 2016; Molla & Nolan, 2020).

The factors of professional identity of teachers are composed of: 1) Teachers' Perceptions; 2) Teachers' Roles; 3) Teachers' Performance; 4) Teachers' Competence; 5) Teacher' self-efficacy; and 6) Teachers' Job Satisfactions (Pennington & Richards 2016), respectively.

Teachers' perception is referred to how a teacher views his or her teaching context which includes the teaching ability of consciousness, the teaching style and methods of teaching ability, as well as the role of understanding their people and their influence in teaching (Bukor, 2015; Wang & Chu, 2023). While teachers' self-perception is believed to influence teaching behavior, teaching efficiency, and professional development, it is also involved with the awareness of one' role, teaching ability and style.

The role of teachers is defined as being good teachers, do good teachers and do incentives in the teaching field (Datnow, 2020) with the significance of not only in imparting their knowledge to students, but also to cultivate their personality and arouse their interest and support. This highlights the various roles of teachers in the teaching process of being instructors, practitioners, learners, mentors, motivators, evaluators, managers, coaches, trainers, and researchers with the multiple responsibilities in developing students' individuality, stimulating interest and support (Beijaard et al., 2023; Fried & Fried, 2015; Kurniati, Nurdin, & Nurasmawati, 2020).

Teacher's performance is referred to teaching and student management ability, behavior and action, in implementing methods that improve teaching and learning engagement with good environment of working with others (Blazar & Kraft, 2017). This characterizes behaviors, skills, abilities of teachers in fulfilling and achieving their duty with the commitment in their career.

Teaching competence refers to the teaching ability or teaching quality and skills that demonstrated through the teaching process (Blömeke, Jentsch, Ross, & Kaiser, 2022; Qobilovna, 2023). It includes their responsibilities, pedagogical, social, and self-competence (Baumert & Kunter, 2013; Warren et al., 2021) with effective performance and teaching practices (Omar, Zahar, & Rashid, 2020; Qobilovna, 2023). Good teaching ability means that teachers are able to effectively impart knowledge, stimulate students 'interest in learning, manage the classroom, and provide effective learning support, thus promoting students' learning and development (Warren, 2021).

Teachers' self-efficacy means teachers' confidence in the ability of being successful teachers (Bandura, 1997; Handrianto, Rasool, Rahman, Mustain, & Ilhami, 2021). Usually, they hold positive characteristics such as being adaptive, having good relationships with others, opening to new things and challenges, having good expectations both in their work and life (Bandura, 1997; Buonomo, 2020; Fairman, Smith, Pullen, & Harris, 2022). This also emphasizes the teachers' confidence in their

ability to carry out their own educational activities effectively (Cherry, 2020; Clark & Newberry, 2018).

Finally, teachers' job satisfaction with the teaching quality is the satisfaction of job environment (Awaje & Amaha, 2022). This can be reflected from their overall satisfaction degree to the working environment, career development, and management support (Tentama, 2021). Meaningful accomplishment with good experiences and expectations as being teachers with monetary and/or nonmonetary rewards can create job satisfaction as a teacher (Heinla & Kuurme, 2024; Xu, 2023)

Orakc, Yüregilli Goksu, and Karagoz (2023) posed that the more teachers' perceive themselves as related to their ability and performance, the more they feel positive of themselves in professional development (Ellis, Alonzo, & Ruan, 2020; Donohoo & Katz, 2017). The more the teachers can implement their teaching knowledge and skills effectively, the more the sense of professional mission and identity will become strong and can rely on (Darling-Hammond, 2021). Effective teaching can help teachers gain more comprehensive understanding of how to become successful in creating motivation in the classroom as to provide support in every area of students needs (Stronge, 2018) Overall, teachers with high level of professional identity are considered effective in their teaching career (Tailab & Marsh, 2020) with high levels of the teachers' perception, competence, performance (Gracia et al., 2021) with. The self-efficacy of teachers refers to the evaluation of the effective organization and implementation of their own behavior (Bandura, 2006).

As can be seen that teachers' professional identity is prominent to teachers' career, however, there is still a lack of comprehensive and systematic research on the construction and development of teachers' professional identity, especially in Fujian Province, China. Therefore, this study explored and validated the six-factor-constructs of teachers' professional identity 1) Teachers' Perceptions; 2) Teachers' Roles; 3) Teachers' Performance; 4) Teachers' Competence; 5) Teacher' Self-Efficacy; and 6) Teachers' Job Satisfactions, in higher vocational schools in Fujian Province. Moreover,

the guidelines of how to improve professional identity from the vocational schools in Fujian were obtained.

Based on this, exploratory factor analysis (EFA) was used to explore and identify the initial factors affecting the professional identity of vocational school teachers in Fujian Province, and confirmatory factor analysis (CFA) was employed to test these factors by using the structured test method for the interaction between factors. Therefore, this study first proposed the research framework and then verified the feasibility of its construction by confirmatory factor analysis method.

1.2 Research Objectives

The objectives of the research, thus, were:

1.2.1 To evaluate the construct validity using confirmatory factor analysis (CFA), and internal consistency of Professional Identity of Teachers in vocational schools in Fujian, China

1.2.2 To confirm the six-factors model of Professional Identity of Teachers in vocational schools in Fujian as to ensure the accuracy and reliability of the model.

1.2.3 To obtain the perspectives of the vocational schools' administrators as to enhance professional identity of teachers in vocational colleges in Fujian.

1.3 Research Questions

1.3.1 What are the six-factor structure using confirmatory factor analysis (CFA), and internal consistency of Professional Identity of Teachers in vocational schools in Fujian, China

1.3.2 What are the confirmation of six-factor model of teacher professional identity in higher vocational colleges in Fujian Province; and

1.3.3 What are perspectives of the vocational schools' administrators as to enhance professional identity of teachers in vocational colleges in Fujian.

1.4. The Scope of the Study

1.4.1 Conceptual Framework:

This study explained the professional identity of teachers in higher vocational colleges in Fujian Province, China.

Variables: Factors of professional identity –

Teacher's self-perception

Teachers' Roles

Teachers' Performance

Teaching competence

Teachers' Self-efficacy, and

Teachers' Job satisfaction

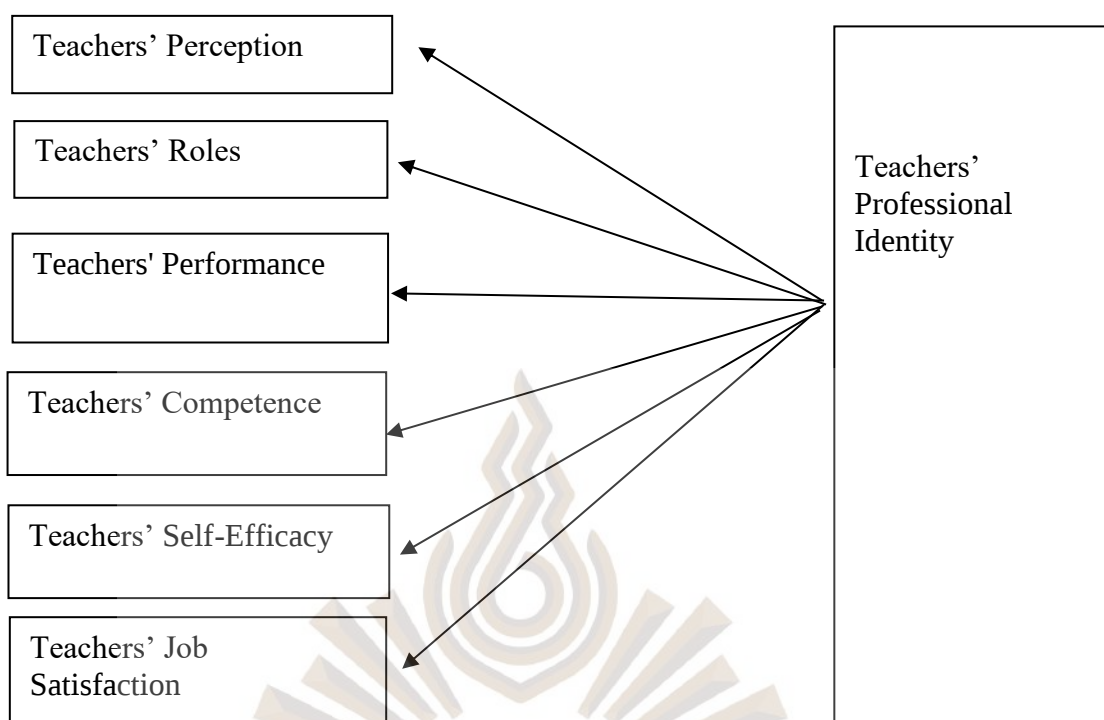


Figure 1.1 Conceptual Framework of Teachers' professional Identity

A mixed methods approach was employed.

Quantitative:

1.4.2 Population and Sampling

Population

The research locations are in Fujian Province, with a population of 22,319 teachers across 50 vocational colleges in the province. This group consists of instructors from various academic fields and backgrounds.

Sampling

The study targets full-time teachers in higher vocational colleges in Fujian Province. A stratified sampling method will be used to select the sample from the total population of 22,319 vocational college teachers. First, 10 out of 50 higher vocational colleges will be randomly selected. Then, 50 full-time teachers will be randomly sampled from each of these 10 colleges. According to the Krejcie and Morgan (1970) formula, the sample size is determined to be 500 respondents.

1.4.3 Measures

Questionnaire

To design a comprehensive questionnaire for this study, a thorough review of the literature was conducted to identify key factors and variables relevant to the research topic. Based on this review, the most significant keywords and concepts related to the variables of interest were extracted. These keywords formed the foundation for the questionnaire items.

Using the identified keywords, a set of questions was formulated to measure each variable comprehensively. The questions were designed to capture the essence of the variables and ensure that they accurately reflect the constructs being studied.

1.4.4 Data Analysis

The research performs to test the validity of the construct of the six-factors of teachers' professional identity at the vocational colleges in Fujian Province. Exploratory Factor Analysis (EFA) and Confirmatory Factor Analysis (CFA) were employed to test the six-factor model. The hypothesized six-factor construct to examine construct validity.

Qualitative:

1.4.5 Interviewees

The 7 interviewees who were administrators were interviewed to confirm the six-factors of professional identity of the vocational colleges in Fujian Province. The criteria used to verify those interviewees were that all of them must be head instructors who have been working in the vocational colleges in Fujian at least 5 years.

1.4.6 Measures

The interview items gained from the questionnaire results were used to confirm the six-factors of professional identity of the vocational colleges in Fujian Province.

1.4.7 Data analysis

Content analysis with thematic point of views was used to analyze the interview.

1.5 Technical Terms

Vocational Education: In China, vocational education refers to educational activities aimed at equipping learners with necessary professional knowledge, vocational ethics, scientific culture, and technical skills required for engaging in a specific occupation or career development. Typically, vocational education is relatively independent but equally important compared to general education. They serve as essential pathways for nurturing diverse talents, transmitting technical skills, and fostering employment and entrepreneurship.

On April 20, 2018, the People's Republic of China promulgated the revised Vocational Education Law. In the new iteration of the Vocational Education Law, vocational education is defined as "Education aimed at cultivating high-quality technical and skilled talents, equipping learners with vocational ethics, scientific culture, professional knowledge, technical skills, and other comprehensive qualities and abilities required for engaging in a specific occupation or achieving career development."

Higher Vocational School: In list 15 of the "Vocational Education Law" released by the Ministry of Education in 2022, vocational education school is divided into secondary vocational education school and higher vocational education school. Among them, higher vocational school education includes specialized higher vocational schools and undergraduate higher vocational schools. The scope of higher vocational institutions in this study is specialized higher vocational school.

Vocational Education Teacher: A vocational education school teacher refers to an educator who is engaged in teaching activities within a vocational education school. They are responsible for teaching students the skills and knowledge relevant to specific professions or industries, helping students prepare for employment and succeed in their chosen career fields. Vocational education school teachers typically need to have specialized knowledge and skills, as well as teaching experience and an educational background, in order to effectively impart the required vocational skills and knowledge. Their responsibilities may include curriculum development, instructional planning, student assessment, and guiding students in practical operations. Vocational education school teachers play a crucial role in cultivating students' professional qualities and employability.

Professional Identity : Teacher professional identity refers to teachers' recognition and understanding of themselves as educational professionals. It encompasses teachers' perceptions of their roles, responsibilities, values, job

satisfaction, and self-efficacy. Teacher professional identity not only includes teachers' personal perceptions and evaluations of themselves but also their attitudes toward their work, their values within the field of education, and their interactions with other educators and society at large. The formation of teacher professional identity is influenced by various factors, including personal experiences, educational background, work environment, and societal culture. A positive teacher professional identity helps teachers engage more effectively in their work, improve teaching quality, and contribute to the development of the educational profession. The factors that comprise teacher professional identity include: 1) Teachers' Perception; 2) Teacher Roles; 3) Teachers' Performance; 4) Teachers' Competence; 5) Teachers' self-efficacy; and 6) Teachers' job satisfaction.

Teachers' Perceptions: Teachers' perception refers to their views and understanding of themselves, particularly in the context of teaching, at the present time. It includes their awareness of their teaching abilities, teaching style, and teaching methods, as well as their understanding of the roles they play and the impact they have in teaching. Teachers' self-perception can influence their teaching behavior, teaching effectiveness, and professional development.

Teachers' Roles: Teachers' role encompasses being an instructor, guide, motivator, evaluator, and manager in education. It extends beyond imparting knowledge to shaping students' character, stimulating their interests, and providing support. The dynamic nature of the professional role evolves with experience and is crucial for effective education. With the increasing use of digital technology, teachers' roles have expanded, especially in online and blended learning environments.

Teachers' Performance: Teacher performance generally refers to the abilities, behaviors, and actions demonstrated by teachers in teaching and student management. This includes teaching skills, instructional methods, classroom management abilities, ability to motivate students, teaching outcomes, and student learning achievements.

The quality of teacher performance directly impacts student learning outcomes and the overall teaching quality of schools.

Teachers' Competence: Competence in Teaching refers to the teaching ability or teaching quality of teachers, which is the ability and level demonstrated by teachers in the teaching process. This includes the knowledge, skills, attitudes, and values that teachers possess, as well as their performance and effects in teaching practice. Having good teaching competence means that teachers can effectively impart knowledge, stimulate students' interest in learning, manage the classroom, and provide effective learning support, thereby promoting students' learning and development.

Teachers' Self-Efficacy: Teachers' self-efficacy refers to teachers' evaluation of their ability and confidence to produce the desired outcomes in their teaching. Specifically, it encompasses teachers' belief in their capacity to effectively organize instructional activities, address teaching challenges, motivate students, and enhance student learning outcomes. The level of a teacher's self-efficacy directly influences their teaching behavior, attitudes, and the overall effectiveness of their teaching.

Teachers' Self-Efficacy: Teachers' job satisfaction refers to the extent to which teachers feel content and fulfilled with their professional roles and work environment. It encompasses a range of factors including job conditions, the support received from colleagues and administration, remuneration, work-life balance, professional growth opportunities, and overall working conditions. Teachers' job satisfaction is a critical determinant of job performance, retention rates, and overall well-being. High levels of job satisfaction are associated with positive teaching behaviors, effective classroom management, and enhanced student outcomes. Conversely, low job satisfaction can lead to increased turnover, diminished teaching effectiveness, and reduced student achievement.

Chapter 2

Literature Review

This chapter aimed to provide a thorough review of the literature, focusing on key terms. Its goal is to clarify the issue of professional identity among teachers in higher vocational schools in Fujian Province, China, while also exploring the relationship between teacher professional identity and Teachers' Perceptions, teacher's roles, Teachers' Performance, competence in teaching, Teachers' self-efficacy, teacher job satisfaction. The objective was to identify gaps in existing research and propose measures to enhance the professional identity of teachers in higher vocational schools in China.

1) Selection of relevant literature: The first involved selecting literature related to vocational education, teacher professional identity, Teachers' Perceptions, Teacher's roles, Teachers' Performance, Competence in teaching. This literature included articles in scholarly journal, government reports, and policy documents. Selections were based on relevance to the research objectives and questions. 2) Literature Analysis: The next step involved collecting and analyzing data from the selected literature. This included reading and reviewing the literature, and recording key findings and insights. 3) Synthesizing the findings: The third step was synthesizing the results of the data analysis, outlining the current state of professional identity among teachers in higher vocational schools in Fujian Province, China, identifying gaps in the research, and determining questionnaire's items.

2.1 Vocational Education

2.1.1 Definitions of Vocational Education

Vocational Education became popular worldwide after the United States passed the Vocational Education Act in 1917 (Grineski, 2021). It was defined as training for crafts, industry, agriculture, commerce, home economics, vocational technology, and other jobs that didn't require a college degree. Vocational education is defined as a form of education focused on mastering skills necessary for employment (Anderson & Rushbrook, 2020).

Vocational education as a complex, multidimensional concept involving the development of skills necessary for specific trades, occupations, or professions. It is tailored to prepare individuals for the world of work by equipping them with the skills required to perform various tasks effectively and efficiently (Li & Pilz, 2023).

A recent definition of vocational education and training (VET) by the European Commission for the European Year of Skills 2023 describes VET as education that prepares people for specific jobs or the broader job market by giving them the knowledge, skills, and competencies they need (European Commission, 2023). VET focuses on practical skills directly applicable in the workplace (Billett, 2020).

Vocational education is also defined broadly and narrowly. Some argue that VET should include a wide range of knowledge and skills useful for both work and life. Others believe that VET should focus narrowly on specific skills and competences needed for employment. Vocational education and training prepare people for work and can take place in various settings such as educational institutions and workplace learning apprenticeships (Rintala & Nokelainen, 2020).

Other researchers define vocational education and training (VET) as education which aims to equip people with knowledge, know-how, skills, and or competencies required in particular occupations or more broadly on the labor market (Kleinert & Jacob, 2019). VET focuses on practical learning and the application of skills in the workplace (Billett, 2020). The philosophies behind vocational education have been influenced by scholars like John Dewey, who emphasized the importance of practical skills in education to produce productive citizens (Mensah, 2023).

Unlike the perspective that curriculum content directly impacts knowledge (known as "teacher psychology"), this economically oriented educational goal aims to enhance students' mental abilities for various purposes through learning new materials. Edward Thorndike, an early 20th-century American psychologist, emphasized the separation of vocational skills from academic subjects in education and introduced standardized tests for evaluating students and schools (Mbeng, 2024). The need for practical skills in vocational education is becoming increasingly important and aligns with societal development trends.

Chinese President Xi Jinping said: "Vocational education has a broad future and great potential. It is essential to enable every individual to create their own value in their positions. "In recent years, China has increasingly emphasized the development of vocational education. According to Article 2 of the revised "Vocational Education Law of the People's Republic of China" in 2022, Vocational education in China refers to the education implemented to cultivate high-quality technical and skilled talents, enabling learners to possess the comprehensive vocational qualities and action capabilities required for engaging in a certain profession or achieving career development, including vocational ethics, scientific culture, professional knowledge, and technical skills.

This encompasses both vocational school education and vocational training. Moreover, vocational education is integrated with general education, with effective connectivity across different levels of vocational education, serving a modern

vocational education system that supports lifelong learning for all citizens. Vocational school education is divided into secondary vocational school education and higher vocational school education (National People's Congress of the People's Republic of China, 2022). The new Vocational Education Law defines the training objectives of vocational education. The new Vocational Education Law explicitly stipulates that the training objective of "vocational education" is to cultivate "high-quality technical and skilled talents" (Zhanshu, 2023).

2.1.2 The Importance of Vocational Education

Recent studies highlight the importance of vocational education today. The OECD (2023) report emphasizes that vocational education is vital as an alternative to academic paths, meeting job market demands and boosting employability. Additionally, a joint study by the World Bank, the International Labor Organization, and UNESCO stresses the need for technical and vocational education to adapt to global challenges, especially in low- and middle-income countries, to address skills shortages and aid economic recovery post-COVID-19 (Wei, 2023; Syauqi et al., 2020).

Vocational education plays a crucial role in preparing young people for the challenges of globalization, including technological advancements and economic, social, and cultural changes (McGrath, 2020). It promotes personal growth, self-esteem, and job prospects, contributing to overall societal development (Hamzah, & Musa, 2021). VET focuses on improving work skills, generic skills, and virtues such as citizenship and ethics, different from the broader goals of general education (Chalapati, 2020). Curricula in vocational schools are tailored to meet specific employer demands, with vocational training being essential for acquiring advanced skills crucial for national development after basic education (Köpsén, 2020).

2.1.3 Vocational Education in China

China has been placing increasing emphasis on the development and reform of vocational education in recent years. The government's latest push aims to promote the high-quality development of vocational education, which is seen as crucial for shoring up the manufacturing base and meeting the surging demand for industry upgrading. A set of policy measures has been outlined to support vocational schools and improve the quality of skill-focused education.

The goal is to establish a modern vocational education system nationwide by 2025, with vocational schools expected to see a significant improvement in schooling conditions, attractiveness to students, and quality of training offered. By 2035, China's vocational education system is expected to be the most competitive globally, with supply matching the demand from social and economic growth (Dobbo, 2018; Dai, Xu, Zhu, 2022). China has indeed implemented a series of policies and documents to ensure the high-quality development of vocational education (Fan, 2020).

Table.2.1 Vocational Education Policies from the Past Five Years (2018-2023)

Date	Policy Title	Issuing Department
2018-02-05	Notice on the Issuance of the "Measures for Promoting School-Enterprise Cooperation in Vocational Schools"	Ministry of Education and five other departments
2018-04-23	Notice on the Issuance of the "Regulations on Vocational Guidance Work in Secondary Vocational Schools"	Ministry of Education

Table.2.1 Vocational Education Policies from the Past Five Years (continued)

Date	Policy Title	Issuing Department
2018-10-12	Opinions on the Comprehensive Implementation of the New Apprenticeship System in Enterprises	Ministry of Human Resources and Social Security, Ministry of Finance
2019-02-13	Notice on the Issuance of the National Vocational Education Reform Implementation Plan	State Council
2019-02-23	Notice on the Issuance of the "Implementation Plan for Accelerating the Modernization of Education (2018-2022)"	General Office of the CPC Central Committee, General Office of the State Council
2019-04-02	Notice on the Issuance of the "Measures for the Implementation of Incentives for Provinces (Regions, Cities) with Significant Achievements in Vocational Education Reform"	Ministry of Education
2019-05-13	Notice on the Issuance of the "Special Work Plan for the Expansion of Enrollment in Higher Vocational Schools"	Ministry of Education and five other departments
2019-05-15	Notice on the Comprehensive Advancement of the Modern Apprenticeship System	General Office of the Ministry of Education
2019-05-24	Notice on the Issuance of the Vocational Skills Improvement Action Plan (2019-2021)	General Office of the State Council
2019-06-11	Guiding Opinions on the Formulation and Implementation of Professional Talent Training Programs in Vocational Schools	Ministry of Education
2019-10-23	Notice on the Issuance of the "Action Plan for Comprehensive Vocational Training and Promotion of Employment and Entrepreneurship in Vocational Schools"	General Office of the Ministry of Education and thirteen other departments

Table.2.1 Vocational Education Policies from the Past Five Years (continued)

Date	Policy Title	Issuing Department
2019-12-25	Guiding Opinions on the Teaching Management Work of Higher Vocational Education after Expansion	General Office of the Ministry of Education
2020-09-23	Notice on the Issuance of the "Action Plan for Improving the Quality of Vocational Education (2020-2023)"	Ministry of Education and eight other departments
2020-12-23	Notice on the Issuance of the "Interim Measures for Performance Management of the Plan for Building High-Level Vocational Schools and Specialties with Chinese Characteristics"	Ministry of Education, Ministry of Finance
2021-10-12	Opinions on Promoting the High-Quality Development of Modern Vocational Education	General Office of the CPC Central Committee, General Office of the State Council
2021-11-09	Notice on the Issuance of the "Funding Management Measures for the Modern Vocational Education Quality Improvement Plan"	Ministry of Education of The People's Republic of China
2022-01-17	Notice on the Issuance of the "Regulations on Internship Management for Students in Vocational Schools"	Ministry of Education and seven other departments
2022-10-07	Opinions on Strengthening the Construction of the High-Skill Talent Team in the New Era	General Office of the CPC Central Committee, General Office of the State Council

Table.2.1 Vocational Education Policies from the Past Five Years (continued)

Date	Policy Title	Issuing Department
2022-11-04	Notice on the Implementation of the Special Training Plan for On-Site Engineers in Vocational Education	General Office of the Ministry of Education and four other departments
2022-11-16	Notice on the Issuance of the "Implementation Plan for the School-Running Conditions Standardization Project in Vocational Schools"	Ministry of Education and four other departments
2022-11-28	Joint Issuance of Guiding Opinions on Advancing the Cultivation of Rural Craftsmen	Eight ministries and commissions
2022-12-21	Opinions on Deepening the Construction and Reform of the Modern Vocational Education System in the New Era	General Office of the CPC Central Committee, General Office of the State Council
2023-01-06	Notice on the Issuance of the Work Plan for Strengthening and Improving the New Apprenticeship System in Enterprises with Chinese Characteristics in the New Era	Ministry of Human Resources and Social Security
2023-03-20	Work Plan on Carrying out Investigation and Research throughout the Party	General Office of the CPC Central Committee
2023-07-14	Notice on Accelerating the Reform of Key Tasks in the Construction of the Modern Vocational Education System	General Office of the Ministry of Education

Source: The State Council of the People's Republic of China, 2023

In order to compete globally in manufacturing, China needs many highly skilled workers who are trained for the industry (Zenglein & Holzmann, 2019). The National Vocational Education Reform Implementation Plan from 2019 says that vocational education and regular education are different. Traditionally, vocational education in China has been seen as not as good as regular education, and many see it as a last choice (Fan, Zheng, Ebonite, & Juanatas, 2024). However, with the government focusing more on vocational education, people's views are changing. The State Council's plan for vocational education reform emphasizes improving the

national vocational education system, setting national standards, and connecting education with industry through programs that combine school and work (Li & Xue, 2023). It also calls for a diverse education system, better policies for technical workers, and better ways to check and improve vocational education quality (Li & Pilz, 2023).

In China, vocational education can be split into academic and non-academic categories. The system is broad and has two main parts: secondary vocational education and higher vocational education (Wang & Huang, 2023).

Secondary Vocational Education: This is usually three years long and is for students who finish junior high school. It includes schools that focus on specific skills, like vocational high schools and technical schools. These schools teach students skills for jobs that need basic and intermediate skills.

Higher Vocational Education: This has two levels. The first level is for high school graduates and gives them advanced skills, ending with an associate degree after 2 to 3 years. This helps students get jobs with practical skills and knowledge. The second level is Vocational Undergraduate Education, which is a four-year program that goes deeper into professional education. It focuses on mixing theory and practice to teach high-level technical skills. This makes sure that graduates have strong skills and knowledge for tough professional challenges (Liu & Hardy, 2023).

Higher vocational students can keep studying into vocational undergraduate programs. The Chinese government is also working on making it easier to move from secondary to higher vocational to undergraduate programs. Additionally, China's vocational education includes continuing education and adult education, offering ways for workers to improve their skills throughout their careers. The government also supports connecting vocational education with the job market by offering training programs and certifications to meet the needs of society and the economy.

2.1.4 The Current State of Vocational Education in Fujian province.

China's vocational education is in an important period of development opportunities (Yuan & Wang, 2021). In 2022, China's Ministry of Education emphasized the importance of vocational education in the 'Vocational Education Law of the People's Republic of China.' This law divides vocational school education into two main categories: secondary and higher vocational school education (Xue & Li, 2022).

Fujian, a province located along the southeast coast of China, has a well-developed vocational education system and extensive experience in this field. In recent years, with the national focus on vocational education and the support of local governments, vocational education in Fujian Province has grown rapidly. As of June 15, 2023, there are a total of 1,578 higher vocational colleges in China, an increase of 57 compared to 2022. This includes 1,545 at the junior college level and 33 at the undergraduate level. In Fujian Province, there are 50 higher vocational colleges and universities. Various policies and measures have been implemented to accelerate development, leading to the expansion of the vocational education sector in recent years. Higher vocational education in China has become an integral part of higher education (Ling Chuang, & Wang, 2023).

It is encouraging to note that in June 2024, in accordance with the Fujian Provincial Department of Education's "Notice on the Implementation of the 2024 Pilot Program for the '3+4' Integrated Training Model for Secondary Vocational and Undergraduate Education" (Fujian Provincial Department of Education, 2024), Fujian Province launched the "3+4" integrated training pilot program. Under this program, students will study in relevant majors for three years and, upon passing the qualifying exams, will transition to the corresponding pilot undergraduate institutions for an additional four years of study. This seven-year program aims to establish a seamless educational system that integrates cultural foundation, professional theory, and technical skills to develop highly skilled and knowledgeable undergraduate-level professionals. The pilot program includes three undergraduate institutions: Quanzhou

Vocational and Technical University, Xiamen Huaxia College, and Fujian Technical Normal College. It also involves ten secondary vocational schools: Fujian Industrial School, Fujian Business School, Xiamen Information School, and Jinjiang Vocational Secondary School. This initiative undoubtedly provides students with broader channels and opportunities for their academic development, and if successful, could potentially open a direct pathway from secondary vocational education to undergraduate education.

2.1.5 Some Problems Existing in Vocational Education

Different countries' vocational education systems face various challenges that affect their effectiveness and appeal.

In countries like Denmark, vocational education and training (VET) face two main challenges: low enrollment rates and high dropout rates among VET students. Despite efforts to enhance the appeal of VET, it struggles to attract young people, indicating a need for a more youth-oriented learning environment and emphasizing the attractiveness of VET through pathways to higher education (Aarkrog, 2020). Similarly, vocational education in Indonesia faces challenges despite the government's efforts to improve vocational education by expanding the number of schools nationwide (Pambudi & Harjanto, 2020). A significant proportion of Indonesian graduates still struggle to meet market demand, partly due to a lack of qualified teachers in vocational institutions. In Turkey, although the majority of society acknowledges the crucial role of the VET system in the country's national development, skill mismatch has become a significant issue, primarily due to weak coordination between the VET curriculum and industry skill requirements (Özer & Suna, 2019). The technical and vocational education (TVE) sector in the Philippines, with its rich heritage, faces several challenges, including a lack of funding, inadequate infrastructure, a shortage of skilled instructors, and a perceived low status of vocational education in society (Suy, 2020).

China's vocational education faces numerous challenges that significantly impact its effectiveness and appeal (Wang, 2024). Firstly, insufficient societal recognition often relegates vocational education to a "second-best choice," leading many students and parents to favor general high schools or universities over vocational training, thus overlooking the inherent value of vocational education (Meng, 2023). Secondly, a major issue is the mismatch between skills and market demand. The disconnection between vocational education curricula and actual market needs makes it difficult for graduates to meet specific employer requirements (Song & Xu, 2024; Liu & Hardy, 2023).

Additionally, inadequate teaching resources and infrastructure issues severely constrain the quality of vocational education (Qiping & White 2023). This includes a lack of professional identity among some vocational college instructors (Hanna et al., 2021) who, despite being part of higher education, perceive themselves as having lower teaching standards or societal status (Guan & Blair, 2024) .

Currently, although China has implemented a series of policies to support the development of vocational education (McGrath & Yamada, 2023), there remains a gap between policy and practice in the implementation process. To promote the high-quality development of vocational education, it is necessary to adopt various policies and measures (Ling et al., 2023), including optimizing curriculum content, enhancing teacher quality, improving teacher professional identity, upgrading infrastructure, and increasing societal recognition of vocational education (Bailey et al., 2024).

In summary, researchers have studied vocational education systems worldwide with the aim of equipping students with skills that are applicable to the labor market. Germany's successful dual system integrates practical and theoretical training, while Japan ensures skill relevance through industry collaboration and educational reforms. The United States relies on legislation to guide its diverse

vocational education offerings, and Australia emphasizes workplace learning through its TAFE model. China is also undergoing systemic reforms to continuously elevate the role of vocational education in national development. Common challenges faced by these countries include issues of engagement, skill mismatches, and the need for educational pathways that align with modern economic demands.

2.2 Professional Identity

2.2.1 Definitions of Teacher Professional Identity

Definitions of teacher professional identity vary but generally converge on several key perspectives. Professional identity refers to one's self-image regarding their role within a profession (Fitzgerald, 2020; Karaolis & Philippou, 2019). This self-image encompasses teachers' perceptions, views, beliefs, emotions, motivations, and attitudes about their roles (Shafiee, Marandi, & Mirzaeian, 2022; Suarez & McGrath, 2022; Schutz, Hong, & Francis, 2020). These elements form the core aspects of teacher professional identity. For some authors, teacher professional identity comprises the mission and central qualities of the individual teacher, and is framed in the knowledge of the subject, competence, performance, life stories, professional development, and context (Rodrigues & Mogarro, 2019).

From a psychological perspective, Teacher professional identity is considered an individual cognitive construct, as teachers continually seek to understand and validate their self-image as educators (Tateo, 2012; Beijaard, Koopman, & Schellings, 2023). Teachers develop and maintain this identity through processes of interpretation, self-reflection, and agency (Karaolis & Philippou, 2019). Sociologically, Teacher professional identity is influenced by social and contextual factors such as social recognition, respect for the teaching profession, and policies and industry norms (Matsagopane & Tang, 2023; Beijaard & Meijer, 2017; Yazan, 2018; Norton, 2017; Rojas et al., 2021).teacher identity by suggesting that teacher identity is made up of

the underlying domains motivation, self-image, self-efficacy, and task perception (Hanna et al., 2019).

Teacher professional identity is a fluid, multifaceted construct that evolves over time and space, influenced by interactions between individuals and their social contexts (Gill, 2020). It involves the core mission and characteristics of individual teachers, shaped by their subject knowledge, competencies, performance, life experiences, professional development, and contextual factors (Suarez & McGrath, 2022). This dynamic process results in continuous formation and reformation of professional identity (Cruess & Steinert, 2019). Despite the absence of a universally agreed-upon definition, there is broad acknowledgment of its significance in understanding teachers' professional roles (Ahmad & Wahab, 2019). Teachers express their professional identity through their work, self-presentation, and alignment with their aspirational and actual selves (Le, McConney, & Maor, 2022).

The researcher suggests that professional identity acts as a pivotal concept linking social structures and individual actions, encapsulating the collective acceptance of attitudes, values, knowledge, beliefs, and skills within a profession (Burke & Stets, 2022). Ashmore, Deaux, and McLaughlin-Volpe (2004) conceptualize professional identity as a type of collective identity, influenced by an individual's perception and evaluation of their occupation, which in turn affects their work behavior. The complexity of teacher professional identity, which varies across disciplines such as psychology, sociology, philosophy, and education, remains central to the teaching profession. It provides a framework for understanding teachers' roles and reflective self-awareness (Huang, Wang, & Teng, 2021; Gong & MacPhail, 2023).

In addition to these conceptual frameworks, external factors such as organizational support, societal recognition, and policy guidance also impact the development of teacher professional identity (Cruess et al., 2019). Organizational support includes salary, working conditions, and institutional care (Purwanto, 2020) while societal recognition involves public respect for the teaching profession. Policy

guidance from relevant authorities shapes the norms and standards within which teachers operate, further influencing their professional development. (Suarez & McGrath, 2022).

By integrating these perspectives, we gain a comprehensive understanding of teacher professional identity as a complex, multidimensional concept shaped by both internal cognitive processes and external contextual factors (Berger, 2019; Derakhshan, Coombe, & Arabmofrad, 2020). This holistic view enhances our exploration of how teachers' perceptions interact with broader influences to affect their professional development.

2.2.2 Research Related to Teacher Professional Identity

Some studies have demonstrated that teachers' sense of identity is closely related to their educational beliefs (Berger & Levan, 2019). Teacher professional identity as multidimensional: mapping its components and examining their associations with general pedagogical beliefs, and plays a vital role in their instructional decision-making (Canrinus et al., 2011) and professional development (Frazier & Hoskins, 2019). The concept of Teaching Professional Identity is pivotal for ensuring high-quality teaching, fostering professional growth, and facilitating a rewarding teaching career (Ezer, Gilat, & Sagee, 2010). Teachers' dedication to their profession and their self-efficacy, reflecting their confidence in their abilities, are crucial components of their professional identity. These elements significantly impact student outcomes and attitudes (Derakhshan, Arabmofrad, & Taghizadeh, 2020). Therefore, it is essential for policymakers to actively promote and support the cultivation of robust professional identities among teachers. Cultivating a robust sense of Teaching Professional Identity can enhance teacher effectiveness by harmonizing their self-perception with their professional actions (Granjo, Castro, & Peixoto, 2021; Moe & Maung, 2019). This alignment grants teachers the means and autonomy to actively mold their continuous professional development. Rezapkina (2020) suggest that a teacher with a positive self-perception of their professional identity will tend to

overlook the discomfort brought by poor working conditions. Labbaf, Monzadeh, and (2019), for instance, have examined the extent to which the teachers' professional identity factors affect their teaching quality. To this end, 143 EFL instructors and students contributed to semi-structured interviews, and subsequently, based on the thematic analysis of the interviews, a questionnaire was developed and completed by the participants in their study.

Research by Karousiou (2019) highlights that teachers' professional identities not only shape their instructional practices but also influence their interpretation and implementation of educational policies. The study indicates that teachers may resist and impede policy changes that they perceive as threatening to their identity, values, and experiences. Consequently, it is imperative to recognize teachers as independent professionals rather than mere implementers of external directives. Policymakers must consider teachers' perspectives, needs, and expectations in the formulation and execution of educational policies. Successful educational reform requires a genuine commitment to respecting and nurturing teachers' professional identities (Karousiou, Hajisoteriou, & Angelides, 2019). Ultimately, providing teachers with the necessary support to develop strong professional identities is critical. Such support enables teachers to adapt and respond effectively to changes in the educational landscape (Wu & Niazi, 2024).

Some researchers have focused on the identity of pre-service teachers and they believe that the induction period of a new teacher is a crucial time for him to undertake identity moulding. Previous research has classified the determinants of pre-service teacher identity into two main categories: personal and professional (Huang & Wang, 2024; Woods, 2021). Among the personal factors, characteristics such as age (Flores, 2020). and gender (Hanna & Zijlstra, 2020). life history encompassing past educational experiences (Kim & Asbury, 2020) and early influences from teacher role models (Beauchamp & Thomas, 2009) have been identified as significant contributors to the formation of pre-service teacher identity. Additionally, psychological attributes including agency and emotions play a crucial

role in shaping this identity (Huang & Wang, 2024) on the other hand, teacher identity are predominantly centered around educational training, which is deemed the most critical element. Within this domain, university studies and teaching practicums emerge as key drivers in the evolution of pre-service teacher identity (Waine, 2022; Rushton, Gibbons, Brock, & Towers, 2023).

Research shows that after entering the workplace, a university teacher will gradually develop a teacher identity through continuous teaching and practice. This teacher identity includes an identification with the profession, an identification with the academic research results achieved, and an identification with one's status as an intellectual (Shi, 2023). Some scholars have also identified several factors that can strengthen or limit the development of teacher identity. For example, more contact with students, a better understanding of their inner world and participation in staff development programs are considered to strengthen teacher identity. The general environment of higher education is generally considered to be restrictive (Tomlinson & Jackson, 2021). In addition, whether the environment affects professional identity depends on whether teaching is valued in the department (Annala, Lindén, Mäkinen, & Henriksson, 2023).

Some scholars have pointed out that there are five psychological processes involved in developing and maintaining a teacher identity: a sense of appreciation, a sense of connection, a sense of competence, a sense of commitment, and an imagination of one's future career trajectory. Recent studies have explored various aspects of teacher identity and related factors. For example, a 2023 study examined the impact of "brain synchrony" between students and teachers on academic performance, finding that stronger alignment predicted better outcomes. This research underscores the importance of direct instruction and the potential benefits of social learning in the classroom (Edutopia, 2023). Another area of focus has been teacher attrition and retention. A comprehensive review by Nguyen and Springer (2019) analyzed over 25,000 scholarly records to understand what drives teacher mobility. They found that

school organizational characteristics, such as administrative support and professional development, significantly influence teacher turnover. Additionally, the study suggests that evaluation and accountability practices may have positive effects on retaining effective teachers and reducing turnover (Qin & Liu, 2023).

By observing the current research on the various concepts and tools for examining teacher identity, we can see that some of these dimensions are similar or closely related, and we can seek research perspectives from them. Specifically, an analysis of available instruments identified 6 keys domains that encapsulate the meanings of teacher identity: 1) Teachers' perception (Torres, Strong, & Adesope, 2020); 2) Teachers' role (Cooper & Olson, 2020); 3) Teachers' Performance (Moradkhani & Ebadijalal, 2024) and 4) Teachers' competence (Siri, Sukaatmadja, & Rahyuda, 2020). 5) Teachers' self-efficacy (Marschall, 2022; Hanna & Oostdam, 2019); teacher job satisfaction (Butakor & Guo, 2021) .

2.2.3 The Theories of Teacher Identity Development

These theories have been frequently employed to conceptualize the development of teacher identity in professional learning contexts.

2.2.3.1 Professional Role Identity

Professional role identity refers to an individual's understanding and perception of their role in their profession, as well as the values, beliefs, and behavior norms associated with that role (Kriukova & Reva, 2020). In the field of psychology, particularly in developmental and social psychology, the study of professional role identity has received widespread attention. Professional role identity is an important part of an employee's identity (Pennington & Richards, 2016). Research has examined the construction and evolution of role identity, along with its effects on employees' attitudes, well-being, motivation, and performance (Nordhall, 2020). In the context of teacher education, understanding professional role identity is crucial for

comprehending how teachers perceive their roles and responsibilities within the educational system. This understanding can inform the development of teacher training programs that align with teachers' perceived roles and expectations (Hermansen, 2022; Shwartz & Dori, 2020).

2.2.3.2 Narrative Identity Theory

Narrative identity theory, rooted in the work of Dan McAdams, posits that individuals construct their identity through the stories they tell about their lives, integrating experiences into a cohesive narrative that provides a sense of unity and purpose (Perlin & McAdams, 2023). In the context of teacher education, this theory offers valuable insights into how student teachers develop their professional identity. Gholami, Faraji, Meiger, and Timi (2021) suggest that student teachers navigate through stages of identity development, from pseudo-identity to moral identity, with their narratives reflecting the interplay between personal and professional selves.

2.2.3.3 Communities of Practice Theory

In academic discourse, Wenger's (1998) concept of Communities of Practice (CoP) has been extensively utilized in exploring the development of teacher professional identity within the context of professional learning, which is predominantly situated within a socio-cultural paradigm. A CoP is formed by individuals who share a common goal and collaborate to enhance their specific practices (Fairley, 2020). Socio-cultural learning in a CoP, being a form of situated learning, facilitates social, cognitive, and emotional development. Wenger (1998) posits that social learning is transformative, reshaping our identity and capabilities. Thus, teacher professional development is regarded as a social learning space where the professional identity of teachers evolves (Wenger, 2010).

2.2.3.4 Vygotsky's Sociocultural Theory

Vygotsky's work emphasizes the significance of social interaction and cultural context in learning and development. This theory can be applied to understand how teachers' professional identity is shaped through their interactions with colleagues, students, and the broader educational community (Newman, 2020). In the context of researching teachers' professional identity, this theory can be utilized to explore how teachers construct their professional identity through social interactions. Additionally, Vygotsky's theory underscores the importance of mediational tools in shaping teachers' professional identity and practices, which can include symbols, cultural tools, and more (Riel & Lepori, 2014)

The theory also introduces the concept of the zone of proximal development (ZPD), which distinguishes between an individual's current level of development and their potential level with assistance (Vygotsky, 1978; Scott & Palincsar, 2013). This can be employed to analyze the current state of teachers' professional identity and their potential for development. Teacher education programs can incorporate Vygotsky's sociocultural theory by facilitating collaborative learning experiences and providing scaffolding to support teachers' professional growth.

2.2.3.5 The Dynamic Systems Model of Role Identity Theory

The Dynamic Systems Model of Role Identity (DSMRI), as proposed by Kaplan and Gamer (2017), offers insights into the development of teacher role identity. Identity defined by Beijaard (2004), refers to how teachers perceive themselves and their comfort level in their role. It serves as a foundation for teachers' decision-making in teaching-related matters. Traditionally, two broad perspectives have been used to understand teacher identity formation: the constructs model and the holistic socio-cultural model. The constructs model emphasizes self-related factors like context, collaboration, and self-efficacy, using quantitative methods to measure changes (Ding, 2024). In contrast, the socio-cultural model focuses on the subjective meanings of teacher identity in specific socio-cultural contexts, using qualitative

methodologies for in-depth descriptions (Beauchamp, 2009). DSMRI integrates these two approaches, leveraging their strengths and compensating for their limitations (Kaplan & Gamer, 2017).

In summary, teacher identity has emerged as a critical element in the teaching profession, significantly impacting teaching and learning outcomes. Much research has been conducted to explore and conceptualize teacher identity and its influence on educational processes. It is evident that teacher identity is present in various teaching contexts, both inside and outside the classroom. Despite its recognized importance, there has been limited research on the factors contributing to the development of teacher professional identity (Hussain, 2019). In particular, there is a lack of research on the professional identity of teachers in higher vocational schools in Fujian Province, China.

2.2.4 Research on Professional Identity of Chinese Teachers

In China's relative research, some researcher argue that teachers' professional value identity involves various factors such as cognitive recognition of the profession, self-emotion, work willingness, skill goals, and personal values (Li, 2022; Ye & Zhao, 2019). A study explores the different perspectives on the professional identity of pre-service and novice teachers, as well as their decisions to leave the profession. The professional identity of teachers is further divided into six factors: values, efficacy, commitment, emotions, knowledge and beliefs, and micropolitics (Hong,2010).

In a study conducted on pre-service teachers from several universities, including South China Normal University, Lingnan Normal University, Guangdong Second Normal University, East China Normal University, and Southwest University, researchers pointed out that when these teachers experienced higher levels of social support, they demonstrated a strong sense of professional identity and high self-efficacy. Social support was found to have a significant impact on self-efficacy (Chen, Zhong, Luo, & Lu, 2020).

Professional identity has become a central topic in teacher education research and is a key factor in shaping teachers' self-perception and their views on various aspects of their profession, including their role as teachers, academic research, curriculum design, classroom teaching, teaching methods and strategies, as well as their interactions within educational settings (Zeng & Liu, 2024). The Factors Influencing Teachers' Willingness to Remain in Rural Areas After the Expiration of Their Compulsory Service Contract: A Case Study in Enshi Prefecture, Hubei Province, China. Quality in Sport, asserts that teachers' professional value identity is a comprehensive entity of an individual's positive cognitive evaluation, emotional experience, and behavioral tendency towards their profession, including the evaluation of professional value, perception of professional role, expression of professional emotion, and experience of professional efficacy (Dong, Bo-qin, Abbas, Peow, & Zhang, 2023).

Chinese scholar Guang, Shuhua and Wei (2007) has clarified the concept of 'teacher professional identity,' defining it as the process by which individuals gradually develop and confirm their teacher role through their experiences, and the degree of identification with the teaching profession. This identification is influenced by factors such as gender, school type, age, teaching experience, professional title, motivation, salary level, personality, and interests, as well as the impact of significant others, school environment and welfare, relationships with colleagues and superiors, national policies, social status, and welfare.

In the current research on teacher professional identity, most studies concentrate on new teachers, while the professional identity of seasoned teachers receives comparatively less attention. Furthermore, there is limited research on the professional identity of teachers in higher vocational colleges, indicating that this is a significant area for further exploration.

2.3 Related Research on Constructs of Professional Identity

As discussed in earlier segments, the identity of a teacher comprises the following hypothesized components:

- 1) Teachers' Perceptions
- 2) Teachers' Roles
- 3) Teachers' Performance
- 4) Teachers' Competence
- 5) Teacher' Self-Efficacy;
- 6) Teachers' Job Satisfaction

2.3.1 Teachers' Perceptions

Teacher professional identity involves the process of validating one's image as a teacher, that is, what kind of teacher they are and what kind of teacher they want to become (Beijaard et al., 2023). The self-perception of teachers is regarded as an integral component in the consideration of their professional identity. Teachers' self-perception of their competence impacts their attitudes toward teaching, which in turn, influences both their practice and student outcomes. Wu and Chu (2023) in their study established that self-efficacy is capable of facilitating digital competence among the teachers. The authors also found that teaching ability with the technology, experience, and professional growth contributed to the enhancement of self-perception.

Mohebi and Bailey (2020) expanded upon this and concluded that (a) one's self-perception and behavior influence each other and (b) one's self-perception can affect others' self-perception and their behavior. Zhu, Liu, Fu, Yang, and Zhang (2018) explained that both terms, Teachers' self-efficacy and teacher self-concept, are about teachers' perceptions about their competence in teaching.

Karaolis and Philippou (2019) employed a psychological lens to define teacher identity as the perceptions that teachers hold of themselves at the present time. This encompasses their views and understanding of their teaching abilities, styles, and methods, as well as their awareness of the roles they play and the impact they have on the educational process. The intersection of teachers' personal and professional identities plays a crucial role, teacher identity is both personally and contextually shaped (Beijaard & Koopman, 2023).

Some researchers believe that self-image and work motivation are important factors influencing teachers' self-perception (Łukasik, 2023). A teacher's self-image is based on their self-perception and feedback from others, while work motivation drives teachers to choose, continue, or leave the teaching profession. Additionally, teachers' expectations for their future professional lives also affect their self-perception. Other scholars point out that social practice and collaboration provide teachers with more professional development opportunities, thereby enhancing their self-perception, and teachers with high intrinsic motivation typically have a higher self-perception of their teaching abilities, which helps them perform more confidently and effectively in their teaching (Baker & Ryan, 2021).

Moreover, self-perception influences teachers' motivation and resilience, which are critical for sustained professional growth and development (Guillén & Mayorga, 2020). Teaching motivation is a key factor influencing teachers' self-perception. Teachers with high intrinsic motivation typically have a higher self-perception of their teaching abilities, which helps them to perform more confidently and effectively in their teaching (Granziera & Perera, 2019).

Teaching experience also significantly impacts teachers' self-perception. Teachers with extensive teaching experience generally have a higher self-perception of their teaching abilities, which can enhance their classroom management skills and teaching effectiveness. The researcher based on prospective teachers' assessment of

themselves in their present circumstances as determinants of their future behavior, suggests that individuals' perceptions of their future selves are as important as their perceptions of their present selves (Burcu et al., 2020; Yavuz Tabak, Yenel, Tababk, & Sahin, 2021). Positive expectations for future development help teachers better adapt to changes and uncertainties, increasing their job satisfaction and self-perception, and they are capable of managing their personal issues while adapting to changes in the social and political environment, as well as meeting new expectations. Teachers' self-awareness is crucial in helping them face the challenges brought by educational reforms, enabling them to navigate and respond to these changes effectively (Prieto-Ballester, 2021).

Redmond et al. argue that Technology, Pedagogy and Content Knowledge perceptions are associated with teacher's capabilities (Redmond & Lock, 2020). Researchers believe that teachers should meet the following professional requirements when dealing with challenges and abilities at different stages: 1) their role as teachers, 2) their ability to teach and meet the specific learning needs of students, 3) effectively managing the classroom, and 4) collaborating with other professionals within the school. (Keller, Zhong, & Yeung, 2020). Studies such as Yang et al. (2022) emphasized the importance of experience and teaching style for self-perception. Han (2021) found that feedback, scaffolding, and active learning strategies positively impact teachers' self-concept, with student engagement playing a crucial role. When students actively participate in classroom activities, teachers are more likely to develop a positive perception of their teaching abilities, thereby enhancing their teaching confidence and effectiveness (Granziera & Perera, 2019; Konokman, Yelken, Karasolak, & Cesur, 2018). Antoniou and Kyriakides (2011) state that critical reflective practice by teachers must utilize a combination of feedback from others, educational research, and their own perceptions. Teachers' professional self-concept includes a series of beliefs, attitudes and assumptions about aspects such as self-accomplishment in teaching, relationships with students and with other teachers, and the reinforcing value of the teaching profession (Villa, 2001).

Therefore, it can be seen that teachers' self-perception is their comprehensive view of themselves, which includes their self-image (how they see themselves) and their ideal self (what they hope to become). The formation of self-perception is influenced by various factors, involving both personal and socio-cultural aspects. In the collected literature on self-perception, researchers have mainly focused on feedback from others, teaching abilities, styles, and methods, positive attitude and expectations for career in the future, teaching experience, self-image. These factors all have a certain impact on teachers' self-perception (Details can be found in the Appendix C).

2.3.2 Teachers' Roles

The professional identity of instructors at higher vocational education colleges is deeply intertwined with their roles as teachers. A teacher's professional identity is shaped not only by personal beliefs but also by their roles within the educational context, including how they position themselves at work and how they interact with students, colleagues, and other relevant stakeholders (Beijaard et al., 2023; Huang, 2024).

Teachers are professional educators whose main task is to educate (Tondeur et al., 2019). to guide, train, evaluate students, therefore teachers in the context of education have a very important and very large role for students. The teacher must be able to become a facilitator or mediator, evaluator for students, especially in e-learning (Erlia, 2021).

Teaching is a highly demanding and complex task, requiring teachers to act as content providers, role models, mentors, and learning facilitators (Crosby, 2000). Teachers must continually develop their knowledge and skills to meet formal teaching standards and guide students towards academic success (Beijaard et al., 2023; Gakonga, 2019). They take on diverse roles, including mentors, counselors, and motivators (Dey & Dutta, 2018). In vocational education, teachers balance their academic and practical expertise, shaping their professional identity (Lennert &

Mølstad, 2020; Brevik & Lier, 2015), while also playing roles such as advisors and discipline monitors (Banin et al., 2023).

Research often examines the conflicts between teachers' roles and system requirements, including their interactions with the local business community. For instance, Ginting and Linarsih (2020) emphasize the need for teachers to apply technology in ways that are pedagogically sound, underlining the importance of vocational experience in building professional credibility. These studies suggest that the demands placed on teachers to be credible in both academic and vocational realms contribute to the evolution of their professional identity. As teachers navigate between academic expectations and industry needs, their professional identity is shaped by the complex set of roles and demands they face (Dickinson, Fowler, & Griffiths, 2022).

Furthermore, Shengnan and Hallinger (2021) research in China, and They emphasized the importance of developing skills for critical inquiry into one's practice as a key factor in the process of becoming vocationally proficient instructors. These studies underscore the multifaceted nature of teachers' self-perception in relation to their professional identity. In the context of self-perception, the role of perceptions is associated with the self as a subject-matter expert, pedagogical expert, and didactical expert. This balance between technical proficiency and teaching ability is vital for achieving effective educational outcomes. The combination of subject expertise with the pedagogical practitioner role adds complexity to the responsibilities of vocational educators, which, in turn, is likely to have significant impacts on their professional development and identity formation (Gregson, 2020).

The teacher's role in learning that emphasizes creativity and initiative, interaction and collaboration. The teacher also has the responsibility in developing students' self-concepts, for example about morality and ethnic diversity. Teachers serve multiple roles in the learning process. As learning resources, their role is tied to their ability to master the subject matter (Karim, 2021). Acting as facilitators, teachers provide services that simplify the students' acquisition of knowledge (Onrubia, 2022). As managers, teachers take full control of the learning environment's climate. In the

role of demonstrators, teachers exhibit attitudes and behaviors that inspire students to emulate or surpass them. As guides, teachers mentor and direct students toward achieving their goals and dreams. Additionally, as motivators, teachers play a crucial role in fostering students' motivation and enthusiasm for learning. Lastly, teachers also act as elevators, supporting and elevating the learning process and outcomes (Cochran-Smith, 2005; Hartinah, 2020).

Role of teachers who work with differentiated classrooms is possibly different from traditional classroom teacher in some significant ways. Teachers see themselves as organizers of learning opportunities instead of just informant. They struggle for both taking students' attention and lead to understanding. They indulge in organizing an effective teaching and learning activity based on exploration (Maleko, Kiva-Khamzina, Rubanova, Plugian, & Trueben, 2021; Filgona, Sakiyo, Gwany, & Okoronka, 2020)

Teachers need to be able to assess students' cognitive, emotional, and motivational states (Urhahne & Wijnia, 2021) and use effective assessments to enhance teaching quality. Many teachers can benefit from enhancing their expertise and skills in classroom assessment. Without assessment, students' learning becomes absent from the teaching process (Gareis & Grant, 2015). Their professional identity and beliefs about assessments significantly shape how they perform this role (Fairman et al., 2022). Additionally, teachers' engagement in research and evaluation of educational practices outside the classroom is crucial for improving the overall quality of teaching and the learning experience for students (Fadden & Williams, 2020).

In essence, teachers' roles as facilitators, motivators, triggers, instructors, and sources of inspiration are essential for encouraging students to develop various skills. (Wlodkowski & Ginsberg, 2017). These roles not only promote students' comprehensive development but also significantly impact teachers' professional growth and identity formation. In research, teachers evidently have many roles, among which educator, practitioner, evaluator, mentor, and motivator are considered the most important roles (Details can be found in the Appendix C).

2.3.3 Teachers' Performance

Polished teaching skills indicate a strong professional identity among vocational educators. The effectiveness of pedagogical education significantly influences Teachers' Performance and professional identity. Teacher performance can be measured based on specific competencies and activities in the learning process. Internal factors influencing teacher performance include education level, teaching supervision, upgrading programs, conducive work environments, physical and mental health, leadership styles, welfare, and managerial abilities. External factors include professional and organizational commitment, and job satisfaction (Butar, Bross, & Kanto, 2020).

Overall, teachers have shown satisfactory performance in teaching, promoting community involvement, and engaging in professional development. They excel particularly in monitoring student progress and providing extra support for slower learners (Baluyos, Rivera, & Baluyos, 2019). Effective planning, reflective teaching practices, and assessing learning impacts are crucial aspects of teacher performance (Buchanan, Harb, & Fitzgerald, 2020). Motivation and performance are key to school success and student achievement (Comighud & Arevalo, 2021).

Teacher performance is intertwined with professional identity formation. Effective classroom management, student engagement, and innovative teaching methods are key performance indicators (Derakhshan, 2020; Richter, 2021). Feedback from students and performance perception significantly impact teachers' professional self-worth (Forgasz, Kelchtermans, & Berry, 2023). Assessment tools and performance improvement strategies are essential for enhancing teaching effectiveness (Baek et al., 2020).

Teacher performance reflects the ability to effectively fulfill duties and achieve goals, significantly impacting student achievement and learning outcomes

(Bardach & Perry, 2022; Munna & Kalam, 2021). It involves planning, conducting, evaluating learning activities, and responding to evaluation results. Strong connections with students are crucial for performance improvement.

Professional ethics are essential for effective, efficient, and productive teaching (Kusumaningrum & Sumarsono, 2019). Performance improves with loyalty and strong commitment to teaching responsibilities, mastery of learning materials, discipline, and creativity in teaching methods (Khasanah et al., 2019). Indicators of performance include lesson planning, learning execution, maintaining interpersonal relationships, assessing learning outcomes, and conducting enrichment and remedial programs (Zahid & Khanam, 2019). Work motivation, job satisfaction, administrative support, student outcomes, work-life balance, school culture, and professional development opportunities are critical for teacher performance (Kilag & Angtud, 2023). Leadership and organizational culture positively influence teacher performance (Anra & Yamin, 2017; Kanya & Fathoni, 2021). Principal leadership, organizational culture, and teacher competence significantly impact teacher performance, although the influence of principal leadership may vary (Indajang, Halim, & Sudirman, 2021).

In summary, teacher performance is shaped by a mix of internal and external factors, including education, motivation, work environment, and professional development. Based on the literature review, it can be observed that teaching implementation, teaching skills and methods, organizational commitment, feedback from others, work environment, and professional development are closely related to teachers' performance. (Details can be found in the Appendix C)

2.3.4 Teachers' Competence

In its broadest sense, competencies represent knowledge, skills, abilities, attitudes, and values that are important for citizens to live a good life in society. Within the educational sector, competence describes the knowledge, beliefs, motivation, and self-regulation of the teacher (Baumert & Kunter, 2013).

Teachers' competencies that make students more "visible," including empathy skills (Sulaiman,2020), a positive attitude, dialogue skills, the will to ask questions and listen to responses, as well as skills related to reflection and resilience. The relationship between students and teachers is crucial, as both are equally responsible for the success of the teaching and learning process (Delos Reyes & Torio, 2020). Therefore, they must work together to create optimal learning conditions. Teachers foster these conditions by engaging in relational behaviors that promote positive student experiences (Cents-Boonstra,2021).

Professional identity is closely related to the improvement of teaching competence, which involves enhancing one's professional skills through teaching practice (Sulaiman,2020). Teachers' Pedagogical Competence as a Prerequisite for Entering the Profession (Liakopoulou,2011). The teaching competence of instructors is a critical aspect of their professional identity, encompassing a balance of technical knowledge and teaching ability. Misbah, Gulikeers, Dharma, and Mulder (2020) highlighted that vocational training instructors should possess competencies such as subject matter expertise, pedagogical skills, and the ability to bridge theory with practice. Freij (2022) found that student evaluations of instruction are positively influenced by instructors' subject matter knowledge, communication skills, and ability to engage learners. Williams-McBean (2023) emphasized developing professional and pedagogical competence through faculty training to enhance student satisfaction. The ability to translate technical abilities into effective pedagogical practices is crucial for vocational instructors. Moreover, the ability to critically question their teaching and receive feedback from colleagues and students is essential for improving instructional practice and reinforcing professional identity. A teacher's competence is not limited to imparting knowledge; it also involves interacting with students, applying innovative teaching methods, and delivering high-quality education in complex and dynamic environments (Tapani & Salonen)

Competence, as defined by researchers like Omar, Zahar and Rashid, A.M. (2021). It includes knowledge, skills, attitudes, and values necessary for effective job performance. Antera (2021) elaborates that competence components include knowledge, skills, attitudes and values for the majority of the scholars. It often linked with responsibility, readiness, and expertise. Asmarani (2021) views professional competence as a combination of mastery of knowledge, skills, values, and attitudes, crucial for carrying out professional tasks effectively. With appropriate competencies, teachers are expected to increase their work productivity. In short, a study on teachers in India found that the better the professional competence of teachers, the higher their work efficiency, and improve learning processes to motivate students to learn and excel (Sulastri, 2020).

Teacher motivation is also an important component of competence, not only reflected in their ability to inspire students, but also in their drive for professional development and teaching improvement. The research points out that factors such as leadership, work environment, and opportunities for professional growth can influence teachers' motivation and performance. Moreover, teacher competence involves multiple aspects, including knowledge, skills, beliefs, and self-regulation. These elements work together to help teachers effectively achieve educational goals (Kierner, Gröschner, Kunter, & Seidel, 2018). Teacher competence is modeled as a multidimensional construct, which includes the cognitive and emotional motivational resources required to meet the demands of the classroom (Blömeke, 2017).

Rusilowati and Wahyudi (2020) states that professional teachers must have four competencies: pedagogical, personality, social, and professional competence. Teachers with these competencies can direct and develop students' potential and overcome learning difficulties. Teaching must be viewed as an art of managing the learning process, obtained through practice, experience, and continuous learning (Mujiyatun, Khodijah, & Abdurrahmansyah, 2021). According to the Republic of Indonesia Law No. 14 of 2005, pedagogical competence is defined as the ability to manage learners' learning, including understanding student characteristics, mastering

learning theories, developing curricula, organizing learning, using ICT, facilitating student potential, effective communication, conducting assessments, and using assessment results for learning improvement (Akhyak & Abu, 2013).

Teacher competence involves effectively using knowledge, skills, and talents to motivate students to learn, encompassing goal setting, content organization, activity selection, methodology application, resource utilization, and assessment (Glenny & Michael, 2021). Ludwikowska (2019) initially listed teacher competencies as supporting learners, creating conducive learning environments, utilizing diverse teaching methods, adopting modern teaching styles, being effective teacher leaders, possessing multicultural competencies, and preparing for future changes in the teaching profession.

Digital technologies provide essential support for personalized educational interventions, promoting creativity as pedagogical tools (Li, Kim, & Palkar, 2022). Teachers must also command specific skills related to the teaching-learning process, classroom management, handling academic issues, using technology, and knowledge of electronic gadgets (Glenny, 2021). A Delphi study with eight Vietnamese experts in education for sustainable development emphasized that teacher professional competence is related to three dimensions: content knowledge/cognition, pedagogy and pedagogical content knowledge, and motivation and willpower (Thao & Kieu, 2022). A study on teachers in India found that the better the professional competence of teachers, the higher their work efficiency (Asmarani, 2021).

In summary, teaching competence and professional competence are integral to the professional identity of instructors, influencing their effectiveness in teaching and their ability to foster student learning and development. Developing these competencies is essential for enhancing the learning process and, ultimately, the overall teaching quality of educational institutions.

Through a comprehensive literature review and analysis, it has been identified that in pedagogical competence, aspects such as teaching ability (including knowledge, teaching skills, methodology, digital knowledge and skills), responsibility/motivation to be competent, social competence and self-regulation, as well as integrated soft and hard skills, are closely related to teachers' teaching effectiveness and professional performance. (For detailed information, please refer to the table in the Appendix C.)

2.3.5 Teachers' Self-Efficacy

Self-efficacy, a concept first introduced by Bandura (1977), refers to the belief in one's ability to effectively perform tasks and achieve desired outcomes. Teacher self-efficacy is specifically defined as the confidence teachers have in their capacity to carry out educational tasks successfully and meet educational goals (Gibson & Dembo, 1984). According to Bandura, a key feature of teacher self-efficacy is its context-specific nature. He conceptualized self-efficacy as task- or domain-specific, meaning that individuals' beliefs about their abilities may vary significantly across different areas of activity (Bandura, 1997). This concept encompasses an individual's ability to plan, think, organize actions, exert effort, and devise strategies to overcome challenges (Tschannen-Moran & Hoy, 2007).

Over the past four decades, researchers have consistently examined teacher self-efficacy, establishing it as one of the critical constructs related to effective teaching. Bandura (1997) emphasized that successful experiences bolster teacher self-efficacy. Participating in workshops and training programs helps teachers gain experience and enhance their sense of competence. Not only does hands-on experience contribute to efficacy, but observational learning, such as watching others teach, participating in training sessions, or engaging in role-playing, can also improve a teacher's sense of effectiveness. Self-efficacy plays a vital role in helping teachers achieve goals, accomplish tasks, and cope with teaching challenges (Hussain & Khan, 2022).

Teacher self-efficacy has been shown to positively influence teaching practices, classroom management, and emotional support (Alibakhshi et al., 2020). It is defined as the belief teachers hold in their ability to successfully complete specific teaching tasks in particular contexts. When teachers feel confident in their professional abilities, they tend to have better control over daily tasks, higher motivation, and more optimistic expectations, which ultimately lead to improved outcomes. Confident teachers often adjust their teaching strategies, practices, and styles based on the unique needs of each class (Buonomo, Fiorilli, & Benevene, 2020).

Studies have found that teachers with high self-efficacy are more willing to try new teaching methods, set challenging goals, and demonstrate better planning and organizational skills. They are more likely to seek help when needed and adapt their teaching strategies when faced with difficulties (Lazarides & Warner, 2020). Teachers with strong self-efficacy are more inclined to foster positive changes in the educational environment, remain open to new ideas, and be willing to experiment with new teaching strategies, even if those strategies involve some risk (Cai, 2019).

Teacher-student relationships also indirectly influence self-efficacy. Teachers who have positive relationships with their students may perceive themselves as caring and supportive, which in turn strengthens their beliefs about their teaching role (Hajovsky, Chesnut, & Jensen, 2020). A study by Wray, Sharma, and Subban (2022) identified several factors that impact teacher self-efficacy, including pre-service training, teaching experience, and policy and contextual factors. Cherry (2018) found that teachers with high self-efficacy tend to show greater interest in academic activities, take more responsibility for school activities, remain composed when faced with challenges, and embrace difficult tasks to achieve success. Conversely, teachers with low self-efficacy tend to avoid challenges, focus on negative outcomes, and lose confidence in their abilities. Clark and Newberry's (2018) research revealed that gaining successful teaching experience, observing other teachers' methods, receiving encouragement and feedback from colleagues and superiors, and maintaining a

positive emotional state can all enhance teacher self-efficacy. Moreover, research has shown a positive relationship between school leadership and teacher self-efficacy (Hussain, 2022). In a study on Norwegian teachers, key elements of self-efficacy included adjusting teaching based on individual student needs, motivating students, maintaining discipline, and collaborating with colleagues and parents to address challenges (Skaalvik, 2007).

In inclusive educational settings, teacher self-efficacy is often higher, and continuous professional learning and active participation in training programs can further improve teaching skills (Wray & Sharma, 2022). A study on Australian secondary school teachers revealed that self-efficacy can vary across different teaching tasks and fields. It is closely related to job satisfaction, classroom climate, teacher collaboration, teaching experience, and the adequacy of guidance and training received (Perera, Calkins, & Part, 2019). Some teachers believe that a deeper understanding of students' backgrounds, building strong relationships with students, and non-teaching work experiences can enhance their self-efficacy (Fong, Dillard, & Hatcher, 2019). Teacher self-efficacy plays a crucial role in educational reform and can be strengthened through effective professional development and support (Heikka Hurmelinna-Laukkanen, Keranen, & Partanes, 2022).

A study involving 29 high school teachers from 781 schools in Western Australia indicated that both teacher self-efficacy and job satisfaction are related to dimensions of the school climate. Additionally, there is a relationship between teacher self-efficacy and job satisfaction.

Furthermore, research on elementary school teachers found that observing students' success, sharing effective teaching practices with colleagues, receiving support from leaders, and learning new professional knowledge and skills can significantly improve teacher self-efficacy (Ryan & Hendry, 2023). Some scholars argue that enhancing self-efficacy through professional development and support systems can increase teachers' commitment to their profession, leading to more

positive professional performance and personal well-being. Teachers' self-efficacy and professional identity are intricately intertwined (Marschall, 2022). High self-efficacy can enhance a teacher's professional identity (Xiaoyan, 2023). While a strong professional identity further boosts self-efficacy. This bidirectional interaction not only improves teaching effectiveness but also increases their professional accomplishment (Clark & Newberry, 2019)

The literature reveals that key factors such as successful teaching experience, fostering positive relationships with the school community, adaptability, confidence, the ability to overcome challenges, openness to innovation, and maintaining positive expectations and plans are all integral to enhancing teachers' self-efficacy. (For detailed information, please refer to the table in the attached document.)

2.3.6 Teachers' job satisfaction

The concept of job satisfaction was first introduced by Frederick W. Taylor in 1911 and was further developed and activated in 1990-91. Taylor proposed that rewards such as earnings, incentives, promotions, appreciation, and opportunities for advancement can enhance job satisfaction and motivation among employees (Taylor, 1911). Hoppock (1950) defined job satisfaction as employees' subjective feelings about the job itself, the work environment, and other related factors. Individuals with higher job satisfaction typically have a stronger sense of professional identity (Lu, Luo, Chen & Wang, 2019). Teachers' job satisfaction is closely linked to professional identity. Teachers with a strong sense of professional identity usually feel more satisfied and happy with their work because they perceive their work as meaningful and rewarding (Xu, Li, & Sun, 2023; Orta et al., 2021).

Job satisfaction reflects not only satisfaction with the work environment but also personal expectations and experiences (Tentama, Merdiaty, & Subardjo, 2021). Furthermore, Toropova, Myrberg, and Johansson (2021) established that the motivational beliefs of the teachers attributed to job satisfaction. motivated teachers

take pleasure in the act of teaching itself and feel a profound sense of satisfaction from their work. The author stressed that professional development was associated with self-efficacy and, thereby, job satisfaction. Additionally, the work environment was further established as an essential factor affecting job satisfaction. For instance, levels of teacher cooperation, work-life balance, cultural flexibility, and material resources contributed to the satisfaction. Interestingly, throughout the study, the factors associated with motivation and working environment have been repeated.

Job satisfaction is influenced by both intrinsic and extrinsic factors. Intrinsic factors include job comfort and job fulfillment. Job comfort refers to satisfaction with job conditions and circumstances, while job fulfillment is derived from personal accomplishments in meaningful aspects of the job (Evans, 1997). Additionally, intrinsic factors such as respect, recognition, job quality, and personal growth have a significant impact on teachers' job satisfaction (Baroudi et al., 2022). Extrinsic factors include salary, promotions, management, coworker behavior, training, and job security (Al-Asadi et al., 2019). A reasonable salary and benefits package are crucial factors affecting job satisfaction (Sahibzada & Khawrin, 2023). Moreover, a supportive work environment, good working conditions, and friendly coworker relationships positively influence job satisfaction (Bogler & Nir, 2012; Oubibi et al., 2022; Wahyudi, Febriani, & Triana, 2023).

Teachers' working conditions, including workload, cooperation, and perceptions of student discipline, are significantly related to job satisfaction (Toropova, et al., 2019). Interpersonal relationships are also found to be one of the most significant predictors of job satisfaction (Lopes & Oliveira, 2020).

Teacher job satisfaction is largely associated with organizational aspects, including improved work environments, employee well-being, and more effective performance. Research indicates that Teachers' job satisfaction correlates positively with effective interaction with colleagues, management satisfaction, parent satisfaction, student behavior satisfaction, and responsibility (Chalghaf & Guelmami, 2019).

Satisfaction with student behavior and parent interactions significantly impacts teachers' mental well-being (Leow, Lee, & Leow, 2020). Overall, both intrinsic factors such as respect, recognition, job quality, and personal growth, and extrinsic factors like salary, promotions, and management behavior, play crucial roles in determining teachers' job satisfaction (Baroudi et al., 2022; Bektaş, 2017; Haladu & Mohammed, 2021). Job stress and workload offer a contribution of to job satisfaction. Excessive job stress leads to high job dissatisfaction, due to high demands, workplace conflicts, and lack of clarity regarding assignments that can, in turn, affect employee job satisfaction (Judge, Zhang, & Glerum, 2020).

The survey conducted with 100 managers from different public and private universities in Islamabad and Rawalpindi found a positive correlation between working conditions, rewards, leadership and administrative support, and the job satisfaction of knowledge workers. Educational institutions should recognize and emphasize the role of working conditions, rewards, leadership support, and administrative support in order to integrate a learning culture that promotes knowledge sharing and ensures the satisfaction of knowledge workers (Bilal, 2012) .

Turkish researchers used a job satisfaction scale to measure the job satisfaction of teachers in six countries (Netherlands, United States, Russia, China, Italy, and Palestine). The scale included items such as 'satisfaction with co-workers' 'satisfaction with parents,' and 'satisfaction with students' behaviors.' (Uçar, 2023). Furthermore, Dicke et al. (2020) conducted a study on the job satisfaction of teachers in relation to student achievement and the climate. This study established that the disciplinary environment of the school contributes to the overall satisfaction of the teachers along with the compensation they receive. Subsequently, it was identified that various attributes of the work environment have been mentioned repeatedly. Similar mention has been found in studies investigating job satisfaction in developing countries and self-efficacy in the K-12 education system (Sahito & Vaisanen 2020; Ortan et al., 2021). These studies again illustrated the importance of the working environment associated with the job satisfaction of teachers. Furthermore, a study by

Dreer (2024) further connected the importance of positive emotion with job satisfaction. Most importantly, the positive emotions were related to motivation, accomplishments, professional development, and work environment. Similarly, Burić and Moe (2020) established the relationship between positive effects and job satisfaction. Thereby, the authors stressed that job satisfaction is driven by enthusiasm which in turn is influenced by motivation and environment. Similar findings have been attributed by Dreer (2024) establishing the characteristics of motivation, professional development, and work environment for satisfaction.

A survey study of 40 Iranian EFL teachers found that the job satisfaction is mostly affected by teaching load, principal leadership, autonomy and decision making, and intimacy and warmth factors. (Rezaee, Khoshsima, & Zare-Behtash, 2020) The study suggests that the higher the teachers' self-efficacy, the higher their job satisfaction. Conversely, the more barriers to professional development, the lower their job satisfaction (Renbarger & Davis, 2019).

In a study on the relationship between job satisfaction and job performance among teachers in Misamis Occidental, the authors pointed out that the factors influencing teachers' job satisfaction include supervision, colleagues, working conditions, pay, responsibility, the work itself, advancement, security, and recognition. These factors collectively determine overall job satisfaction (Baluyos et al., 2019).

In a survey of 511 German teachers' job satisfaction, the study investigates how well-being aspects such as (P) positive emotions, (E) engagement, (R) relationships, (M) meaning, and (A) achievement are linked to job satisfaction. The analysis of data from these teachers shows that higher scores in these PERMA factors are associated with higher job satisfaction. Among these factors, positive emotions contribute the most to predicting job satisfaction. The results suggest that teachers' well-being at work, especially having positive emotions, plays a crucial role in their job satisfaction and their likelihood of staying in their jobs (Dreer, 2024).

Baroudi, Tamim, and Hojeij (2020) identified several intrinsic and extrinsic factors influencing Teachers' job satisfaction in their study of teachers in Lebanon: Intrinsic Factors: Recognition, autonomy, challenge, and the nature of the work itself were found to have a greater influence on overall motivation when extrinsic job factors were met. Extrinsic Factors: Salary, job security, working conditions, and environment were significantly associated with employees' motivation and satisfaction (Baroudi & Tamim, 2020). Subsequently, another study by Lopes and Oliveira through its investigation, identified similar keywords associated with Teachers' job satisfaction. Primarily, the study contributed to accomplishments, salary (compensation), professional development, and work environment (Lopes & Oliveira, 2020).

In summary, teachers' job satisfaction is influenced by various factors, including intrinsic factors such as self-efficacy, job fulfillment, and personal growth, as well as extrinsic factors such as salary, working conditions, colleague support, and management behavior. These factors collectively determine overall job satisfaction and professional identity, which in turn affect their teaching effectiveness and student learning outcomes.

The literature indicates that factors such as satisfaction with the work environment, positive relationships with the school, colleagues, and students, satisfaction with earnings and salary, recognition and respect, career and promotion opportunities, non-monetary incentives, awards, students' behavior, and a sense of meaningful accomplishments are all closely tied to teachers' job satisfaction. (For detailed information, please refer to the table Appendix C)

2.4 Research Gap

Main research gaps can be identified regarding vocational education teachers' professional identity in Fujian Province, China. In summary, the current literature

reveals a gap in research on the professional identity of vocational education teachers in Fujian Province, particularly regarding experienced teachers and the specific context of higher vocational education colleges. Addressing these research gaps will contribute to a better understanding of vocational education teachers' professional identity and inform the development of effective strategies for teacher training and support in the region.

2.5 Conclusion

In summary, in China's vocational education, teachers are facing new development opportunities alongside the favorable policies proposed by the Chinese government in recent years, but they also face serious challenges. In this chapter, a comprehensive review of domestic and international literature was conducted, focusing mainly on the following aspects:

- 1) The research emphasizes the importance of vocational education. By analyzing reports and studies from international organizations such as the OECD and UNESCO, as well as research from various countries on vocational education, the key role of vocational education in addressing global challenges, promoting employment, and facilitating economic recovery is highlighted. Additionally, this section highlights the increasing emphasis placed by the Chinese government on vocational education and the attention paid to vocational education teachers. This perspective can be inferred from multiple laws, policies, and documents related to vocational education issued in China.

- 2) The study explores the concept, importance, and influencing factors of teachers' professional identity. It emphasizes the importance of teachers' professional identity in teacher development and improving teaching quality. Through an analysis of related theories, such as Communities of Practice and Sociocultural

Theory, it underscores the profound impact of teachers' professional identity on their self-identity, teaching practices, and career development.

3) A literature review was conducted on six factors that may influence teachers' professional identity: Self-perception of a teacher, Role of a teacher, Teachers' Performance, Competence in teaching. Teachers' self-efficacy, Teacher Job Satisfaction. It emphasizes that these six factors may have an impact on teachers' sense of identity.

The study identified gaps in existing research, including the lack of research on specific groups (such as teachers with teaching experience) and the need to construct a scale for measuring the professional identity of teachers in higher vocational colleges in Fujian Province. The literature review and analysis in this chapter not only identify gaps in the research but also clarify the value and significance of the research, providing solid theoretical support and practical guidance for effectively improving the professional identity of vocational school teachers



Chapter 3

Research Methodology

This chapter outlined the methodology employed with a mixed-method approach with quantitative and qualitative methods with complementary strengths and a comprehensive review. The quantitative component involved the random distribution of standardized surveys to teachers relating teachers' professional identity at higher vocational colleges in Fujian Province.

Descriptive and inferential statistical analyses of closed-ended survey questions, using Likert rating scales, will be employed to evaluate the constructs of teachers' professional identity at higher vocational colleges in Fujian Province.

Conversely, the qualitative component included semi-structured interviews with approximately 7 administrators with working experience not less than 5 years were purposively selected to confirm the six-factors constructs of teachers' professional identity at higher vocational colleges in Fujian Province.

These interviews aimed to confirm the validation of teachers' professional identity constructs that refer to indicating the influences of professional identity. Interview data was analyzed to identify common themes.

This approach aligned with a convergent parallel mixed-methods design, where quantitative and qualitative data were collected respectively and clarified during analysis to generate corroborative insights (Edmonds & Kennedy, 2016)

3.1 Quantitative Phrase

3.1.1 Population

In April 2024, the latest "2023 Annual Quality Report on Higher Vocational Education in Fujian Province" was published, revealing that by the end of 2023, there were 28,344 faculty and staff members in higher vocational colleges in Fujian Province. This number represents an increase of 2,944 from 2022, showing a growth rate of 11.59%.

Among these, the total number of full-time teachers was 22,319, constituting 78.74% of the total faculty and staff; this is an increase of 3,060 from the previous year, with a growth rate of 15.89% (Fujian Provincial Department of Education, 2024). The research population of this study were the full-time teachers in higher vocational colleges in Fujian Province of 22,319.

3.1.2 Samples

The current study encompassed a population of 22,319 professional teachers from higher vocational institutions in Fujian Province. It was essential to select an ideal sample from a sample frame that not only aligned with the research objectives and/or hypotheses but also addressed any potential limitations (Martínez-Mesa, Gozailez-Chica, Duquia, Bonamigo, & Bastos, 2016). This is because selecting a sample frame that satisfies these criteria is crucial to the validity and reliability of the research outcomes.

Table 3.1 The sample size of the known population.

N	S	N	S	N	S	N	S	N	S
10	10	100	80	280	162	800	260	2800	338
15	14	110	86	290	165	850	265	3000	341
20	19	120	92	300	169	900	269	3500	346
25	24	130	97	320	175	950	274	4000	351
30	28	140	103	340	181	1000	278	4500	354
35	32	150	108	360	186	1100	285	5000	357
40	36	160	113	380	191	1200	291	6000	361
45	40	170	118	400	196	1300	297	7000	364
50	44	180	123	420	201	1400	302	8000	367
55	48	190	127	440	205	1500	306	9000	368
60	52	200	132	460	210	1600	310	10000	370
65	56	210	136	480	214	1700	313	15000	375
70	59	220	140	500	217	1800	317	20000	377
75	63	230	144	550	226	1900	320	30000	379
80	66	240	148	600	234	2000	322	40000	380
85	70	250	152	650	242	2200	327	50000	381
90	73	260	155	700	248	2400	331	75000	382
95	76	270	159	750	254	2600	335	10000	384

Note N is Population Size; S is Sample Size.

Source: Krejcie & Morgan, 1970

In this study, stratified random sampling to select the samples. As Taherdoost (2017) has explained that through stratified random sampling, it is possible to ensure that the selected subjects are representative in terms of geographical location, school size, and teacher characteristics, which helps in the general applicability of the research results. Second, it helps reduce bias: Randomly selecting schools and teachers can reduce selection bias, enhancing the credibility of the research. Third, the method is simple to implement, easy to execute, and facilitates the management and monitoring of the sampling process.

To ensure the representativeness of the sample, while this study employs a stratified random sampling method the total sample size was 500 subjects. Initially, 10 out of the 50 higher vocational colleges in Fujian Province were randomly selected as the research sample. Subsequently, 50 teachers were randomly selected from each of these 10 schools as the sample. This sampling procedure was designed to ensure the diversity and representativeness of the sample, thereby better reflecting the overall situation of full-time teachers in higher vocational colleges in Fujian Province.

3.1.3 Measures

Before distributing the questionnaire, its validity was ensured by conducting the index of Item-Objective Congruence (IOC) with the five experts who were the scholars in the field of Education, and administrators of colleges.

A survey research design was employed using a self-developed questionnaire based on a comprehensive literature review. The newly developed scale aimed to comprehensively measure teachers' professional identity by assessing six-factors – Teachers' Self-perception, Teachers' Roles, Teachers' Performance, Teachers' Competence, Teachers' Self-efficacy, and Teachers' Job Satisfaction.

A five-point Likert scale ranging from Strongly Disagree (1) to Strongly Agree (5) was used to measure the factors influencing the teachers' professional identity of

higher vocational colleges in Fujian Province. Back translation from English to Chinese and Chinese to English was performed by two Language experts, then, the questionnaire was pretested with 30 non-samples of the teachers outside the sampling.

Cronbach alpha coefficient was calculated with values of 0.7 or higher indicate acceptable internal consistency, with the result of 0.964. Thus, the obtained value of 0.964 suggests a very high level of internal consistency for the scale, reflecting strong reliability in the measurement of the construct.

3.1.4 Research Instruments

Vocational College Teacher Professional Identity Scale

A self-developed questionnaire was employed for this study, designed based on a thorough review of the literature. This questionnaire was created to comprehensively measure the professional identity of teachers in higher vocational colleges in Fujian Province. The development process involved identifying key factors from the literature that are most relevant to the professional identity of teachers.

The questionnaire assesses the following factors:

- 1) Teachers' Perceptions: How teachers perceive and understand themselves as professionals.
- 2) Teachers' Roles: The various roles that teachers assume throughout their professional careers.
- 3) Teachers' Performance: The effectiveness with which teachers implement and manage their teaching responsibilities.

4) Teachers' Competence: The comprehensive knowledge, skills, and abilities teachers utilize in their teaching and professional practices.

5) Teachers' Self-Efficacy: Teachers' self-efficacy: Teachers' confidence in their ability to meet and achieve their teaching objectives.

6) Teachers' Job Satisfaction: Teachers' overall satisfaction with their job and work environment.

The questionnaire was validated through expert review and pilot testing, ensuring its reliability and validity for the main study.

Table 3.2 Teachers' Professional Identity Indicators for Higher Vocational College

Term	Definition
Teachers' Perceptions	Teachers' perceptions refers to their views and understanding of themselves, particularly in the context of teaching, at the present time. It includes their awareness of their teaching abilities, teaching style, and teaching methods, as well as their understanding of the roles they play and the impact they have in teaching. Teachers' self-perception can influence their teaching behavior, teaching effectiveness, and professional development.

Table 3.2 Teachers' Professional Identity Indicators for Higher Vocational College
(continued)

Term	Definition
Teachers' Roles	A teacher's positive recognition and appraisal of the importance of the "teacher role" to their self-concept, characterized by an individual's identification with and willingness to respond as a "teacher" to the question "Who am I?"
Teachers' Performance	Teacher performance generally refers to the abilities, behaviors, and actions demonstrated by teachers in teaching and student management. This includes teaching skills, instructional methods, classroom management abilities, ability to motivate students, teaching outcomes, and student learning achievements. The quality of teacher performance directly impacts student learning outcomes and the overall teaching quality of schools.
Teachers' Competence	Competence in teaching refers to the teaching ability or teaching quality of teachers, which is the ability and level demonstrated by teachers in the teaching process. This includes the knowledge, skills, attitudes, and values that teachers possess, as well as their performance and effects in teaching practice. Having good teaching competence means that teachers can effectively impart knowledge, stimulate students' interest in learning, manage the classroom, and provide effective learning support, thereby promoting students' learning and development.
Teachers' self-efficacy	Teachers' self-efficacy is defined as the belief or conviction that teachers hold about their ability to effectively execute the behaviors required to produce desired outcomes in their students' learning and engagement. This concept encompasses the teachers' confidence in their own teaching abilities, including organizing and executing instructional tasks, managing classroom dynamics, and fostering a positive learning environment. Teachers' self-efficacy significantly impacts teaching effectiveness, student outcomes, and the overall quality of education.

Table 3.2 Teachers' Professional Identity Indicators for Higher Vocational College
(continued)

Term	Definition
Teachers' Job Satisfaction	Teacher job satisfaction refers to the overall emotional feelings and perceptions that teachers have about their work, including the job itself, working conditions, and work environment. It encompasses their overall evaluation of various aspects of their job, such as salary, job security, working conditions, the nature of the work, management, and relationships with colleagues.

Higher Vocational College Teacher Professional Identity Questionnaire

Part 1: Respondent's demographic information

1) Gender, 2) Age, 3) The city where your school is located, 4) Type of school, 5) Education level, 6) Current professional title, 7) Years of work experience, 8) Income level, and 9) Teaching field.

Part 2: Teachers' identity

The factors of teachers' professional identity with the items of 6 variables:

- 1) Teachers' Perceptions, items 1-14;
- 2) Teachers' Roles, items 15-23;
- 3) Teachers' Performance, items 24-39;
- 4) Teachers' Competence, items 40-53;
- 5) Teachers' self-efficacy, items 54-62;
- 6) Teachers' Job satisfaction. items 63-73.

Table 3.3 The factors influencing the professional identity of teachers in higher vocational education colleges in Fujian Province, China.

Category	Items
Teachers' Perceptions	1. I think I am a competent teacher.
	2. I think I am able to teach.
	3. I think I have a good teaching style.
	4. I think I have good teaching methods.
	5. I receive positive feedback from my school.
	6. I receive positive feedback from my colleagues.
	7. I receive positive feedback from my students.
	8. I have a positive attitude toward my teaching career.
	9. I have high expectations for my career in the future.
	10. I have a positive self-concept.
	11. I have self-confidence.
	12. I have a positive self-image.
	13. I have strong teaching motivation.
	14. I have good teaching experience.
	15. I think I am a good educator.
	16. I think I am a good practitioner.
	17. I think I am a good evaluator.
Teachers' Roles	18. I think I am a good mentor.
	19. I think I am a good coach.
	20. I think I am a good motivator.
	21. I think I am a good trainer.
	22. I think I am a good researcher.
	23. I think I am a good learner.

Table 3.3 The factors influencing the professional identity of teachers in higher vocational education colleges in Fujian Province, China (continued)

Teachers' Performance	24. I can implement my teaching methods well.
	25. I can choose the appropriate methods for teaching.
	26. I am skillful in effectively implementing new teaching methods in my classes.
	27. I contribute to the academic development of my school.
	28. I am supportive of my school.
	29. I am supportive of my administrators.
	30. I am supportive of my leaders.
	31. I can manage my classes well.
	32. I can promote effective classroom engagement.
	33. I inspire a positive classroom atmosphere.
	34. I encourage a positive classroom environment.
	35. I provide my students with solid knowledge.
	36. I can always fulfill my duties.
	37. I can always achieve my goals.
	38. I actively engage in professional development by attending training programs.
	39. I actively engage in professional development by participating in the teaching supervision team.
	40. I am competent in my teaching knowledge.
	41. I am competent in my teaching skills.
	42. I am competent in my teaching methods.
	43. I am competent in my digital knowledge.
	44. I am competent in my digital skills.
	45. I am responsible for being competent.
	46. I motivate myself to become more competent.
	I have strong professional competence.

Table 3.3 The factors influencing the professional identity of teachers in higher vocational education colleges in Fujian Province, China (continued)

Teachers' Competence	47. I am competent in my teaching knowledge.
	48. I am competent in my teaching skills.
	49. I am competent in my teaching methods.
	50. I am competent in my digital knowledge.
	51. I am competent in my digital skills.
	52. I am responsible for being competent.
	53. I motivate myself to become more competent.
	54. I have strong professional competence.
	55. I am competent in integrating both soft and hard skills to complete my tasks.
	56. I have strong behavioral competence.
	57. I maintain a positive attitude towards my job.
	58. I have personality traits that help me fulfill my job effectively.
	59. I have strong self-regulation.
	60. I am competent in maintaining balance in my professional life.
	61. I am a successful teacher.
	62. I have a good relationship with my school.
	63. I have a good relationship with my colleagues.
	64. I have a good relationship with my students.
	65. I have strong adaptive abilities.
Teachers' Self-Efficacy	66. I can handle challenges effectively.
	67. I am open to innovation.
	68. I am positive about new plans.
	69. I can cope with obstacles.

Table 3.3 The factors influencing the professional identity of teachers in higher vocational education colleges in Fujian Province, China (continued)

Teachers' Job Satisfaction	70. I am satisfied with my work environment.
	71. I am satisfied with my school.
	72. I am satisfied with my colleagues.
	73. I am satisfied with my students.
	74. I am happy when appreciated.
	75. I am happy when respected.
	76. I am happy when my students do well.
	77. I am satisfied with the benefits and allowances provided by my job.
	71.I am satisfied with my salary.
	72.I am satisfied when I have the opportunity to be promoted in my career.
	73.I am satisfied with my accomplishments as a teacher.

3.1.5 Validity and Reliability of Quantitative Research

Wiersma and Jurs (2009) confirmed that validity indicated the generalizability of explaining the results of the research, and the reliability indicated the degree to which that research could be repeated, which applied to both research methods and research results. Content validity and internal consistency reliability affect the credibility of the research results. To ensure the accuracy and significance of this study, content validity and internal consistency reliability are discussed in this section before collecting the data.

3.1.5.1 Content Validity

Content validity is the extent to which the assessment instrument reflected the evaluated construct and are confirmed to support the validity of the evaluation of the implemented questionnaire (Van et al., 2003).

The assessment of content validity is conducted by selecting participants from a pilot group, so establishing the criteria for both sampling validity and item validity (Lodico et al., 2006).

Furthermore, content validity refers to the expert evaluation of the extent to which a measurement tool accurately captures the intended construct. The present study used the index of item objective congruence (IOC) to assess the validity.

Prior to distributing questionnaires to the sample, five experts will be invited to assess the index of Item-Objective Congruence (IOC) to ensure the validity of the questionnaire. The scales for verifying questionnaire items are as follows:

Scoring +1 = Certain that the test is congruent with the objectives or content.

Scoring 0 = Uncertain that the test is congruent with the objectives or content.

Scoring -1 = Certain that the test is NOT congruent with the objective or content.

$$IOC = \frac{\sum R}{N}$$

(3-1)

IOC = item-objective congruence index

R = point given by specialists

ΣR = total points of each specialist

N = numbers of specialists

The result of the IOC was 1.

Table3.4 Content Validity as Evaluated by Experts Item-Objective Congruence (IOC)

	Item – Objective congruence (IOC)
Demographic Information	1
Professional Identity of Vocational College Teachers in Fujian Province	1
Teacher Self-perception	1
Teacher's Roles	1
Teaching Performance	1
Teacher Self- Efficacy	1
Teachers' Job Satisfaction	1

3.1.5.2 Content Validity Reliability of Quantitative Research

In this study, Cronbach's alpha (CA) and composite reliability coefficient (CR) was applied to assess the study's reliability. The results of the Cronbach's alpha (CA) coefficient of the pilot study in order to guarantee the internal consistency reliability of the questionnaire will be calculated and reported. For a construct to be deemed reliable, the Cronbach's Alpha value associated with it should exceed 0.7

according to the following table. In this study, the result of the Cronbach Alpha Coefficient was 0.964

Table 3.5 The Rating Scale of Cronbach's alpha Cronbach (1951).

Cronbach's alpha	Internal Consistency
$\alpha \geq 0.9$	Excellent
$0.9 > \alpha \geq 0.8$	Good
$0.8 > \alpha \geq 0.7$	Acceptable
$0.7 > \alpha \geq 0.6$	Questionable
$0.6 > \alpha \geq 0.5$	Poor
$0.5 > \alpha$	Unacceptable

Source: Cronbach, 1951

3.1.6 Pre-test and Pilot Test

A pilot test will be conducted with 30 samples outside the target population. Accordingly, 30 teachers from higher vocational colleges in Fujian Province will participate in this pilot test for internal consistency reliability analysis. Three teachers from each target college will be selected for the pilot test to ensure the validity and internal consistency of the questionnaire.

3.1.7 Data Collection

From 50 vocational colleges in Fujian Province, 10 schools were randomly selected. The administrative staff at these schools were asked to assist in distributing questionnaires to a random sample of 50 full-time teachers from each school. Once the questionnaires were collected, a preliminary review was conducted to ensure

completeness, and any invalid or incomplete questionnaires were removed. The valid responses were then organized and coded using Microsoft Excel for further statistical analysis.

After data cleaning and coding, the dataset was imported into statistical software for in-depth analysis. This process included using descriptive statistics to summarize the data and inferential statistics to test the research hypotheses. Additionally, reliability and validity of the data were assessed using techniques like Cronbach's Alpha and Confirmatory Factor Analysis (CFA), ensuring the robustness of the research findings.

3.1.8 Data Analysis

In this study, statistical software will be used for data analysis, including descriptive statistics such as means, standard deviations, skewness, kurtosis, frequency, and percentages.

Additionally, the structural equation modeling tool SPSS will be utilized to analyze the data. The study will use Exploratory Factor Analysis (EFA) and Confirmatory Factor Analysis (CFA) to examine the relationships between latent variables and observed variables in the research.

3.1.8.1 Exploratory Factor Analysis (EFA)

Exploratory Factor Analysis (EFA) is a commonly used multivariate statistical method, specifically in social sciences, psychology, and instructional research study. EFA enables scientists to reduce a great deal of observed variables to a smaller sized set of unexposed aspects, streamlining data analysis and exposing underlying patterns (Reio & Shuck, 2015). This approach is specifically useful in the

initial stages of research to check out data frameworks and create theories. Before running CFA, Exploratory factor analysis (EFA) will be performed.

3.1.8.2 Confirmatory Factor Analysis (CFA)

Confirmatory factor analysis (CFA) is a statistical method used to test the hypothesis that a set of observed variables represent different dimensions or factors of a latent construct, where each observed variable loads onto only one factor, and the factors are correlated (Kline, 2011). Usually, Confirmatory Factor Analysis (CFA) is to determine whether the amount of the constructions and loadings for each of the observed variable are in accordance with what is anticipated in the hypotheses (Huang, 2020; Malhotra et al., 2004).

In employing CFA, the concerned assumptions are as follows:

1) Construct Validity

Construct validity is the degree to which an instrument accurately predicts the construct that will be examined (Bolarinwa, 2015). Construct validity is aimed at stability of the connection of convergent validity and less or no relationship for the discriminant validity (Ginty, 2020).

2) Convergent Validity

Convergent validity is the assessment of how numerous high-degree indices are related to a single construct (Churchill, 1979). Initially, a pilot study involving 50 teachers outside the sampling will be conducted to ensure the questionnaire's effectiveness. Feedback from these teachers will be used to refine and adjust the items to ensure they adequately cover the intended constructs.

3) Factor Loading

Factor loading, average extracted variance (AVE), and composite reliability (CR) are some of the conditions or indicators used to establish convergent validity. (Hamid, Sami, & Sidek, 2017). Factor loading, is to describe or explain the relationships between the observed variables. Acceptable factor loading value is typically above 0.4, the factor loading of 0.7 or higher is considered sufficient capture of the variance of the variable

4) Average Variance Extracted

AVE is a measure of the amount of variance that is captured by a construct in relation to the amount of variance due to measurement error. These conventional indices are formed by factor loadings resulting from estimated least squares or maximum likelihood regressions. (Dos Santos & Cirillo, 2023). The average variance extracted level should be greater than 0.50 to demonstrate an acceptable for convergent validity (Cheung, Cooper-Thomas, & Wang, 2024).

5) Composite Reliability

Composite Reliability is used to assess the internal consistency of correlated variables. According to Haji-Othman et al. (2022), a CR value between 0.60 and 0.70 is considered the minimum acceptable level of reliability, especially for exploratory research; a range between 0.70 and 0.90 indicates good internal consistency and is recommended for most studies.

When the CR value exceeds 0.90, although it shows a high correlation between variables, it may also suggest redundancy among the items. Therefore, ensuring a CR value above 0.70 guarantees the reliability of the model while avoiding the potential issues associated with excessively high CR values.

6) Discriminant Validity

Discriminant validity is assessed by comparing the correlation between constructs with their respective variances. According to Hair, Black, Babin, and Anderson (2010), discriminant validity ensures that the construct being examined is distinct with the correlation assessments of higher than or equal to two and the standard errors are less than 1.00, discriminant validity is present.

7) Goodness of Fit

Goodness of fit evaluates how well the hypothesized model matches the observed data (Hair et al., 2010). Key indices include CMIN/DF (≤ 3.0), RMSEA (< 0.05 for a good fit, < 0.08 acceptable), and CFI/TLI (≥ 0.90). GFI should also be ≥ 0.90 for a good fit, with values between 0.80 and 0.90 being acceptable

8) Absolute Fit Indices

The degree to which the study model fit the statistical data which includes Chi-Square Value to Degree of Freedom (CMIN/DF), Root Mean Square Error of Approximation (RMSEA), the Adjusted Goodness of Fit Index (AGFI), and the Ratio of the Goodness of Fit Index (GFI).

9) Chi-Square Value to Degree of Freedom

Chi-Square Value to Degree of Freedom (CMIN/DF) is a ratio that assesses model fit by dividing the chi-square statistic by the degrees of freedom, the index requirement of less than or equal to 3.00 is acceptable.

10) Goodness of Fit Index

Goodness of Fit Index (GFI) is a measure that indicates how well the hypothesized model fits the observed data, The observed covariance matrix of a GFI value ≥ 0.9 is a good fit, while $0.8 \leq \text{GFI} \leq 0.9$ is referred to as suitable fit or acceptable model.

11) Adjust Goodness of Fit Index

Adjusted Goodness of Fit Index (AGFI) adjusts the Goodness of Fit Index (GFI) for the number of parameters in the model, providing a more accurate measure of model fit. The number of indices for each statistical study construct that has an impact on goodness of fit, which is modified by the AGFI. A value of 0.90 or more is regarded as satisfactory for this weighted decision coefficient, which theoretically ranges from 0 (bad fit) to 1 (perfect fit)

12) Root Mean Square Error of Approximation (RMSEA)

RMSEA is a particular statistical indicator used to eliminate the sample size issues according to the diversities between the hypothetical matrix with the optimal arguments. The range of RMSEA should be between 0 and 1.00, with less than 0.05 is the suitable degree for the model fit (Tennant et al., 2012)

13) Incremental fit indices

Incremental Fit Indices (IFI) measure the improvement of the hypothesized model compared to the baseline model. The incremental fit indications show how closely the examined matrix resembles the baseline pattern with a good match that exceeds 0.9, however the index can go above 1 (Moss, 2009).

14) Comparative Fit Index

Comparative Fit Index (CFI) is a model fit index used to evaluate the goodness of fit of a hypothesized model in comparison to an independent model (where no relationships exist between the variables). The CFI scale runs from 0 to 1, with higher numbers indicating greater fit. In the past, model fitting was deemed good when the CFI value was 0.90 or higher (Bentler, 1990)

15) Normed Fit Index

NFI evaluates the goodness of fit of a model by comparing the chi-square value of the hypothesized model with that of an independent model (where all variables are uncorrelated). It should be above or equal to 0.90 for NFI (Hair et al., 2006).

3.2 Qualitative Phrase

3.2.1 Interviewees / Informants

The interviewees who will be interviewed to confirm the six-factors of professional identity of the vocational colleges in Fujian Province will be 7 administrators from vocational colleges in Fujian Province. The criteria used to verify those interviewees are that all of them must be head teachers who have been working in the higher vocational colleges in Fujian at least 5 years.

3.2.2 Measures

The interview items gained from the questionnaire results will be used to confirm the six-factors of professional identity of the vocational colleges in Fujian Province.

3.2.3 Semi-Structured Interview

Semi-structured interviews will be employed as the major qualitative data collecting method in the current study. The main reason behind the choice included its flexibility, allowing for a thorough study of the research questions from the viewpoints of vocational teachers in Fujian province. According to Marshall and Rossman (2014), the most crucial feature of the technique of the interviewer is to transmit the attitude drawing the responses or views that are meaningful and useful. The semi-structured method gives emphasis through an interview guide while allowing for deviations depending on individual replies (Brinkmann, 2014). This balance will be found most suitable for confirming vocational professional identity of teachers in Fujian Province. As Edmonds and Kennedy (2016) stated we do qualitative research when we wish to enable people to tell their stories. Allowing teachers to expound through open-ended conversation is likely to offer insights that would help create effective, context-specific professional identity constructs confirmation development.

The interview guide includes questions on essential themes determined through professional identity gained from the questionnaire. At the beginning of the interview the goal, structure, and expected length of the meeting will be mentioned to the participants. Participants will be also made aware that their responses and will be maintained as confidential and that they are allowed to decline any question. Following informed consent, the basic demographic questions will be asked before the major interview. The question sequence is from basic introduction topics to more specialized critical thoughts. Subsequently, flow is achieved by grouping related subjects together. During the interview, replies will be frequently summarized to ensure comprehension thus encouraging clarification or elaboration as appropriate.

Additionally, to prevent leading participants, all questions will be worded open-ended and nonjudgmental. A brief demographic survey will enhance the qualitative interview findings. Observations throughout the interview will be documented with field notes and reflective journaling immediately following to

document contextual elements and subjective observations. This approach adhered to suggestions for efficient semi-structured interview implementation, including guide preparation, recording, transcription, and iterative analysis (Brinkmann, 2014). The responsive nature will be intended to generate rich qualitative data on opinions, experiences, and developmental needs of the teachers to help improve professional identity. Therefore, the semi-structured interview will be articulated to obtain insights on the research objectives.

3.2.4 Data analysis and Content analysis

Qualitative data collected from interviews will be thematically examined to delve deeper into participants' viewpoints and encounters. By adopting these two strategies, a richer comprehension of the data is achieved, facilitating the formulation of conclusions that effectively meet the objective of the study in terms of confirmation of the constructs of Teachers' professional identity of higher vocational collage in Fujian Province.

In this part of the study, the researcher will delve into the personal experiences and stories of teachers to gain a deeper understanding of how they view professional identities of teachers in Fujian Province within educational roles and teaching practices. Thematic analysis is to scrutinize interview data and identify key themes that emerged. The following is the procedure of data analysis:

1) Familiarization with the Data: thoroughly reading all the interview transcripts to comprehensively understand the core ideas and patterns expressed by participants. This stage involved immersing myself in the data to abstract initial impressions and understandings;

2) Generating Initial Codes: detail coding of the text, marking segments directly relevant to the research questions. These initial codes serve as

preliminary categorizations that help condense key points from the complex information;

3) Searching for Themes: Integrate the initial codes into broader themes. This step involves comparing data across different interviews to identify common patterns or trends;

4) Reviewing Themes: In this step, examines the preliminary themes to ensure they accurately and comprehensively reflect the original dataset. If necessary, adjust or merge themes to better represent the data;

5) Defining and Naming Themes: After clearly delineating each theme, name them, ensuring that the names accurately reflected their meaning and the core concepts in the data; and

6) Producing the Report: Finally, to compose a detailed report that not only outlines the research methodology and analysis process but also elaborates on each theme with specific examples cited from the interviews.

7) Through this content and thematic analysis, a profound insight into confirming the teachers' professional identity constructs of higher vocational college in Fujian Province . Roles and teaching environments influence the construction of vocational teachers' professional identities. This understanding goes beyond simple statistical analysis, providing a more comprehensive view of the phenomena.

3.3 Ethical Concerns

3.3.1 Informed Consent

Process Obtaining informed consent was critical, particularly when exploring sensitive aspects of teachers' professional identities. All participants willingly gave their consent after being fully informed about the study's scope and their rights, including the option to withdraw at any point without consequence.

3.3.2 Confidentiality and Anonymity

Measures are taken to protect the privacy and anonymity of participants, given the sensitive nature of the data collected. This includes using pseudonyms and ensuring secure data storage and encryption to prevent unauthorized access.

These steps and considerations help ensure the ethical integrity of the study while protecting the rights of the participants and enhancing the credibility of the research findings.

This chapter outlines a mixed-method approach to investigate teachers' professional identity at higher vocational colleges in Fujian Province. The quantitative phase involves distributing standardized surveys to a sample of 500 teachers, selected through stratified random sampling. This includes measuring various constructs of professional identity, such as teachers' perception, teacher's roles, Teachers' Performance, Teachers' Competence, Teachers' self-efficacy, and Teachers' job satisfaction, using established scales and a five-point Likert scale. The reliability and validity of the survey will be assessed through Cronbach's alpha, factor analysis, and comparison with external standards. The qualitative phase involves semi-structured interviews with 7 experienced administrators to validate the constructs identified in the quantitative phase. This method provides deeper insights into the factors influencing

professional identity and ensures a comprehensive understanding of the constructs. The chapter emphasizes the integration of quantitative and qualitative data to offer a robust analysis of teachers' professional identity in the context of vocational education.



Chapter 4

Results of Data Analysis

This chapter presents the results of the data evaluation carried out to study the professional identity of vocational college teachers. The analysis includes detailed statistics to summarise the basic demographic information of the respondents, and then reliability and validity analyses are carried out to ensure the uniformity and accuracy of the measurement range.

Additionally, Exploratory Factor Analysis (EFA) was used to identify the underlying measurements of teacher professional identity, and Confirmatory Factor Analysis (CFA) was put on confirm the aspect structure recognized by EFA. These logical methods give a detailed understanding of the constructs determined in the research, permitting a comprehensive exploration of the factors that contribute to vocational college teachers' professional identity.

Furthermore, this phase consists of a two-fold strategy: quantitative analysis of the questionnaire information and qualitative evaluation of interview data. The quantitative analysis concentrates on the statistical analysis of the survey results to record the vital aspects of professional identity. The qualitative evaluation, based upon interviews, enhances these findings by providing much deeper insights right into teachers' individual experiences and perceptions. This dual approach improves the understanding of vocational college teachers' professional identity, combining numerical data with rich, narrative descriptions.

For quality, the adhering to table offers a list of the statistical acronyms and icons made use of throughout this phase.

Table 4.1 Symbols and Abbreviation of Statistics in Data Analysis

Term/Abbreviation	Full Term	Definition
$\bar{x}$	Mean	The arithmetic average of a set of values.
SD	Standard	The estimated standard deviation of a sample mean or another statistic.
p	p-value	A measure that indicates the probability of the observed result occurring by chance. A p-value less than 0.05 is considered statistically significant.
SE	Standard Error	The estimated standard deviation of a sampling distribution.
CR	Composite Reliability	Measures the internal consistency of the items in a scale.
CA	Cronbach's Alpha	A coefficient that indicates the reliability of a scale; values closer to 1 indicate higher reliability.
AVE	Average Variance Extracted	Assesses the amount of variance captured by a construct in relation to the variance due to measurement error.
χ^2	Chi-Square Test	Used to test the association between categorical variables, particularly in cases of frequency distribution
χ^2/df	Chi-Square to Degrees of Freedom Ratio	Measures model fit by dividing the chi-square statistic by the degrees of freedom. Lower values indicate a better model fit

Table 4.1 Symbols and Abbreviation of Statistics in Data Analysis (continued)

Term/Abbreviation	Full Term	Definition
RMSEA	Root Mean Square Error of Approximation	A measure of model fit, where lower values indicate better fit.
CFI	Comparative Fit Index	Compares the fit of a user-specified model to that of an independent model. Values closer to 1 indicate better fit.
TLI	Tucker-Lewis Index	An index for model fit that adjusts for model complexity, with values closer to 1 indicating better fit.
SRMR	Standardized Root Mean Square Residual	Measures the difference between observed and predicted correlations in a model. Lower values indicate better fit.
GFI	Goodness-of-Fit Index	Measures how well the model fits the observed data, with values closer to 1 indicating better fit.
AGFI	Adjusted Goodness-of-Fit Index	A version of the GFI adjusted for model complexity.
t	t-statistic	Used to determine if there is a significant difference between the means of two groups.
β	Beta Coefficient	Shows how much the dependent variable changes for each unit change in the independent variable
Summation	Σ (Summation)	The total sum of a set of values.
D-W	Durbin-Watson	A test statistic used to detect the presence of autocorrelation in the residuals of regression.
F-statistic	F-Statistic	Evaluates the overall significance of the regression model by comparing it to a baseline model.

Table 4.1 Symbols and Abbreviation of Statistics in Data Analysis (continued)

Term/Abbreviation	Full Term	Definition
R^2	R-Squared	Represents the proportion of variance in the dependent variable explained by the independent variables.
Adjusted R^2	Adjusted R-Squared	Adjusts R^2 for the number of predictors, giving a more accurate measure of model fit.
	Directional Relationships	Shows the cause-effect link between two variables.
	Correlations.	Measures the strength and direction of the relationship between two variables.
	Latent Variable	A hidden variable inferred from multiple observed indicators.
	Observed Variable	A directly measurable variable used to reflect or indicate the presence of a latent variable in a model.

4.1 Descriptive Analysis

4.1.1 Descriptive Analysis for the Demographic Characteristics

In this area, personal information from the 500 respondents, consisting of variables such as gender, years of job experience, revenue degrees, and instructional history, is presented via descriptive analysis. These group qualities give insight right into the distribution of participants throughout different groups, such as those with differing levels of teaching experience and revenue. This analysis aids to show the diversity of the participants and the possible effect these variables may have on teachers' professional identity and job satisfaction.

Table 4.2 The demographic information by percentage and frequency

(n=500)

Characteristics	All Respondents			
	Frequency	Percentage	Valid Percentage	Cumulative Percentage
Gender				
Male	195	39	39	39
Female	305	61	61	100
Age				
20-25	16	3.2	3.2	3.2
26-30	142	28.4	28.4	31.6
31-35	104	20.8	20.8	52.4
36-40	60	12	12	64.4
41-45	93	18.6	18.6	83
Over 46 years old	85	17	17	100
Your School is Located in				
Fuzhou	300	60	60	60
Xiamen	50	10	10	70
Sanming	50	10	10	80
Ningde	50	10	10	90
Putian	50	10	10	100

This study conducted a frequency analysis on the respondents' gender, age, and the city where their school is located. In terms of gender distribution, 61% of the respondents were female, while 39% were male. This indicates that the majority of the teachers in the sample were women.

Regarding age distribution, the largest group of respondents were aged between 26-30, accounting for 28.4%, followed by those aged 31-35, who made up

20.8% of the sample. Respondents aged 36-40 accounted for 12%, while those aged 41-45 represented 18.6%. The smallest group was respondents aged 20-25, who made up 3.2%, while 17% of the respondents were over 46 years old. Overall, the sample primarily consists of teachers in their late twenties to middle-aged.

In terms of the cities where the interviewees' schools are located, 60% of the interviewees work in schools in Fuzhou, and 10% each come from Xiamen, Putian, Ningde and Sanming. The proportion of interviewees from other cities is relatively low.

Table 4.3 Response Rate and Frequency Summary by School Type

(Multiple Choice Question)

Workplace Type	N	Response Rate (%)	Prevalence Rate (N=500)
General Higher Vocational College	400	80	80
National Key Higher Vocational College	50	10	10
National Model Higher Vocational College	50	10	10
Total	500	100	100

A descriptive analysis of the type of workplace of the respondents shows that, of the 500 valid responses, 400 respondents work in ordinary higher vocational colleges, while another 50 respondents indicated that they work in national key higher vocational colleges, and 50 respondents work in national exemplary higher vocational colleges. In summary, this analysis shows that most respondents work in ordinary higher vocational colleges, and a small proportion work in national key and exemplary higher vocational colleges.

Table 4.4 Descriptive Statistics of Respondents' Educational Level, Job Title, Work Experience, and Income.

Characteristics	All Respondents			
	Frequency	Percentage	Valid Percentage	Cumulative Percentage
Education Level				
Bachelor's Degree	161	32.2	32.2	39
Master's Degree	315	63	63	95.2
Doctoral Degree	24	4.8	4.8	100
Academic Title				
Assistant Lecturer	224	44.8	44.8	44.8
Associate Professor	129	25.8	25.8	70.6
Professor	135	27	27	97.6
	12	2.4	2.4	100
Years of Work Experience				
Less than 1 year				
1-5 years	53	10.6	10.6	10.6
6-10 years	173	34.6	34.6	45.2
11-15 years	58	11.6	11.6	56.8
16-20 years	62	12.4	12.4	69.2
Over 20 years	44	8.8	8.8	78
	110	22	22	100
Income Level				
(Per Month, RMB)				
Less than RMB 3,000	4	0.8	0.8	0.8
RMB 3,000 - RMB 5,999	97	19.4	19.4	20.2
RMB 6,000 - RMB 8,999	262	52.4	52.4	72.6
RMB 9,000 - RMB 11,999	106	21.2	21.2	93.8
RMB 12,000 - RMB 14,999	27	5.4	5.4	99.2
RMB 15,000 - RMB 19,999	4	0.8	0.8	100
RMB 20,000 or above	0	0	0	0

The majority of the respondents hold a Master's degree, accounting for 63% of the total sample. Respondents with a Bachelor's degree make up 32.2%, while those holding a Doctoral degree represent only 4.8%. Cumulatively, 95.2% of respondents possess at least a Master's degree, indicating a high level of education among the surveyed vocational college teachers.

In terms of academic title, Assistant Professors constitute the largest group, representing 44.8% of the total sample. Lecturers account for 25.8%, and Associate Professors represent 27%. Only 2.4% of the respondents hold the title of Professor. The cumulative percentages show that 70.6% of the respondents hold the title of Lecturer or higher, reflecting a relatively experienced and qualified teaching staff.

When analyzing the respondents' years of work experience, 34.6% of the respondents have worked between 1 and 5 years. Those with over 20 years of experience make up 22%, while respondents with 11-15 years of experience represent 12.4%. Only 10.6% of the respondents have less than 1 year of experience. The cumulative data show that 78% of respondents have more than 5 years of teaching experience, indicating that the majority of teachers surveyed have substantial professional experience in their respective fields.

The income distribution shows that more than half of the respondents (52.4%) earn between RMB 6,000 and RMB 8,999 per month. Additionally, 21.2% of respondents earn between RMB 9,000 and RMB 11,999, while 19.4% of respondents fall in the RMB 3,000 to RMB 5,999 range. Only a small proportion (5.4%) earn between RMB 12,000 and RMB 14,999, and less than 1% of respondents earn RMB 15,000 or above. These results suggest that the majority of teachers earn a moderate income, with a significant portion falling within the RMB 6,000 to RMB 11,999 range.

Table 4.5 Response Rate and Prevalence by Course Type

What Type of Courses Do You Teach?	N	Response Rate (%)	Prevalence Rate (N=500)
Professional Theory Courses	289	57.8	57.8
General Education Courses	117	23.4	23.4
Practical Courses	94	18.8	18.8
Total	500	100	100

The table presents a summary of the types of courses taught by the 500 surveyed teachers, categorized into professional theory courses, general education courses, and practical courses. A total of 289 respondents (57.8%) indicated that they teach professional theory courses, representing the highest response rate and prevalence rate. This suggests that a majority of the teachers focus on theoretical instruction related to their profession. General education courses were taught by 117 respondents (23.4%), indicating that a smaller but still substantial group of teachers are responsible for delivering foundational and interdisciplinary content to students. Practical courses, which focus on hands-on and applied training, were reported by 94 respondents (18.8%). This indicates that fewer teachers are involved in teaching courses directly aimed at developing students' practical skills.

Overall, the data demonstrates that the majority of the teachers are engaged in teaching professional theory courses, followed by those who teach general education and practical courses, respectively. The total response and prevalence rates confirm that all surveyed teachers have been accounted for across the three course types.

4.1.2 Descriptive Analysis

This section gives detailed data of the observed variables in the research, largely by computing the mean and standard deviation to show the distribution of the data. The mean reflects the main propensity of the info, which is the quantity of all rankings split by the overall variety of examples. The standard deviation evaluates the degree of discrepancy from the mean, showing the abnormality and diffusion of the data (Underhill & Bradfield, 2013). According to Bobbitt (2024), the analysis of mean and standard deviation is a vital step for further data processing and assessment.

This research study used the 5-point Likert Scales to evaluate the unexposed variables: Teachers' Perception, Teacher's Role, Teachers' Performance, Teachers' competence, Teacher Self-Efficacy, and Teacher's Job Satisfaction. The extent of the mean values for all the observed variables varies from 3.226 to 3.688, and the series of standard deviations is from 1.070 to 1.315.

Table 4.6 Descriptive Analysis of Each Construct

Construct	Items	$\bar{x}$	S.D.	Variance	Level of Agreement
Teachers' Perception (TP)	TP1	3.678	1.315	1.73	Agree
	TP2	3.496	1.237	1.529	Moderately Agree
	TP3	3.452	1.176	1.382	Moderately Agree
	TP4	3.376	1.103	1.217	Moderately Agree
	TP5	3.366	1.148	1.319	Moderately Agree

Table 4.6 Descriptive Analysis of Each Construct (continued)

Construct	Items	$\bar{x}$	S.D.	Variance	Level of Agreement
Teachers' Perception(TP)	TP6	3.422	1.100	1.21	Moderately Agree
	TP7	3.496	1.130	1.277	Moderately Agree
	TP8	3.606	1.222	1.494	Agree
	TP9	3.488	1.183	1.401	Moderately Agree
	TP10	3.504	1.194	1.425	Agree
	TP11	3.558	1.199	1.438	Agree
	TP12	3.432	1.215	1.476	Moderately Agree
	TP13	3.360	1.148	1.317	Moderately Agree
	TP14	3.518	1.230	1.513	Agree
	TR1	3.542	1.310	1.716	Agree
Teacher's Role (TR)	TR2	3.428	1.168	1.364	Moderately Agree
	TR3	3.414	1.134	1.285	Moderately Agree
	TR4	3.418	1.170	1.37	Moderately Agree
	TR5	3.468	1.195	1.428	Moderately Agree
	TR6	3.354	1.142	1.303	Moderately Agree

Table 4.6 Descriptive Analysis of Each Construct (continued)

Construct	Items	$\bar{x}$	S.D.	Variance	Level of Agreement
Teaching Performance (TPer)	TR7	3.418	1.164	1.354	Moderately Agree
	TR8	3.458	1.198	1.435	Moderately Agree
	TR9	3.338	1.148	1.318	Moderately Agree
	TPer1	3.550	1.280	1.639	Agree
	TPer2	3.458	1.138	1.295	Moderately Agree
	TPer3	3.420	1.134	1.286	Moderately Agree
	TPer4	3.470	1.178	1.388	Moderately Agree
	TPer5	3.522	1.177	1.384	Agree
	TPer6	3.560	1.194	1.425	Agree
	TPer7	3.560	1.222	1.493	Agree
	TPer8	3.512	1.158	1.341	Agree
	TPer9	3.506	1.153	1.329	Agree
	TPer10	3.466	1.131	1.279	Moderately Agree
	TPer11	3.498	1.192	1.421	Moderately Agree
	TPer12	3.534	1.120	1.255	Agree
	TPer13	3.644	1.236	1.528	Agree

Table 4.6 Descriptive Analysis of Each Construct (continued)

Construct	Items	$\bar{x}$	S.D.	Variance	Level of Agreement
Teachers' Competence (TC)	TPer14	3.444	1.144	1.309	Moderately Agree
	TPer15	3.534	1.213	1.472	Agree
	TPer16	3.546	1.218	1.483	Agree
	TC1	3.568	1.264	1.597	Agree
	TC2	3.466	1.137	1.294	Moderately Agree
	TC3	3.498	1.121	1.257	Moderately Agree
	TC4	3.384	1.110	1.231	Moderately Agree
	TC5	3.392	1.070	1.145	Moderately Agree
	TC6	3.642	1.245	1.549	Agree
	TC7	3.688	1.178	1.389	Agree
	TC8	3.592	1.246	1.553	Agree
	TC9	3.470	1.149	1.32	Moderately Agree
	TC10	3.604	1.201	1.442	Agree
	TC11	3.624	1.212	1.47	Agree
	TC12	3.558	1.172	1.373	Agree
	TC13	3.576	1.147	1.315	Agree
	TC14	3.452	1.139	1.442	Moderately Agree

Table 4.6 Descriptive Analysis of Each Construct (continued)

Construct	Items	$\bar{x}$	S.D.	Variance	Level of Agreement
Teacher Self-Efficacy (TSE)	TSE1	3.502	1.278	1.485	Agree
	TSE2	3.562	1.200	1.246	Agree
	TSE3	3.590	1.230	1.408	Agree
	TSE4	3.606	1.201	1.397	Agree
	TSE5	3.492	1.219	1.434	Moderately Agree
	TSE6	3.452	1.116	1.715	Moderately Agree
	TSE7	3.522	1.187	1.306	Agree
	TSE8	3.502	1.182	1.528	Agree
	TSE9	3.420	1.198	1.451	Moderately Agree
Teacher Job Satisfaction (TJS)	TJS1	3.546	1.31	1.715	Agree
	TJS2	3.454	1.143	1.306	Moderately Agree
	TJS3	3.476	1.236	1.528	Moderately Agree
	TJS4	3.422	1.204	1.451	Moderately Agree
	TJS5	3.582	1.221	1.49	Agree
	TJS6	3.604	1.255	1.574	Agree
	TJS7	3.588	1.277	1.63	Agree

Table 4.6 Descriptive Analysis of Each Construct (continued)

Construct	Items	$\bar{x}$	S.D.	Variance	Level of Agreement
	TJS8	3.268	1.125	1.267	Moderately Agree
	TJS9	3.226	1.105	1.221	Moderately Agree
	TJS10	3.55	1.252	1.567	Agree
	TJS11	3.496	1.21	1.465	Moderately Agree

4.1.2.1 Descriptive Analysis of Teachers' Perception (TP)

Based upon the data analysis, the mean ratings for teachers' understanding range from 3.360 to 3.678, with standard deviations between 1.100 and 1.315, suggesting that teachers usually hold a positive view of their teaching capabilities. Specifically, TP1 ("I think I am a good teacher", mean = 3.678, SD = 1.315) and TP8 ("I have a positive attitude toward my teaching career", mean = 3.606, SD = 1.222) scored higher, showing that teachers feel confident in their teaching abilities and professional attitude. In terms of acknowledgment from the school, colleagues, and students, TP5 (mean = 3.366, SD = 1.148), TP6 (mean = 3.422, SD = 1.100), and TP7 (mean = 3.496, SD = 1.130) showed moderate scores, indicating variability in teachers' perceived recognition in these areas. Regarding self-concept and self-confidence, TP10 (mean = 3.504, SD = 1.194) and TP12 (mean = 3.432, SD = 1.215) had relatively lower scores, reflecting teachers' positive assessment of their abilities, but with room for improvement in self-confidence.

Overall, teachers demonstrate a positive attitude toward their teaching profession and are motivated to improve, but further development in self-confidence and external recognition is needed.

4.1.2.2 Descriptive Analysis of Teacher's Role (TR)

Based on the data, the mean scores for Teacher's Role (TR) range from 3.338 to 3.542, indicating that teachers generally have a positive perception of their professional roles. Teachers show the highest confidence in their roles as educators (TR1) and motivators (TR5), suggesting they feel effective in educating and inspiring students. However, the scores for roles such as coach (TR6) and researcher (TR9) are relatively lower, reflecting that some teachers may feel less confident in these areas. The standard deviations, ranging from 1.134 to 1.310, indicate moderate variability in responses, suggesting that teachers' perceptions differ across roles. Overall, while teachers demonstrate solid confidence in key roles like educator and motivator, there is room for improvement in areas like coaching and research, highlighting potential opportunities for professional development. Teachers can further improve and professionalise their work in the field of subject research.

4.1.2.3 Descriptive Analysis of Teachers' Performance (TPer)

According to the data, teachers' teaching performance is generally positive, with an average score between 3.420 and 3.644 and a standard deviation between 1.120 and 1.280. Teachers report that they feel more confident in fulfilling their role as teachers (TPer13, mean = 3.644) and effectively implementing teaching methods (TP6er, mean = 3.560). However, the slightly lower scores in areas such as the proficient introduction of new teaching methods (TPer3, mean value = 3.420) and the consistent achievement of goals (TPer14, mean value = 3.444) indicate that there is still room for improvement. Overall, teachers actively participate in professional development activities (TPer12, TP16), but the responses differ slightly, indicating differences in personal confidence and engagement.

4.1.2.4 Descriptive Analysis of in Teachers' Competence (TC)

The data shows that teachers generally have a positive view of their teaching abilities, with mean scores between 3.4 and 3.7 and standard deviations from 1.070 to 1.264. Teachers feel confident in their responsibility, professionalism, and ability to integrate soft and hard skills (TC6, TC7, TC8). They also rate their teaching knowledge and skills highly (TC1, TC2), indicating a solid foundation in these areas.

However, their confidence is lower in IT skills (TC4, TC5) and self-management (TC14), suggesting room for improvement in these aspects. These areas could be targeted for future training to further enhance teachers' overall competence and self-efficacy.

4.1.2.5 Descriptive Analysis of Teacher Self-Efficacy (TSE)

The data show that teachers' scores for self-efficacy ranged from 3.420 to 3.606, with standard deviations of between 1.116 and 1.278. Teachers showed the strongest sense of self-efficacy in maintaining relationships with colleagues and institutions (TSE3, mean = 3.590, standard deviation = 1.230; TSE4, mean = 3.606, standard deviation = 1.201), reflecting a high level of confidence in these areas. On the other hand, self-efficacy in coping with obstacles and adapting to the environment inside and outside the classroom is relatively low (TSE6, mean = 3.452, SD = 1.116; TSE9, mean = 3.420, SD = 1.198), indicating areas for improvement.

The standard deviation (SD = 1.278) of TSE1 indicates that there is a wide range of perceptions among teachers regarding their ability to balance their professional and personal lives, with a large proportion of teachers believing that they are not doing a good enough job of balancing work and life. TSE6 (SD = 1.116), on the other hand, indicates that teachers' responses are more consistent. Overall, teachers' self-efficacy in most areas is relatively stable, but there is room for improvement in

specific areas such as balancing work and life and maintaining relationships with students.

4.2 Tests for Assumptions

4.2.1 Normality

The importance of normal distribution is undeniable since it is an underlying assumption of many statistical procedures (Yap & Sim, 2011). Normality is a fundamental assumption in parametric statistical tests, requiring the dataset to follow a normal distribution.

A normal distribution is symmetrical and bell-shaped, with most observations clustering around the mean. It is defined by two key parameters: skewness and kurtosis. Skewness measures the asymmetry of the data distribution, while kurtosis assesses the pointedness or flatness of the distribution relative to a normal curve (Demir, 2022)

It is also the most frequently used distribution in statistical theory and applications. Normality tests can be classified into tests based on chi-squared, moments, empirical distribution, spacings, regression and correlation and other special tests. (Yap & Sim, 2011).

These tests help determine whether the presumption of normality is valid, which is vital for precise statistical inference (Gupta, Mishra, Pandey, Singh, & Sahu, 2019). According to Cain, Zhang, and Yuan (2017), the optimal range for kurtosis worth exists between -2.000 and +2.000. Below is a recap of the statistical outcomes for skewness and kurtosis.

Table 4.7 Normality Evaluation

Items	N	Mean	Standard Deviation	Skewness		Kurtosi	
				statistic	standard error	statistics	standard error
1. I think I am a good teacher.	500	3.68	1.315	-.765	.109	-.568	.218
2. I think I can teach well.	500	3.50	1.237	-.415	.109	-.822	.218
3. I think I have a good teaching style.	500	3.45	1.176	-.386	.109	-.767	.218
4. I think my teaching methods are good.	500	3.38	1.103	-.353	.109	-.516	.218
5. I have been acknowledged of being a good teacher from my school.	500	3.37	1.148	-.407	.109	-.556	.218
6. I have been acknowledged of being a good teacher from my colleagues.	500	3.42	1.100	-.413	.109	-.425	.218
7. I have been acknowledged of being a good teacher from my students.	500	3.50	1.130	-.492	.109	-.437	.218
8. I have a positive attitude toward my teaching career.	500	3.61	1.222	-.542	.109	-.704	.218

Table 4.7 Normality Evaluation (continued)

Items	N	Mean	Standard Deviation	Skewness	Kurtosi	standard error	standard error
9. I always have a high expectation in my teaching career.	500	3.49	1.183	-.324	.109	-.797	.218
10. I believe I hold a positive self - concept.	500	3.50	1.194	-.446	.109	-.702	.218
11. I believe I have a positive self- image	500	3.56	1.199	-.540	.109	-.591	.218
12. I have a self-confidence.	500	3.43	1.215	-.342	.109	-.808	.218
13. I have had a good teaching experience.	500	3.36	1.148	-.265	.109	-.692	.218
14.As a teacher, I always motivate myself to do better.	500	3.52	1.230	-.460	.109	-.781	.218
15. I think I am a good educator.	500	3.54	1.310	-.656	.109	-.665	.218
16. I think I am a good practitioner	500	3.43	1.168	-.360	.109	-.711	.218
17. I think I am a good examiner.	500	3.41	1.134	-.424	.109	-.546	.218
18. I think I am a good mentor.	500	3.42	1.170	-.438	.109	-.608	.218
19. I think I am a good motivator.	500	3.47	1.195	-.426	.109	-.715	.218

Table 4.7 Normality Evaluation (continued)

	N	Mean	Standard Deviation	Skewness		Kurtosi	
Items	statistics	statistics	statistics	statistics	standard error	statistics	standard error
20. I think I am a good trainer.	500	3.35	1.142	-.343	.109	-.597	.218
21. I think I am a good coach.	500	3.42	1.164	-.379	.109	-.660	.218
22. I think I am a good apprentice.	500	3.46	1.198	-.406	.109	-.744	.218
23. I think I am a good researcher.	500	3.34	1.148	-.321	.109	-.656	.218
24. I can implement my teaching methods into my classes well.	500	3.55	1.280	-.632	.109	-.615	.218
25. I can choose the right teaching methods for any subjects.	500	3.46	1.138	-.359	.109	-.679	.218
26. I am skillful in implementing new teaching methods into my classes.	500	3.42	1.134	-.413	.109	-.533	.218
27. I help with school work.	500	3.47	1.178	-.445	.109	-.630	.218
28. I am supportive of any extracurriculum	500	3.52	1.177	-.449	.109	-.693	.218
29. I am supportive of my administrators.	500	3.56	1.194	-.504	.109	-.570	.218

Table 4.7 Normality Evaluation (continued)

Items	N	Mean	Standard Deviation	Skewness	Kurtosi	standard error	standard error
30. I am supportive of my school leaders.	500	3.56	1.222	-.513	.109	-.681	.218
31. I can properly manage my classes.	500	3.51	1.158	-.527	.109	-.478	.218
32. I can promote active participation in my classes.	500	3.51	1.153	-.460	.109	-.655	.218
33. I inspire a positive classroom atmosphere.	500	3.47	1.131	-.428	.109	-.493	.218
34. I reassure a positive classroom environment.	500	3.50	1.192	-.437	.109	-.727	.218
35. I can provide good knowledge to my students.	500	3.53	1.120	-.450	.109	-.510	.218
36. I can always fulfill my duties.	500	3.64	1.236	-.666	.109	-.521	.218
37. I can always achieve my goals.	500	3.44	1.144	-.373	.109	-.622	.218
38. I actively engage in diverse training programs for an effective professional development.	500	3.53	1.213	-.536	.109	-.629	.218

Table 4.7 Normality Evaluation (continued)

Items	N	Mean	Standard Deviation	Skewness	Kurtosi	
					statistics	standard error
39. I actively joining the teaching coach team for effective professional development.	500	3.55	1.218	-.462	.109	-.799
40. I am knowledgeable in my teaching career.	500	3.57	1.264	-.677	.109	-.511
41. I am competent and skillful in what I teach.	500	3.45	1.137	-.420	.109	-.649
42. I am competent in my teaching methods.	500	3.50	1.121	-.445	.109	-.536
43. I have good knowledge of IT.	500	3.38	1.110	-.386	.109	-.550
44. I am skillful in IT.	500	3.39	1.070	-.338	.109	-.491
45. I am a responsible teacher.	500	3.64	1.245	-.561	.109	-.752
46. I motivate myself to become a better teacher.	500	3.67	1.178	-.506	.109	-.707
47. I am always professional as a teacher.	500	3.59	1.246	-.551	.109	-.698

Table 4.7 Normality Evaluation (continued)

Items	N	Mean	Standard Deviation	Skewness	Kurtosi	standard error	standard error
48.I am good at integrating both soft and hard skills to complete my tasks.	500	3.47	1.149	-.480	.109	-.532	.218
49. I can perform my job well.	500	3.60	1.201	-.504	.109	-.692	.218
50.I maintain a positive attitude towards my job.	500	3.62	1.212	-.583	.109	-.644	.218
51.I have personality traits that help me fulfill my job effectively.	500	3.56	1.172	-.481	.109	-.670	.218
52. I can manage myself well.	500	3.58	1.147	-.480	.109	-.638	.218
53.I can balance both of the professional and personal life.	500	3.45	1.139	-.428	.109	-.506	.218
54. I am a successful teacher.	500	3.50	1.278	-.534	.109	-.767	.218
55.I am a good affiliate with my college.	500	3.56	1.200	-.482	.109	-.745	.218
56.I can maintain a good relationship with my colleagues.	500	3.59	1.230	-.562	.109	-.687	.218

Table 4.7 Normality Evaluation (continued)

Items	N	Mean	Standard Deviation	Skewness		Kurtosi	
					standard error		standard error
	statistics	statistics	statistics	statistics		statistics	
57.I can continue a good and professional relationship with my students.	500	3.61	1.201	-.530	.109	-.610	.218
58.I can adapt myself well both inside and outside the class.	500	3.49	1.219	-.488	.109	-.725	.218
59. I like to challenge myself to the fullest.	500	3.45	1.116	-.404	.109	-.524	.218
60. I am open to innovation.	500	3.52	1.187	-.518	.109	-.613	.218
61. I do not mind doing new things.	500	3.50	1.182	-.495	.109	-.573	.218
62. I can cope with obstacl	500	3.42	1.198	-.397	.109	-.759	.218
63. I am satisfied with my work environment.	500	3.55	1.310	-.703	.109	-.584	.218
64. I am satisfied with my job.	500	3.45	1.143	-.436	.109	-.495	.218
65. I am satisfied with my colleagues.	500	3.48	1.236	-.504	.109	-.752	.218
66. I am satisfied with my students.	500	3.42	1.204	-.531	.109	-.569	.218

Table 4.7 Normality Evaluation (continued)

Items	N	Mean	Standard Deviation	Skewness	Kurtosi		
	statistics	statistics	statistics	statistics	standard error	statistics	standard error
67. I feel grateful when being appraised.	500	3.58	1.221	-.553	.109	-.658	.218
68. I am happy when being respected.	500	3.60	1.255	-.588	.109	-.690	.218
69. I am happy when I can reassure my students' success.	500	3.59	1.277	-.551	.109	-.760	.218
70. I am satisfied with all the benefits and allowances my job provides me.	500	3.27	1.125	-.262	.109	-.646	.218
71. I am satisfied with my salary.	500	3.23	1.105	-.295	.109	-.568	.218
72. I am satisfied if I can achieve better opportunities in my career.	500	3.55	1.252	-.530	.109	-.744	.218
73. Overall, I am satisfied with my job as being a teacher.	500	3.50	1.210	-.477	.109	-.747	.218

In this study, normality analysis was conducted to determine whether the dataset conforms to the assumption of normal distribution, which is crucial for ensuring the validity of subsequent statistical analyses.

Skewness measures the symmetry of the data distribution. Negative skewness indicates that the data are skewed to the left, while positive skewness suggests that the data are skewed to the right. Among the 500 valid responses collected for this study,

the majority of the skewness values ranged from -0.7 to 0.5. Although some variables showed slight skewness, the overall distribution appeared relatively symmetrical. For example, the skewness of the variable "I believe I am a good teacher" was -0.765, suggesting that some respondents rated themselves somewhat conservatively, leading to a left-skewed distribution. However, skewness values within the range of -1 to 1 are generally considered acceptable, indicating that the data are not significantly skewed and remain fairly balanced.

Kurtosis, on the other hand, reflects the sharpness of the distribution and describes how concentrated the data points are around the mean. A kurtosis value close to 0 suggests that the distribution is similar to a normal distribution. In this study, most kurtosis values ranged between -0.2 and 0.8, indicating that the distributions of these variables were largely similar to a normal distribution. For instance, the kurtosis of the variable "I believe I have good teaching competence" was 0.822, indicating that the data were slightly concentrated around the mean, but without exhibiting extreme distribution patterns.

To further validate the normality of the data, the standard errors of skewness and kurtosis were also examined. The standard error for each variable was 0.218. Typically, when the absolute value of skewness or kurtosis exceeds twice the standard error (i.e., > 0.436), it is considered a significant deviation from normality. In this study, the skewness and kurtosis values for most variables fell within this threshold, indicating that the data largely adhered to a normal distribution.

Nevertheless, a few variables did show some deviation. For example, the skewness of the variable "I believe I am an excellent teacher" was -0.765, indicating that some respondents rated themselves more conservatively. On the other hand, the skewness of the variable "I believe I have good IT knowledge" was -0.342, indicating a slight right skew. These variances may reflect individual distinctions or cultural factors, which could be checked out additionally in subsequent analyses. Generally, most of variables in this study exhibited sensible normality.

4.2.2 Reliability and Validity Analysis

Integrity describes the level to which a dimension device returns regular outcomes under the same problems, reflecting the stability and consistency of the dimension. High dependability makes sure that the tool gives stable outcomes across numerous instances, decreasing random mistakes and improving the integrity of the info.

Cronbach's α coefficient is commonly utilized to examine interior consistency, with values over 0.70 generally taken into consideration proper and values over 0.80 showing fantastic reliability (Hair et al., 2019; Taber, 2018). Credibility evaluates whether the measurement instrument genuinely evaluates the designated construct, personifying the accuracy and importance of the measurement.

High trustworthiness makes sure that the instrument correctly tape-records the academic constructs it is designed to determine, reducing arranged mistakes and making the data appropriate for both scholastic growth and practical application (Creswell & Creswell, 2018). Finest techniques in scale development and recognition have been outlined in recent work, specifically in locations such as wellness, social, and habits research study (Boateng et al., 2018).

Validity screening is critical for verifying that a dimension tool relates to real-world contexts and theoretical structures. Therefore, current research studies highlight thoroughly testing validity to improve the accuracy and applicability of research tools.

Table 4.8 Value of Internal Consistency Reliability of all Respondents

Dimension	Items	Corrected Item-Total Correlation	Cronbach's Alpha If Item Deleted	Cronbach's Alpha
Teachers' Perception	TP1	0.906	0.971	0.974
	TP2	0.866	0.972	
	TP3	0.830	0.973	
	TP4	0.806	0.973	
	TP5	0.824	0.973	
	TP6	0.824	0.973	
	TP7	0.826	0.973	
	TP8	0.864	0.972	
	TP9	0.841	0.973	
	TP10	0.864	0.972	
	TP11	0.867	0.972	
	TP12	0.866	0.972	
	TP13	0.763	0.974	
	TP14	0.859	0.972	
Teacher's Roles	TR1	0.888	0.956	0.962
	TR2	0.841	0.958	
	TR3	0.843	0.958	
	TR4	0.855	0.957	
	TR5	0.838	0.958	
	TR6	0.854	0.957	

Table 4.8 Value of Internal Consistency Reliability of all Respondents (continued)

	TR7	0.842	0.958	
	TR8	0.833	0.958	
	TR9	0.789	0.960	
	TPer1	0.869	0.976	
	TPer2	0.837	0.976	
	TPer3	0.814	0.977	
	TPer4	0.842	0.976	
	TPer5	0.828	0.977	
	TPer6	0.849	0.976	
	TPer7	0.860	0.976	
Teachers' Performance	TPer8	0.830	0.977	0.978
	TPer9	0.858	0.976	
	TPer10	0.851	0.976	
	TPer11	0.854	0.976	
	TPer12	0.852	0.976	
	TPer13	0.850	0.976	
	TPer14	0.836	0.976	
	TPer15	0.847	0.976	
	TPer16	0.867	0.976	
	TC1	0.847	0.972	
	TC2	0.842	0.972	
	TC3	0.832	0.973	
Teachers' Competence				0.974

Table 4.8 Value of Internal Consistency Reliability of all Respondents (continued)

	TC4	0.805	0.973	
	TC5	0.794	0.973	
	TC6	0.866	0.972	
	TC7	0.848	0.972	
	TC8	0.873	0.972	
	TC9	0.853	0.972	
	TC10	0.856	0.972	
	TC11	0.862	0.972	
	TC12	0.850	0.972	
	TC13	0.858	0.972	
	TC14	0.822	0.973	
Teacher Self-Efficacy	TSE1	0.819	0.961	
	TSE2	0.863	0.959	
	TSE3	0.881	0.958	
	TSE4	0.845	0.960	
	TSE5	0.852	0.960	0.964
	TSE6	0.828	0.961	
	TSE7	0.859	0.959	
	TSE8	0.840	0.960	
	TSE9	0.854	0.960	
Teachers' Job Satisfaction	TJS1	0.885	0.962	0.967
	TJS2	0.839	0.964	

Table 4.8 Value of Internal Consistency Reliability of all Respondents (continued)

TJS3	0.841	0.964
TJS4	0.847	0.963
TJS5	0.880	0.962
TJS6	0.861	0.963
TJS7	0.842	0.964
TJS8	0.753	0.966
TJS9	0.718	0.967
TJS10	0.865	0.963
TJS11	0.873	0.963

Based upon the data, it can be concluded that the Cronbach's alpha was used to evaluate the internal consistency dependability of the 6 measurements of teacher professional identity. The outcomes show that Cronbach's alpha values for every dimension went beyond 0.9, indicating a high degree of interior consistency throughout all dimensions. Usually, a Cronbach's alpha value more than 0.70 is taken into consideration appropriate for reliability. However, in this research, all dimensions displayed alpha values well above this limit, with many worth approaching or exceeding 0.95, demonstrating outstanding interior consistency for the ranges.

For example, the Teacher Self-perception dimension had a Cronbach's alpha of 0.974, indicating a strong relationship between the things within this measurement. The corrected item-total correlations for each item were all above 0.7, showing that each item contributes well to the overall construct of this dimension. Similarly, the Teacher Roles dimension had a Cronbach's alpha of 0.962, and the Teachers' Performance dimension had an alpha of 0.978, both reflecting high internal consistency and demonstrating that the items reliably measure the corresponding constructs.

Other dimensions, such as Competence in Teaching (0.974), Teacher Self-Efficacy (0.964), and Teacher Job Satisfaction (0.967), also exhibited very high reliability, further strengthening the credibility of the measurement instrument. Specifically, within the Teacher Self-Efficacy dimension, items like TSE3 and TSE2 had corrected item-total correlations of 0.881 and 0.863, respectively, indicating high consistency among items. Removing these items would not significantly improve the reliability. Overall, Reliability analysis results showed that all constructs had Cronbach's Alpha values above 0.7, indicating good internal consistency.

Table 4.9 KMO and Bartlett's Test for Construct Validity

KMO		0.984
Approximate Chi-Square		44553.795
Bartlett's Test of Sphericity	df	2628.000
	P	0.000

Note When the p-value is smaller sized than an extremely little threshold, statistical software application might show it as 0. This suggests that the p-value is extremely small, but not that the real calculated value is 0.000.

Prior to conducting the Exploratory Factor Analysis (EFA), an analysis of the information's suitability for factor analysis was executed utilizing the Kaiser-Meyer-Olkin (KMO) step of testing competence and Bartlett's Test of Sphericity. EFA was picked as the technique to check out the hidden aspect framework and identify the concealed variables within the dataset.

The KMO value was 0.984, which is well above the typically accepted limit of 0.6. This suggests a solid connection among the variables, making the data extremely suitable for aspect evaluation. A KMO value near to 1 suggests a clear and strong structure within the data, with high inter-variable relationships, permitting EFA

to efficiently extract the underlying shared variables.

In addition, Bartlett's Test of Sphericity generated an approximate chi-square worth of 44,553.795 with 2,628 degrees of freedom, and a p-value of 0.000, which is statistically considerable. This outcome turns down the null hypothesis that the connection matrix is an identity matrix, further verifying that the information are appropriate for aspect evaluation. The considerable arise from Bartlett's examination recommends that the connections in between variables are not arbitrary but mirror a hidden variable framework. The results of the KMO and Bartlett's tests highly sustain the choice to proceed with EFA, as the data demonstrate the necessary high qualities for an extensive variable extraction procedure.

4.3 Confirmatory Factor Analysis of Data

Confirmatory Factor Analysis (CFA) presumes that researchers have a solid theoretical understanding of the structure of the concepts being examined. CFA has 2 major objectives: initially, to assess just how well a particular design fits the data; and 2nd, to approximate factor loadings, differences, covariances, and the recurring variations of the observed variables. All design fit indices are features of chi-square and levels of flexibility (Hox & Joop, 2021). Contrasted to Exploratory Factor Analysis (EFA), CFA is based on a pre-existing variation and concept, enabling scientists to hypothesize and prepare for the number of structures and the most correct theoretical model.

In the initial stage of this research, Exploratory Factor Analysis (EFA) was conducted to identify the key latent variables, which laid the foundation for constructing the CFA model. The EFA results indicated the extraction of six primary factors that collectively explained 76.863% of the total variance. Each factor had an eigenvalue greater than 1, demonstrating its statistical significance, with the first factor explaining 56.279% of the variance, showing its dominant role. These findings

supported the theoretical model and provided empirical evidence for further validation through CFA. To review the version fit in CFA, several healthy indices are made use of, including CMIN/df, GFI, AGFI, RMSEA, CFI, NFI, and TLI. These indices reveal how well the design's framework fits the observed data. All healthy indices are features of chi-square and levels of flexibility (Hox & Joop, 2021).

This research developed a theoretical model based on six concealed variables: "Teachers' Perception," "Teacher Role," "Teaching Performance," "Teacher Competence," "Job Satisfaction," and "Teacher Self-Efficacy." These variables represent essential factors influencing teachers' professional identity and performance in vocational education. The diagram listed below programs the CFA measurement model, describing the relationships between the latent variables (stood for by ellipses) and the observed variables (represented by rectangular shapes). The numbers next to the arrowheads in the diagram stand for factor loadings, suggesting the toughness of the relationship between each observed variable and its equivalent hidden variable. Double-headed arrowheads stand for covariances in between the concealed variables, exposing their correlations. Single-headed arrows represent the element loadings of the observed variables on their corresponding concealed constructs, assisting gauge each construct's contribution to the overall model.

The six unexposed variables associated with teachers' professional identity are originated from existing literatures and concept. The CFA can confirm these academic presumptions, guaranteeing that the model framework is valid in the context of vocational education and precisely catches the core elements of teachers' professional identity. Furthermore, CFA evaluates the partnerships in between unexposed and observed variables, guaranteeing that the measurement tools accurately reflect real attributes of the latent variables. This is critical for keeping the integrity and validity of the research findings. Moreover, by utilizing multiple fit indices such as CFI, RMSEA, and GFI, CFA can examine just how well the version fits the data, determining whether the model can be successfully applied in practice.

4.3.1 Goodness-of-Fit Indices

In Confirmatory Factor Analysis (CFA), examining variation fit is a crucial action to make sure that the design structure lines up with the observed information. Researchers should utilize numerous in shape indices, such as RMSEA, CFI, and TLI, to effectively assess the variation's performance (Brosseau-Liard et al., 2022; Mayrhofer & Hutmacher, 2021). Before conducting CFA, the results of EFA provided preliminary evidence for model fit. The high factor loadings and communalities in the EFA indicated a strong relationship between the observed variables and their latent variables.

These initial findings laid a solid foundation for CFA validation, ensuring that the research model is theoretically and empirically sound. To provide a thorough examination of the model fit, several healthy indices were examined. The Root Mean Square Error of Approximation (RMSEA), an action of the model's estimate error, must be listed below 0.08 for an acceptable variation fit, with worths below 0.05 suggesting an excellent fit (Brosseau-Liard et al., 2022). The Comparative Fit Index (CFI) and Tucker-Lewis Index (TLI) both evaluate the style fit relative to a void model, with values over 0.90 typically recommending a great fit (Mayrhofer & Hutmacher, 2021).

Table 4.10 Goodness-of-Fit Indices for the CFA Model

Categories	GOF Indices	Criteria	Result
Absolute Fit Indices	CMIN/DF	<3.00	2.517
	GFI	>0.80	0.735
	AGFI	>0.80	0.718
	RMSEA	<0.05	0.055
	CFI	>0.90	0.913
Incremental Fit Indices	NFI	>0.90	0.864

The design representing the relationships among variables related to teachers' professional identity demonstrates overall good fit. Especially, the outright fit index CMIN/DF is 2.517, which is listed below the standard value of 3.00, showing that the design fit is within an acceptable array. Although the GFI (0.735) and AGFI (0.718) are listed below the suitable requirement of 0.80, the RMSEA is 0.055, which falls within the acceptable range of 0.05 to 0.08. In terms of incremental fit indices, the CFI reaches 0.913, exceeding the benchmark of 0.90, indicating a good fit between the model and the data.

Despite the NFI being 0.864, slightly below the ideal value of 0.90, the strong performance of key indicators supports the model's validity. In summary, the model effectively reflects the relationships among variables related to teachers' professional identity. While some indices have room for improvement, the overall model is reliable and explanatory. To offer a clear illustration of the arise from the Confirmatory Factor Analysis (CFA), Figure 4.1 shows the partnerships in between latent variables and their observed indications. In the representation, the ellipses stand for the variables, such as "Teacher Self-perception" and "Teachers' Performance," while the rectangular shapes suggest the equivalent observed indications. The single-headed arrows reveal the variable loadings from the observed variables to the unexposed variables, and the double-headed arrowheads stand for the covariances between the unexposed variables.

The variable loadings show just how much each observed variable adds to its particular concealed construct, while the covariances suggest the strength of the connections between the latent variables. This model aesthetically mirrors the different dimensions of teachers' professional identity and validates the structural validity of the constructs. The observed variables are linked to the unrealized variables with variable loadings, and the element packing worth indicate just how well the observed variables describe their corresponding concealed variables. Higher factor loadings (usually higher than 0.7) recommend that the observed variables supply a strong explanation for the hidden variables.

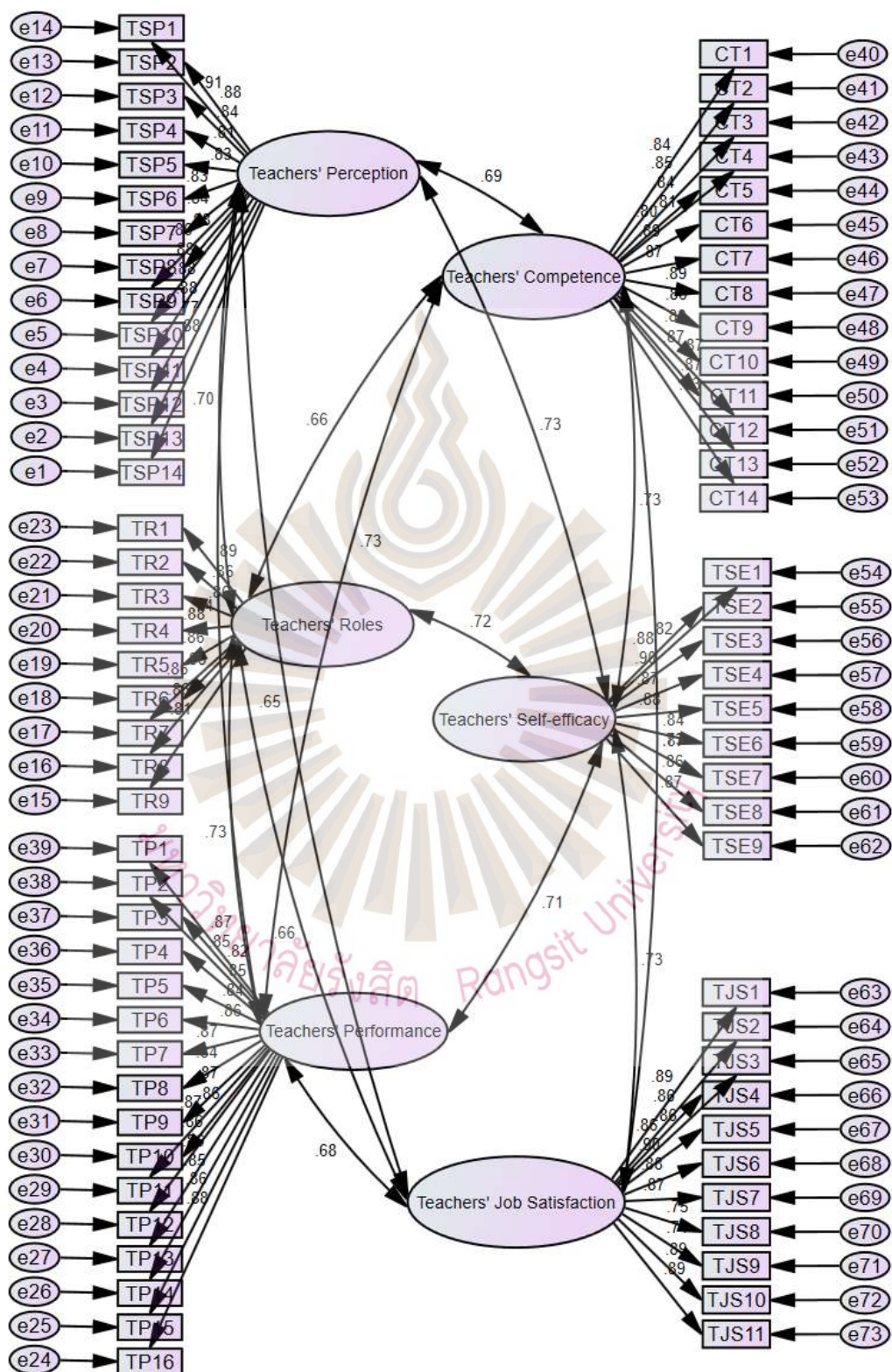


Figure 4.1 CFA Measurement Model

4.3.1.1 Teachers' Perception and its Correlation with Other Latent Variables

Teachers' understanding is a core measurement in shaping teachers' professional identity. Based on the CFA version, it has considerable correlations with Competence in Teaching (0.69). This recommends that teachers' perceptions of their capacities and their roles affect their overall competence and professional identity.

Teachers with a higher degree of self-perception have a tendency to show even more self-confidence in their teaching capacities. Hence, teachers' perception is not just an internal self-assessment, yet likewise plays a critical role in shaping their competence in teaching and role acknowledgment.

4.3.1.2 Teacher Roles and Their Correlation with Other Latent Variables

Teacher roles have a solid connection to both Teaching Performance (0.66) and Teacher Self-perception (0.66), indicating that as teachers' recognition of their roles increases, their teaching performance enhances, and their self-perception becomes extra favorable.

This connection suggests that how teachers regard their roles-- whether as teachers, critics, or advisors-- straight impacts their teaching performance and general identity as professionals.

4.3.1.3 Teachers' Performance and its Correlation with Other Latent Variables

Teachers' performance is affected by multiple variables, consisting of Teachers' Roles (0.66) and Job Satisfaction (0.71). The solid relationship with job

satisfaction suggests that teachers that carry out well in the class have a tendency to be much more satisfied with their jobs, highlighting the importance of performance fit professional gratification.

Additionally, teaching performance is additionally dramatically correlated with Competence in Teaching (0.73), revealing that teachers who are extra proficient tend to have far better performance results.

4.3.1.4 Teachers' Competence and its Correlation with Other Latent Variables

Teachers' competence is favorably correlated with Teacher Self-efficacy (0.73) and Teaching Performance (0.73). This highlights the fundamental role of competence in shaping teachers' self-confidence and performance in the class.

Teachers who have higher competence levels are more likely to handle class challenges successfully and show higher self-efficacy, bring about far better total teaching performance.

4.3.1.5 Teachers' Self-Efficacy and its Correlation with Other Latent Variables

Teachers' self-efficacy is highly related to their Teaching Competence (0.73) and Teaching Performance (0.67). This suggests that teachers that are positive in their teaching abilities are more likely to perform well in the classroom and deal with educational difficulties.

Additionally, self-efficacy is also associated with Job Satisfaction (0.66), showing that teachers that really feel reliable in their roles often tend to be a lot more completely satisfied with their tasks.

4.1.1.6 Teacher Job Satisfaction and its Correlation with Other Latent Variables

Job satisfaction is substantially correlated with Teaching Performance (0.71) and Competence in Teaching (0.73). Teachers who are a lot more qualified and execute well in the class tend to have higher job satisfaction.

Additionally, Self-efficacy (0.66) additionally contributes, as teachers who believe in their abilities are most likely to be satisfied with their work. These findings stress that enhancing teachers' professional identity and job satisfaction can be accomplished by improving their teaching competence, performance, and self-efficacy.

4.3.2 Convergent Validity and The Factor Loading Significance Analysis

4.3.2.1 Convergent validity

Convergent legitimacy is an essential aspect of construct validity, which examines how well a test gauges the theoretical construct it is meant to mirror (Gregory, 2007). Fundamentally, convergent validity recommends that tests designed to measure the same or closely associated constructs need to show strong correlations. Two key approaches are typically employed to analyze this sort of credibility (Chin & Yao, 2021).

Especially, it describes the level to which various indications or dimensions straighten in representing the same underlying construct. A high degree of merging is demonstrated when these indications reveal considerable covariance. Typically, Composite Integrity (CR) and Typical Difference Drawn Out (AVE) are made use of to examine convergent validity.

A CR value over 0.70 indicates strong inner consistency, while an

AVE value greater than 0.50 recommends that the construct clarifies over fifty percent of the variance in its indicators, both of which are required for establishing acceptable convergent legitimacy (Bagozzi et al., 1991; Schwab, 2005).

4.3.2.2 The Factor Loading Significance Analysis

The element filling significance evaluation is vital in confirmatory factor analysis (CFA) to examine the connection between observed variables and their underlying unexposed constructs. Variable loadings stand for the stamina of the relationship between these variables, with higher worths (normally > 0.7) indicating stronger partnerships. The analytical relevance of these variable loadings is examined using T-values and p-values, where a T-value above 1.96 and a p-value listed below 0.05 show that the factor loading is statistically considerable and adds meaningfully to the model (Hair et al., 2010; Kline, 2015).

At the EFA stage, we observed that most items had factor loadings greater than 0.7 and demonstrated high levels of communality. In the CFA, these items were again confirmed to have high factor loadings, consistent with the EFA results. This further confirmed the convergent validity of the model and the effectiveness of the item measurements.

This table provides a thorough analysis of the convergent credibility and factor loading significance for the constructs in the style. Beginning with convergent credibility, all hid variables reveal Composite Reliability (CR) worths over the limit of 0.70, indicating a high degree of inner uniformity amongst the observed variables within each construct. This recommends that the signs are relied on actions of their respective unexposed variables. Additionally, the Average Variance Extracted (AVE) values all go beyond 0.50, recommending that the hidden variables explain over half of the variation in their matching observed variables. This provides additional proof of sufficient convergent legitimacy for the style.

Table 4.11 Results of Convergent Validity and Factor Loading Significance

Observed Variable	Item	Factor Loading	S.E.	T-value	p	CR	AVE
TSP	TSP14	0.876					
	TSP13	0.771	0.037	22.200	***		
	TSP12	0.880	0.035	28.580	***		
	TSP11	0.883	0.034	28.787	***		
	TSP10	0.881	0.034	28.676	***		
	TSP9	0.858	0.035	27.137	***		
	TSP8	0.881	0.035	28.680	***	0.974	0.732
	TSP7	0.836	0.034	25.737	***		
	TSP6	0.830	0.033	25.388	***		
	TSP5	0.830	0.035	25.371	***		
	TSP4	0.814	0.034	24.465	***		
	TSP3	0.841	0.035	26.064	***		
	TSP2	0.879	0.035	28.500	***		
	TSP1	0.909	0.036	30.752	***		
TR	TR9	0.806					
	TR8	0.859	0.048	23.136	***		
	TR7	0.861	0.047	23.208	***		
	TR6	0.876	0.045	23.826	***	0.963	0.742
	TR5	0.859	0.048	23.137	***		
	TR4	0.876	0.046	23.826	***		
	TR3	0.861	0.045	23.231	***		
	TR2	0.862	0.047	23.274	***		

Table 4.11 Results of Convergent Validity and Factor Loading Significance.
(continued)

TP	TR1	0.891	0.052	24.473	***	0.978	0.7 34
	TP16	0.877					
	TP15	0.858	0.036	27.190	***		
	TP14	0.846	0.034	26.444	***		
	TP13	0.862	0.036	27.471	***		
	TP12	0.864	0.033	27.605	***		
	TP11	0.865	0.035	27.688	***		
	TP10	0.864	0.033	27.579	***		
	TP9	0.868	0.034	27.889	***		
	TP8	0.841	0.035	26.132	***		
	TP7	0.871	0.035	28.076	***		
	TP6	0.859	0.035	27.240	***		
	TP5	0.838	0.036	25.927	***		
	TP4	0.853	0.035	26.855	***		
	TP3	0.825	0.035	25.150	***		
	TP2	0.849	0.034	26.617	***		
TC	TP1	0.868	0.037	27.889	***	0.974	0.7 31
	TC1	0.841					
	TC2	0.851	0.037	24.735	***		
	TC3	0.842	0.037	24.320	***		
	TC4	0.810	0.037	22.766	***		
	TC5	0.796	0.036	22.159	***		

Table 4.11 Results of Convergent Validity and Factor Loading Significance.
(continued)

	TC6	0.886	0.039	26.574	***		
	TC7	0.866	0.038	25.510	***		
	TC8	0.890	0.039	26.817	***		
	TC9	0.862	0.037	25.284	***		
	TC10	0.876	0.038	26.060	***		
	TC11	0.873	0.038	25.896	***		
	TC12	0.866	0.037	25.525	***		
	TC13	0.871	0.036	25.783	***		
	TC14	0.832	0.037	23.833	***		
	TSF1	0.816					
	TSF2	0.882	0.041	24.732	***		
	TSF3	0.902	0.041	25.654	***		
	TSF4	0.873	0.041	24.315	***		
TSF	TSF5	0.876	0.042	24.425	***	0.964	0.750
	TSF6	0.841	0.039	22.940	***		
	TSF7	0.873	0.041	24.297	***		
	TSF8	0.857	0.041	23.584	***		
	TSF9	0.870	0.041	24.170	***		
	TJS1	0.886					0.728
TJS	TJS2	0.856	0.031	27.447	***	0.967	

Table 4.11 Results of Convergent Validity and Factor Loading Significance
(continued)

TJS3	0.859	0.033	27.656	***
TJS4	0.862	0.032	27.855	***
TJS5	0.901	0.031	30.808	***
TJS6	0.883	0.032	29.412	***
TJS7	0.867	0.034	28.221	***
TJS8	0.751	0.034	21.503	***
TJS9	0.715	0.034	19.821	***
TJS10	0.889	0.032	29.853	***
TJS11	0.892	0.031	30.123	***

Note SE=Standard Error, ***= $p < 0.001$; **= $p < 0.01$; *= $p < 0.05$.

Concerning the aspect loadings, all observed variables show loadings higher than 0.7, representing strong connections in between the observed variables and their associated hidden constructs. This highlights the effectiveness of these check in catching the scholastic frameworks they are intended to represent. Additionally, each aspect loading has a T-value significantly higher than 1.96, with p-values suggesting statistical value ($p < 0.001$). This confirms that these connections are not just solid yet similarly statistically significant.

Together, these results provide a resilient structure for the authenticity of the style, both in regards to the connections in between the observed variables and surprise constructs, as mirrored by the component loadings, and in the general harmony and helpful power of the constructs, as evidenced by the CR and AVE values. The statistical worth of the element loadings even more sustains the practicality of the chosen indications for determining their particular constructs. Therefore, the style can

be thought about both reputable and valid, making it appropriate for analyzing the connections in between these crucial constructs.

Discriminant validity checks whether a construct is really different from various other constructs (Franke & Sarstedt, 2019). It is needed due to the truth that it guarantees that concepts which must stand out from each various other remain in truth different when determined (Cheung & Lau, 2018). One normal method to test this is the Fornell-Larcker requirement, which contrasts the square root of a construct's Average Variance Extracted (AVE) to its connections with numerous other constructs. To confirm discriminant credibility, the square root of the AVE for a construct should be larger than its greatest connection with any other construct (Fornell & Larcker, 1981). An extra method, the Heterotrait-Monotrait (HTMT) ratio, is an additional present method for evaluating discriminant reliability. It is calculated by dividing the typical connections in between various constructs (heterotrait-heteromethod) by the normal connections within the very same construct (monotrait-heteromethod) (Henseler, Ringle, & Sarstedt, 2015).

Table 4.12 Discriminant Validity Assessment Matrix Based on the Fornell-Larcker Criterion

Correlation	TP	TR	TPer	TC	TSF	TJS
TP	0.856					
TR	0.688	0.861				
TPer	0.723	0.714	0.857			
CT	0.672	0.644	0.705	0.855		
TSF	0.705	0.696	0.677	0.694	0.866	
TJS	0.635	0.634	0.655	0.702	0.692	0.853

Note The diagonally listed values are the AVE square roots of the variables

Establishing discriminant credibility is necessary as it guarantees that each construct stands out and not simply revealing different other constructs. In the table,

the diagonal worths stand for the square roots of the Average Variance Extracted (AVE) for each construct, indicating the variation recorded by the construct from its signs. The non-diagonal worths show the relationships in between different constructs.

For instance, the AVE square favor TSP is 0.856, which surpasses its greatest correlation with various other constructs (0.723 with TP), showing great discriminant legitimacy for TSP. In a similar way, the AVE square favor TR is 0.861, which likewise surpasses its highest correlation (0.714 with TPer), showing the discriminant legitimacy of TR. The very same puts on TP, TC, TSF, and TJS, as their AVE square origins are all above their greatest relationships with other constructs. This verifies that all constructs fulfill the Fornell-Larcker standard, indicating that each construct in the design is independent and measures a distinctive principle.

4.3.4 Summary and Implications of CFA Results

The outcomes of the confirmatory factor analysis (CFA) suggest that the dimension design straightens reasonably well with the information. While some healthy indices, such as GFI and AGFI, autumn slightly listed below excellent degrees, essential indicators like CFI and RMSEA show an overall excellent model fit, successfully catching the partnerships between the constructs. The high factor loadings and significant T-values across all constructs likewise supply solid evidence of the design's interior uniformity and credibility. These outcomes suggest that the theoretical structure is robust and suitable for assessing teacher professional identity and its related measurements in the context of vocational education.

4.4 Difference Analysis

Difference analysis is an analytical technique used to acknowledge and describe substantial differences in between numerous groups or conditions. Such analyses help discover simply how various elements affect outcome and recognize

which variables have a considerable impact. This research carried out a difference evaluation based upon individuals' education level, gender, job title, age, and revenues, as detailed in the following table.

4.4.1 Gender Difference Analysis

Table 4.13 Gender Difference Analysis

	Your Gender		T	p
	(Mean $\pm$ Standard Deviation)			
	Male (n=195)	Female (n=305)		
Teachers’perception	3.417 $\pm$ 1.055	3.524 $\pm$ 1.010	-1.131	0.259
Teacher's Roles	3.353 $\pm$ 1.043	3.474 $\pm$ 1.031	-1.280	0.201
Teaching Performance	3.494 $\pm$ 1.007	3.528 $\pm$ 1.035	-0.362	0.717
Teachers’Competence	3.499 $\pm$ 1.017	3.556 $\pm$ 1.015	-0.614	0.539
Teacher’s Self-Efficacy.	3.462 $\pm$ 1.052	3.551 $\pm$ 1.065	-0.915	0.361
Teachers'Job Satisfaction	3.377 $\pm$ 1.070	3.536 $\pm$ 1.038	-1.646	0.100
Professional Identity	3.441 $\pm$ 0.888	3.530 $\pm$ 0.888	-1.094	0.274

Based upon the outcomes of the t-test evaluation, this research contrasted differences in between male and female teachers throughout several teaching-related measurements. The outcomes recommend that there were no statistically substantial distinctions between males and women in regards to "Teacher Self-Perception," "Teacher Role," "Teaching Performance," "Teaching Competence," "Teacher Self-Efficacy," "Job Satisfaction," and "Professional Identity" (p-values were all more than 0.05). This advises that gender does not have a substantial result on these teaching-related examination metrics.

4.4.2 Age Difference Analysis

Table 4.14 Age Difference Analysis

20-25 (n=16)	Age (Mean $\pm$ Standard Deviation)					F	p
	26-30 (n=142)	31-35 (n=104)	36-40 (n=60)	41-45 (n=93)	Over 46 (n=85)		
3.424 $\pm$ 0.911	3.496 $\pm$ 1.019	3.428 $\pm$ 0.986	3.468 $\pm$ 1.026	3.500 $\pm$ 1.128	3.528 $\pm$ 1.029	0.114	0.989
3.084 $\pm$ 0.967	3.436 $\pm$ 1.063	3.421 $\pm$ 0.958	3.347 $\pm$ 1.027	3.427 $\pm$ 1.133	3.539 $\pm$ 1.001	0.620	0.685
3.301 $\pm$ 0.910	3.515 $\pm$ 1.020	3.415 $\pm$ 1.009	3.450 $\pm$ 1.035	3.614 $\pm$ 1.066	3.615 $\pm$ 1.017	0.718	0.610
3.616 $\pm$ 0.589	3.510 $\pm$ 1.049	3.509 $\pm$ 0.931	3.492 $\pm$ 1.052	3.511 $\pm$ 1.156	3.642 $\pm$ 0.942	0.269	0.930
3.604 $\pm$ 0.857	3.570 $\pm$ 1.060	3.462 $\pm$ 1.023	3.571 $\pm$ 0.971	3.435 $\pm$ 1.189	3.530 $\pm$ 1.068	0.292	0.917
3.414 $\pm$ 0.913	3.508 $\pm$ 1.034	3.482 $\pm$ 1.036	3.382 $\pm$ 1.099	3.452 $\pm$ 1.182	3.508 $\pm$ 0.964	0.157	0.978
3.413 $\pm$ 0.642	3.506 $\pm$ 0.891	3.452 $\pm$ 0.843	3.453 $\pm$ 0.874	3.503 $\pm$ 1.016	3.568 $\pm$ 0.856	0.221	0.953

This study carried out an assessment of variation to check out differences throughout various teaching-related measurements among teachers of various age. The results suggested that there were no significant distinctions in ratings for self-perception, teacher role, teaching performance, teaching competence, self-efficacy, job satisfaction, and professional identity among the various age. This suggests that these teaching factors do not exhibit visible changes based upon the age of the teachers.

4.4.3 Education Level Difference Analysis

Table 4.15 Education Level Difference Analysis

	Education Level			F	p
	(Mean ± Standard Deviation)				
	Doctoral Students (n=24)	Undergraduate (n=161)	Master's Students(n=315)		
Teachers’perception	4.170±1.294	2.881±0.726	3.737±1.001	51.122	0.000
Teacher's Roles	4.088±1.435	2.848±0.737	3.672±1.007	45.743	0.000
Teaching Performance	4.096±1.359	3.074±0.773	3.696±1.032	26.150	0.000
Teachers’Competen ce	4.343±1.084	3.028±0.748	3.731±1.023	38.536	0.000
Teacher’s Self-Efficacy.	4.162±1.350	2.960±0.801	3.752±1.038	39.762	0.000
Teachers’Job Satisfaction	4.140±1.336	3.098±0.799	3.616±1.085	19.262	0.000
Professional Identity	4.171±1.241	2.990±0.417	3.702±0.919	49.658	0.000

The analysis demonstrates that instructional level has a significant impact on teacher self-perception, roles, performance, competence, self-efficacy, job satisfaction, and professional identity. Doctoral students tend to score higher in these locations compared to their undergraduate and master's equivalents. This recommends that sophisticated education may add to more favorable self-assessments and perceptions in teaching-related elements.

4.4.4 Academic Title Difference Analysis

Table 4.16 Academic Title Difference Analysis

	Title (Mean $\pm$ Standard Deviation)				F	p
	Associate Professor (n=135)	Teaching Assistant (n=224)	Professor (n=12)	Lecturer (n=129)		
Teachers' Perception	3.988 $\pm$ 1.209	3.029 $\pm$ 0.767	4.042 $\pm$ 1.236	3.688 $\pm$ 0.858	33.883	0.000
Teacher's Roles	3.977 $\pm$ 1.207	2.966 $\pm$ 0.780	3.983 $\pm$ 1.375	3.599 $\pm$ 0.829	36.063	0.000
Teaching Performance	4.081 $\pm$ 1.143	3.110 $\pm$ 0.750	3.880 $\pm$ 1.427	3.591 $\pm$ 0.956	30.885	0.000
Teachers' Competen ce	4.048 $\pm$ 1.172	3.116 $\pm$ 0.777	4.298 $\pm$ 0.949	3.651 $\pm$ 0.891	32.126	0.000
Teacher's Self-Efficacy.	4.062 $\pm$ 1.229	3.064 $\pm$ 0.805	4.148 $\pm$ 1.098	3.674 $\pm$ 0.911	33.357	0.000
Teachers' Job Satisfaction	3.974 $\pm$ 1.159	3.040 $\pm$ 0.867	4.046 $\pm$ 1.312	3.652 $\pm$ 0.892	29.642	0.000
Professional Identity	4.026 $\pm$ 1.095	3.061 $\pm$ 0.491	4.062 $\pm$ 1.162	3.641 $\pm$ 0.778	46.740	0.000

The analysis reveals clear distinctions in teaching-related locations based upon scholastic titles. For instance, Associate Professors and Professors tend to rate themselves higher in aspects like self-perception and teaching performance compared to Teaching Assistants and Lecturers. Particularly, Associate Professors have a mean self-perception score of 3.988, while Teaching Assistants score just 3.029. Likewise, Professors excel in teaching performance with a score of 4.081, whereas Teaching Assistants score lower at 3.110. These distinctions, supported by considerable F-values and p-values, recommend that higher scholastic ranks are associated with more favorable self-assessments and professional experiences.

4.4.5 Years of Work Experience Difference Analysis

Table 4.17 Analysis of Differences by Years of Work Experience

	Years of Work Experience (Mean $\pm$ Standard Deviation)						F	p
	1-5years (n=173)	11-15years (n=62)	16-20years (n=44)	6-10years (n=58)	Less than 1 year (n=53)	More than 20 years (n=110)		
Teachers' Perception	2.817 $\pm$ 0.694	4.926 $\pm$ 0.124	3.113 $\pm$ 0.77	4.498 $\pm$ 0.52	2.219 $\pm$ 0.10	3.936 $\pm$ 0.33	251.613	0.000
Teacher's Roles	2.771 $\pm$ 0.767	4.941 $\pm$ 0.163	3.056 $\pm$ 0.722	4.329 $\pm$ 0.481	2.351 $\pm$ 0.856	3.795 $\pm$ 0.347	180.307	0.000
Teaching Performance	2.840 $\pm$ 0.713	4.970 $\pm$ 0.069	3.510 $\pm$ 0.549	4.456 $\pm$ 0.415	2.115 $\pm$ 0.588	3.936 $\pm$ 0.288	276.572	0.000
Teachers' Competence	2.908 $\pm$ 0.746	4.935 $\pm$ 0.118	3.306 $\pm$ 0.538	4.502 $\pm$ 0.399	2.175 $\pm$ 0.722	3.963 $\pm$ 0.207	239.963	0.000
Teacher's Self-Efficacy.	2.773 $\pm$ 0.758	4.964 $\pm$ 0.108	3.270 $\pm$ 0.660	4.585 $\pm$ 0.446	2.361 $\pm$ 0.852	3.963 $\pm$ 0.234	220.943	0.000
Teachers' Job Satisfaction	2.789 $\pm$ 0.785	4.866 $\pm$ 0.194	3.211 $\pm$ 0.734	4.453 $\pm$ 0.421	2.212 $\pm$ 0.781	3.965 $\pm$ 0.275	201.721	0.000
Professional Identity	2.824 $\pm$ 0.172	4.935 $\pm$ 0.072	3.263 $\pm$ 0.106	4.472 $\pm$ 0.296	2.220 $\pm$ 0.373	3.931 $\pm$ 0.199	1632.426	0.000

The analysis of teaching-related aspects by years of work experience reveals significant differences. Teachers with 11-15 years of experience normally have the

greatest ratings throughout all dimensions, such as self-perception, roles, and teaching performance.

For example, those with 11-15 years of experience score 4.926 in self-perception compared to just 2.817 for those with 1-5 years of experience. Similarly, teachers with over 20 years experiences also show strong performance, but not as pronounced as those with 11-15 years.

On the other hand, teachers with less than 1 year of experience tend to score lower across the board. For example, they rate their teaching performance at 2.115, significantly lower than the 4.970 reported by those with 11-15 years of experience.

These findings highlight a clear trend: more years of experience tend to correlate with better self-assessment, professional roles, and overall teaching effectiveness. The substantial F-values and significant p-values support that the years of experience play a crucial role in shaping these outcomes.

4.4.6 Income Level Difference Analysis

The analysis reveals that income level does not have a significant impact on various teaching-related factors, including self-perception, roles, performance, competence, self-efficacy, job satisfaction, and professional identity.

Despite variations in income across different brackets, the statistical results indicate no significant differences in these aspects (all p-values > 0.05). This suggests that teachers' professional experiences and analyses are fairly constant despite their income degree.

Table 4.18 Income Level Difference Analysis

	Income level (after-tax monthly salary) (Mean ± Standard Deviation)						F	p
	12,000-14,999 CNY (n=27)	15000-19999 CNY (n=4)	3000-5999 CNY (n=97)	6000-8999 CNY (n=262)	9000-11999 CNY (n=106)	少于 3000CNY (n=4)		
Teachers' perception	3.196±1.060	3.768±1.311	3.362±1.064	3.514±1.000	3.551±1.049	4.180±0.651	1.259	0.280
Teacher's Roles	3.354±1.061	3.555±1.419	3.380±0.949	3.432±1.037	3.465±1.097	3.527±1.431	0.116	0.989
Teaching Performance	3.327±1.124	3.783±1.131	3.494±0.915	3.452±1.072	3.714±0.954	3.875±0.904	1.346	0.243
Teachers' Competence	3.623±0.874	4.230±0.736	3.421±1.033	3.515±1.021	3.619±1.020	3.930±1.177	0.943	0.452
Teacher's Self-Efficacy.	3.523±0.982	3.583±1.168	3.471±1.033	3.522±1.056	3.524±1.124	3.945±1.163	0.171	0.973
Teachers' Job Satisfaction	3.243±0.985	3.593±1.408	3.438±1.070	3.476±1.045	3.565±1.037	3.253±1.916	0.485	0.787
Professional Identity	3.374±0.873	3.785±1.070	3.429±0.847	3.486±0.902	3.588±0.891	3.818±1.069	0.631	0.676

4.4.7 Summary of Difference Analysis

The evaluation shows that instructional degree and job title have a considerable impact on several teaching-related dimensions, consisting of teacher self-perception, roles, performance, and professional identity. Doctoral trainees and those with differing job titles presented unique differences in these areas. On the other hand, elements such as gender, age, and income degrees did disappoint a substantial impact on these metrics. This suggests that academic background and job role have a more pronounced influence on teaching experiences and perceptions.

4.5 Correlation Analysis of Data

Correlation evaluation is an analytical method utilized to examine the stamina of connection in between 2 measurable variables. The step of correlation coefficient (r or R) supplies information on closeness of 2 variables.(Filzmoser, 2009). A high correlation means that two or more variables have a strong relationship with each other, while a weak correlation means that the variables are hardly related. In other words, it is the process of studying the strength of that relationship with available statistical data.(Franzese,2018).

To further explore the relationships between the dimensions of teachers' professional identity, this study conducted a correlation analysis. This analysis helps assess the strength and direction of the relationships between the latent variables, thereby providing additional support for the validity of the model.

Table 4.19 Correlation Coefficients Between Latent Variables

The Pair of the Latent Variables			Correlation Coefficient
Teachers' perception	<—>	Teacher's Roles	0.688
Teachers' perception	<—>	Teaching Performance	0.723
Teachers' perception	<—>	Competence in Teaching	0.672
Teachers' perception	<—>	Teacher Self-Efficacy.	0.705
Teachers' perception	<—>	Teachers' Job Satisfaction	0.635
Teachers' perception	<—>	Professional Identity	0.868
Teacher's Roles	<—>	Teaching Performance	0.714
Teacher's Roles	<—>	Competence in Teaching	0.644
Teacher's Roles	<—>	Teacher Self-Efficacy.	0.697
Teacher's Roles	<—>	Teachers' Job Satisfaction	0.634
Teacher's Roles	<—>	Professional Identity	0.834
Teaching Performance	<—>	Teacher's Competence	0.705
Teaching Performance	<—>	Teacher Self-Efficacy.	0.677
Teaching Performance	<—>	Teachers' Job Satisfaction	0.655
Teaching Performance	<—>	Professional Identity	0.887
Teacher's Competence	<—>	Teacher's Competence	0.695
Teacher's Competence	<—>	Teachers' Job Satisfaction	0.702
Teacher's Competence	<—>	Professional Identity	0.867
Teacher Self-Efficacy.	<—>	Teachers' Job Satisfaction	0.692
Teacher Self-Efficacy.	<—>	Professional Identity	0.85
Teachers' Job Satisfaction	<—>	Professional Identity	0.832

The data reveals significant positive correlations between teachers' professional identity and several key variables. Teachers' self-perception shows notable correlations with teacher roles, teaching performance, teaching competence, teacher self-efficacy, job satisfaction, and professional identity, with values ranging from 0.635 to 0.868. The strongest correlation is between self-perception and

professional identity (0.868), while the weakest is between self-perception and job satisfaction (0.635).

Teacher roles also demonstrate strong relationships with teaching performance, teaching competence, and self-efficacy, with the highest correlation observed between teacher roles and professional identity (0.834). Teaching performance, in particular, has the highest correlation with professional identity (0.887), suggesting its critical influence on how teachers view their professional identity. Teaching competence is similarly correlated with other variables, with most values around 0.7.

In summary, the strong positive correlations between professional identity and the other variables highlight the central role professional identity plays in shaping teachers' perceptions of themselves and their professional responsibilities.

4.6 Linear Regression Analysis of Data

Linear regression is used to find a linear relationship between one or more predictors. The linear regression has two types: simple regression and multiple regression (Maulud & Abdulazeez, 2020). Linear regression analysis is commonly applied for prediction, trend analysis, and decision optimization (Gujarati, 2003; Wooldridge, 2009; Hair et al., 2014).

This study investigates the influence of several factors on Professional Identity using linear regression analysis. The model indicates that Teacher Self-perception, Teacher's Roles, Teaching Performance, Competence in Teaching, Teacher Self-Efficacy, and Teacher Job Satisfaction all have a significant positive impact on Professional Identity. The detailed regression analysis findings are presented in the following table.

Table 4.20 Linear Regression Analysis Results of Teacher's Perception (n=500)

	Unstandardized Coefficients		Standardized Coefficients	t	p	Collinearity Diagnostics	
	β	Std. Error	Beta			VIF	Tolerance
Constant	0.884	0.070	--	12.672	0.000	-	-
Teacher's perception	0.750	0.019	0.868	39.023	0.000	1.000	1.000
R^2	0.754						
Adjusted R^2	0.753						
F	F(1,498)=1522.801,p=0.000						
D-W	1.797						
DV: Professional Identity							

Note * $p < 0.05$ ** $p < 0.01$

The linear regression analysis results show that Teacher's perception has a strong positive influence on Professional Identity. The model explains 75.4% of the variance ($R^2 = 0.754$, Adjusted $R^2 = 0.753$), demonstrating a strong fit. The standardized Beta coefficient of 0.868 indicates a significant impact. Furthermore, the Variance Inflation Factor (VIF) of 1.000 suggests no multicollinearity problems, guaranteeing stability in the model. The Durbin-Watson statistic of 1.797 programs no substantial autocorrelation, verifying the reliability of the outcomes.

Table 4.21 Linear Regression Analysis Results of Teacher's Roles (n=500)

	Unstandardized Coefficients		Standardized Coefficients	t	p	Collinearity Diagnostics	
	β	Std. Error	Beta			VIF	Tolerance
Constant	1.047	0.076	-	13.782	0.000	-	-
Teacher's Roles	0.715	0.021	0.834	33.688	0.000	1.000	1.000
R^2	0.695						
Adjusted R^2	0.694						
F	F(1,498)=1134.853,p=0.000						
D-W 值	1.632						
DV : Professional Identity							

Note * $p < 0.05$ ** $p < 0.01$

The linear regression analysis for Teacher's Roles shows a substantial favorable relationship with "Professional Identity." The design explains 69.5% of the difference ($R^2 = 0.695$, Adjusted $R^2 = 0.694$), showing a strong fit. The standardized Beta coefficient of 0.834 suggests that Teacher's Roles has a significant effect. The Variance Inflation Factor (VIF) of 1.000 shows no multicollinearity concerns. In addition, the Durbin-Watson worth of 1.632 suggests no significant autocorrelation in the information, guaranteeing the reliability of the outcomes.

The linear regression analysis of Teacher's Competence suggests a strong favorable impact on "Professional Identity," as revealed by the adjusted R^2 of 0.751, indicating 75.1% of the variation is explained by the design. The Beta worth of 0.867 recommends a substantial effect of teaching performance, with a t-value of 38.766, validating its strength. There are no multicollinearity concerns ($VIF = 1.000$). Furthermore, the Durbin-Watson statistic of 1.693 suggests that autocorrelation is not an issue, additional validating the toughness of the design.

Table 4.22 Linear Regression Analysis Results of Teacher's Competence (n=500)

	Unstandardized Coefficients		Standardized Coefficients	t	p	Collinearity Diagnostics	
	β	Std. Error	Beta			VIF	Tolerance
Constant	0.815	0.072	-	11.330	0.000	-	-
Teacher's Competence	0.758	0.020	0.867	38.766	0.000	1.000	1.000
R ²	0.751						
Adjusted R ²	0.751						
F	F(1,498)=1502.786,p=0.000						
D-W	1.693						
DV: Professional Identity							

Note * $p < 0.05$ ** $p < 0.01$

Table 4.23 Linear Regression Analysis Results of Teaching Performance (n=500)

	Unstandardized Coefficients		Standardized Coefficients	t	p	Collinearity Diagnostics	
	β	Std. Error	Beta			VIF	Tolerance
Constant	0.789	0.066	-	11.983	0.000	-	-
Teaching Performance	0.770	0.018	0.887	42.780	0.000	1.000	1.000
R^2	0.786						
Adjusted R^2	0.786						
F	F(1,498)=1830.152,p=0.000						
D-W	1.564						
DV: Professional Identity							
Note * p<0.05 ** p<0.01							

The linear regression analysis results for TP suggest a strong positive relationship with "Professional Identity." The model discusses 78.6% of the variance ($R^2 = 0.786$, Adjusted $R^2 = 0.786$), revealing a strong fit. The standardized Beta coefficient of 0.887 suggests that teaching performance significantly affects professional identity. The t-value of 42.780 strengthens this, and the VIF of 1.000 suggests no multicollinearity issues.

Table 4.24 Linear Regression Analysis Results of Teacher Self-Efficacy (n=500)

	Unstandardized Coefficients		Standardized Coefficients	t	p	Collinearity Diagnostics	
	β	Std. Error	Beta			VIF	Tolerance
Constant	0.989	0.073	-	13.623	0.000	-	-
Teacher Self-Efficacy.	0.713	0.020	0.850	36.065	0.000	1.000	1.000
R ²	0.723						
Adjusted R ²	0.723						
F	F(1,498)=1300.664,p=0.000						
D-W	1.601						
DV: Professional Identity							
Note * p<0.05 ** p<0.01							

The direct regression analysis results for Teacher Self-Efficacy. show a strong favorable impact on Professional Identity. The model describes 72.3% of the difference ($R^2 = 0.723$, Adjusted $R^2 = 0.723$), revealing a good fit. The standardized Beta coefficient of 0.850 highlights the substantial impact of self-efficacy, with a t-value of 36.065. No multicollinearity is present, as the VIF is 1.000, making sure design stability. The Durbin-Watson fact of 1.601 recommends no substantial autocorrelation, confirming the dependability of the outcomes.

Table 4.25 Linear Regression Analysis Results of Teachers' Job Satisfaction (n=500)

	Unstandardized Coefficients		Standardized Coefficients	t	p	Collinearity Diagnostics	
	β	Std. Error	Beta			VIF	Tolerance
Constant	1.056	0.076	-	13.855	0.000	-	-
Teachers' Job Satisfaction	0.702	0.021	0.832	33.432	0.000	1.000	1.000
R^2	0.692						
Adjusted R^2	0.691						
F	F(1,498)=1117.675,p=0.000						
D-W	1.690						
DV: Professional Identity							
Note * $p < 0.05$ ** $p < 0.01$							

Teacher's job satisfaction is another important predictor of Professional Identity, discussing 69.2% of the variation ($R^2 = 0.692$). The standardized Beta of 0.832 recommends a strong impact, without any multicollinearity and the Durbin-Watson statistic of 1.690 confirming the reliability of the results.

In Conclusion, the linear regression analysis reveals that Teacher Self-perception, Teacher's Roles, Teaching Performance, Competence in Teaching, Teacher Self-Efficacy, and Job Satisfaction all have considerable positive effect on Professional Identity. These findings use essential understandings into the essential

factors forming professional identity and have important implications for academic approach and policy-making.

4.7 Qualitative Data Analysis

Thorough interviews are an extensively used qualitative information collection technique throughout social sciences, allowing individuals to reveal in their own words how they perceive and interpret the world (Knott et al., 2022). These interviews are especially important for exploring personal experiences and viewpoints, offering researchers a much deeper understanding of social reality (Edwards & Holland, 2013; Flick, 2018).

While other qualitative approaches have their place, semi-structured interviews stand out by enabling researchers to keep focus while still having the flexibility to check out appropriate concepts that might occur during the conversation (Adeoye et al., 2021). Interviews are among the most appealing methods of collecting qualitative information through establishment of an interaction between researcher and the interviewee (Taherdoost, 2022).

In the qualitative phase of this research study, I conducted semi-structured interviews with 7 administrative team members from vocational colleges in Fujian Province, each with over 5 years of work experience. The aim was to check out and validate crucial factors affecting teacher professional identity from various viewpoints. The research study approach concentrated on identifying themes from the interview records, and the qualitative data gathered were analyzed using Nvivo12 software to discover numerous elements of teacher professional identity.

4.7.1 Interview Data analysis

Thematic analysis has become an extensively used method in qualitative research study due to its usefulness and availability for researchers (Kiger, 2020). Originally introduced in the 1970s (Joffe, Harper, & Thompson, 2012), it got even more acknowledgment by the late 1990s through the work of scholars such as Boyatzis (1998) and Hayes (1997) (Braun & Clarke, 2012). Since then, thematic analysis has actually been embraced throughout numerous fields, mostly because of its flexibility and efficiency in identifying patterns within qualitative data.

The goal of performing a thematic analysis is to determine key themes related to the research study concern, assisting researchers to go beyond summarising the information and gain a deeper understanding and analysis. Braun and Clarke (2006) propose two kinds of styles: semantic and potential.

Semantic themes focus on the surface area meaning of the information, and the analysis focuses on the direct words of the participants without digging deeper into the presumptions or concepts behind them. This method is common in the fields of education and research, and focuses on analyzing and elaborating on the material of the data. Possible styles, on the other hand, dive much deeper into the concepts, presumptions and ideologies behind the development of the data. This type of analysis goes beyond the surface and attempts to understand the deeper factors influencing the participants' views.

In practice, researchers can use a coding system such as 'aa1' and 'aa2' to label observed patterns. For example, 'aa1' might be used to label the view expressed 'A strong sense of responsibility and service awareness, along with meticulous management of student affairs...'. Researchers will then group these labelled themes to form groups representing broader themes. This method helps to organise and analyse research data in depth, and better understand the research topic.

Table 4.26 Scope of Initial Themes

Original Interview Statements	Initial Theme	Lable
I believe that I have a strong sense of responsibility. In dealing with student affairs, I handle everything meticulously, am available whenever needed, and am quite willing to serve the students.	a1 Responsibilit y and Support for Students	aa1 A strong sense of responsibility and service awareness, along with meticulous management of student affairs
Teacher must have sufficient knowledge to teach students. Whether it is the theoretical content in the teaching syllabus or the content in stage performance practice, a large amount of reserves are needed.	a2 Teacher's Knowledge and Skills	aa2 A solid knowledge reserve in theoretical content, combined with practical skills.
A good teachers should have a sense of teacher's ethics, guide students, and foster virtue through education	a3 Professional Ethics	aa3 Teacher's professional ethics, guiding students in moral education.
I believe the most important role of a teacher is to be a good educator. As a teacher, one must first possess professional qualities, knowledge, logic, and critical thinking. Only with sufficient knowledge can a teacher effectively impart it to students.	a4 The Core Role of a Teacher	aa4 Establish the correct outlook on life and values, and guiding them on how to apply knowledge in practical situations.
One participant ensures fairness by using clear scoring guidelines and allowing students to contribute to their own evaluation, ensuring transparency in assessments	a5Fair and Impartial Assessment	aa5 Many teachers aim to reduce subjectivity by setting clear guidelines.
I helped a student who lacked confidence in their dancing abilities by sharing personal stories, which eventually led the student to win a provincial dance competition	a6 Motivating Students	aa6 Guiding struggling students toward success.

Table 4.26 Scope of Initial Themes (continued)

I actively uses flipped classrooms and integrates online platforms like “Flipped Classrooms” to promote discussion and interaction	a7 Flexible and appropriate teaching methods.	aa7 Emphasizes student participation and engagement through discussion and interaction.
I fully support the work of the school. One of the most impressive projects I was involved in was the construction of the School's Student Quality Development Center. This project was initiated in 2018, and I took charge in September 2021. I was responsible for everything, from design to bidding, construction, and final implementation, turning it into a signature project for the school. It was a very challenging task, especially managing every detail. The outbreak of the pandemic required timely adjustments and communication on various matters. New requirements also meant frequent modifications, but I overcame many difficulties, and the center was finally completed. I basically handled all the work on my own. I participated in training programs on online education, legal regulations, psychological skills, and student management. I believe some of the theoretical knowledge courses greatly contributed to my personal development. Additionally, I found the psychological techniques to be quite practical. At the same time, I really appreciated how the instructors incorporated case studies into their teaching, which provided us with a lot of inspiration	a8 Leadership and Project Management a9 Training and Development	aa8 overcome many difficulties and support the work of the school and its leadership. aa9 Highlights the value of psychological techniques and their practical application in the teacher's work.

Table 4.26 Scope of Initial Themes (continued)

I observe the students' mental state during and after class, including how often they look up and their level of focus during the lesson. I also review the completion of their assignments, and in the next class, I have them present their work through group discussions	a10 Student Engagement Assessment	aa10 Student focus during class and assignment completion
A teacher uses the "Flipped Classrooms" platform to facilitate discussions, share opinions, and merge online and offline learning; teacher relies heavily on PPT and multimedia resources like videos to deliver course content	a11 Use of IT	aa11 Teachers incorporate various tools for teaching.
A sense of responsibility is about encouraging students to develop their own innovative thinking, treating them with fairness and respect, and valuing their ideas	a12. Fairness and respecting student.	aa12 Treating students with fairness and respecting their ideas.
I teach skills in the classroom while incorporating case studies and stories to engage students emotionally and make the lessons impactful. I also tailor my teaching methods to suit each student's personality and preferences. Outside of class, I provide encouragement and support to help students gain the confidence to pursue their goals and improve their abilities in the classroom. When faced with difficulties, I seek help from colleagues and leaders to enhance my effectiveness in completing tasks.	a13 Combining Soft and Hard Skills	aa13 Integrate emotions into teaching, persuade with reason, and move people emotionally
I consider empathy and communication skills to be the crucial personality traits that enable me to perform my job effectively. These skills allow me to form closer connections with students and comprehend their needs and emotions. Furthermore, being detail-oriented and responsible ensures that I approach each teaching task with dedication, while the ability to empathize helps me better support students in their learning journeys.	a14 Empathy and Rapport.	aa14 Be able to empathize with students, teach from their perspective, and use methods they prefer.

Table 4.26 Scope of Initial Themes (continued)

After having a child, I found that balancing work and life became particularly important. My child is currently only six months old and requires a significant amount of my time and care. As a result, I often need more support and assistance from my colleagues. In the future, I plan to achieve a better balance by managing my time more effectively and further weighing work and life responsibilities.	a15 Time Management Skills.	aa15 Balancing Work and Life Relationships.
Currently, as a new mother, I am facing some challenges during a stagnation period in my career advancement. Firstly, I engage in in-depth communication with my leaders to convey my difficulties and issues, seeking their understanding and assistance, and adjusting my work tasks based on the actual situation. Secondly, I rely on the support of my family to organize my problems and seek help promptly when under excessive stress. These methods help me better cope with changes and challenges in my work.	a16 Coping with Challenges	aa 16 Communicating and Seeking Support from Leaders
I believe that teaching innovation is extremely important because the student population undergoes new changes every year, and the age gap among students is increasing. Therefore, it is essential to master the latest information and technologies to enhance students' interest. In the classroom, I extensively utilize new media technologies and employ a variety of teaching tools and methods to increase interactivity and engagement, thereby enhancing the students' learning experience.	a17 Teaching Innovation	aa 17 Teachers need to innovate to meet the needs of the times and their students.
When I encounter problems, I choose to communicate and interact directly with my colleagues, maintaining honesty and showing my true self. Additionally, I participate in after-school gatherings and team-building activities to enhance team cohesion and collaborative spirit.	a18 Interpersonal Communication	aa 18 Being Sincere, Enhancing Communication and Interaction

Table 4.26 Scope of Initial Themes (continued)

Being respected and praised can enhance my passion for work, motivating me to continuously strive to perform better in my role.	a19 Motivation through Respect and Recognition	aa19 Passion for Profession.
My monthly salary is approximately 10,000 RMB. I am generally satisfied with my salary, but I also hope to continuously improve our allowances and benefits.	a20 Salary and Job Satisfaction	aa20 Salary Satisfaction
I believe that one area for improvement in my current work is interpersonal relationships. I hope that the handling of relationships between superiors and subordinates can be more sincere. I wish that leaders could reasonably allocate my workload and avoid making unrealistic statements. I feel that the quality of my relationships with leaders and colleagues affects my job satisfaction.	a21 Workplace Interpersonal Relationships	aa21 The quality of relationships with leaders and colleagues affects job satisfaction.
There are significant bottlenecks in promotion opportunities, a lack of managerial positions, and a long time cycle for cadre training. As a result, many management cadres experience high turnover and frequently change jobs, which can easily cause teachers to lose their passion for work and have their enthusiasm diminished	a22 Career Advancement Issue	aa22 Bottlenecks in promotion opportunities, lack of managerial positions
I am very satisfied with my work as a teacher because I can truly influence a student's growth. This makes me feel very happy and accomplished.	a23 Job Satisfaction	aa23 Satisfaction derived from impacting student growth and feeling happy and accomplished.

4.7.2 Reviewing Themes

The study employed a thorough thematic analysis approach to explore the perspectives of vocational college teachers in Fujian Province, particularly in relation to their professional identity. The initial analysis revealed several emerging themes that reflected teachers' varied perceptions, attitudes, and intentions across different aspects of their professional lives.

4.7.2.1 Teachers' Perception and Role

This theme encapsulates teachers' understanding of their responsibilities, ethics, and emotional engagement in their roles. It aligns closely with the 'Teacher Self-perception' and 'Teacher Role' dimensions from the original research framework.

Sense of Responsibility (NN01) reflects a strong internal commitment to student welfare and meticulous management, which is critical in shaping a teacher's professional identity. Professional Ethics (NN02) emphasizes the moral and ethical responsibilities of guiding students, not just academically but in moral and value-based education.

Mentor and Guide (NN03) highlights the role of the teacher as a mentor, focusing on shaping students' life perspectives and ensuring that the knowledge imparted is practical and applicable. Emotional Connection (NN04) emerged as a crucial subtheme where teachers integrate emotions into their teaching, establishing a strong connection with students that fosters motivation.

4.7.2.2 Teaching Performance

This style is straight connected to the 'Teaching Performance' measurement and concentrates on how teachers engage trainees, innovate in teaching, and protect fairness and discipline in the class.

Engaging Students (NN05) reflects the worth of assessing and protecting trainee engagement both throughout and after lessons. Innovation in Teaching (NN06) highlights the requirement for teachers to stay up to date with educational trends and technology, making sure that their teaching strategies stay appropriate and effective. Teacher-Student Interaction (NN07) concentrates on empathy and connection structure, an essential element in keeping an effective learning environment. Fairness in Teaching (NN08) highlights the value of fairness and regard in dealing with trainees, ensuring an equitable understanding experience. Improving Classroom Dynamics (NN18) stresses the importance of cultivating a beneficial and interactive class environment, which is crucial for student engagement and learning. Focus on Classroom Discipline (NN19) highlights the role of reliable class management, stressing the requirement for discipline to produce a beneficial knowing environment.

4.7.2.3 Teachers' Competence

This design reveals teachers' continuous advancement and practical application of their abilities and understanding, referring the 'Competence in Teaching' measurement. Comprehending and Skill Application (NN09) reveals teachers' commitment to deepening their knowledge and utilizing helpful abilities in the classroom. Supporting Struggling Students (NN10) highlights the role of teachers in encouraging and assisting students who may handle difficulties, highlighting a teacher's role in cultivating trainee success.

Practical Training and Application (NN11) highlights the importance of continuous learning, consisting of the application of mental techniques and beneficial training in teachers' professional advancement. Passion for Teaching (NN17) describes teachers' efforts to improve their teaching practices and professional growth, frequently through peer cooperation and self-driven improvement.

4.7.2.4 Teachers' Self-Efficacy

This style captures teachers' self-efficacy and their capability to manage challenges, showing the 'Teacher Self-Efficacy' measurement. An emerging subtheme here is the flexibility teachers display in response to psychological and social obstacles, which were exposed throughout the qualitative interviews.

Coping with Challenges (NN12) shows teachers' resilience and their capability to seek support when required, which is vital for maintaining professional efficacy. Psychological and Social Adaptability (NN13) emerged as a brand-new concept, highlighting teachers' ability to browse psychological and social obstacles within their professional environment, including a brand-new layer to comprehending teacher self-efficacy.

4.7.2.5 Teachers' Job Satisfaction

This style covers teachers' satisfaction with their job and career prospects, aligning with the 'Teacher Job Satisfaction' dimension.

Financial Satisfaction (NN14) associates with teachers' satisfaction with their income and monetary benefits, which straight affects their total job satisfaction. Interpersonal Relationships (NN15) addresses the dynamics of workplace relationships, revealing both satisfaction and challenges teachers experience in their professional environments. Career Advancement (NN16) highlights the frustrations teachers face due to limited promotion opportunities and the resulting bottlenecks, which affect their long-term job satisfaction and career growth. Sharing Resources with Colleagues (NN20) emphasizes collaboration among teachers, where the sharing of resources and teaching tools promotes a supportive work environment, contributing to job satisfaction.

Table 4.27 Scope of subthemes and Main Themes

Main Themes	Subthemes	Initial Themes
1. Teacher Self-Perception & Role	NN01 Sense of Responsibility	aa1 A strong sense of responsibility and service awareness along with meticulous management of student affairs
	NN02 Professional Ethics	aa3 Teacher's professional ethics guiding students in moral education
	NN03 Educator role	aa4 Establishing the correct outlook on life and values, guiding students in applying knowledge
	NN04 Emotional Connection	aa13 Integrating emotions into teaching, persuading with reason and fostering motivation
2. Teaching Performance	NN05 Engaging Students	aa10 Assessing student focus and engagement during and after class
	NN06 Innovation in Teaching	aa17 Innovation and keeping up with educational technology and trends
	NN07 Teacher-Student Interaction	aa14 Building empathy and rapport with students
	NN08 Fairness in Teaching	aa12 Treating students with fairness and respect

Table 4.27 Scope of subthemes and Main Themes (continued)

3. Competence & Continuous Learning	NN09 Knowledge and Skill Application	aa2 A solid knowledge reserve in theoretical content combined with practical skills
	NN10 Supporting Struggling Students	aa6 Guiding struggling students towards success
	NN11 Practical Training and Application	aa9 Applying psychological techniques and practical knowledge
4. Teacher Self-Efficacy & Adaptability	NN12 Coping with Challenges	aa16 Communicating and seeking support from leaders (Emerging subtheme from qualitative interviews on emotional and social adaptability)
	NN13 Emotional and Social Adaptability	
	NN14 Financial Satisfaction	aa20 Salary satisfaction
5. Job Satisfaction	NN15 Interpersonal Relationships	aa21 The quality of relationships with leaders and colleagues affecting job satisfaction
	NN16 Career Advancement	aa22 Bottlenecks in promotion opportunities, lack of managerial positions
		aa19 Passion for teaching and motivation derived from respect and appreciation
6. Passion and Innovation in Teaching	NN17 Passion for Teaching	
	NN18 Balance Between Work and Life	aa15 Managing work-life balance and time management
	NN19 Communication & Team Cohesion	aa18 Enhancing communication with colleagues and building team cohesion through direct interactions and after-school activities
	NN20 Job Satisfaction through Impact	aa23 Satisfaction derived from influencing student growth, feeling happy and accomplished

4.7.3 Integrating Qualitative and Quantitative Findings

The results of the qualitative research help to deepen our understanding of the key dimensions identified in the quantitative analysis, especially the professional identity of higher vocational college teachers in Fujian Province. In Chapter 4, the analysis of interviews provided a certain complement to the quantitative research of the questionnaire, which further verified these six dimensions have an impact on teachers' sense of professional identity.

4.7.3.1 Teachers' Perception and role

The theme of teacher self-perception and role closely aligns with the "Teacher Self-Perception" and "Teacher Role" dimensions from the quantitative study. However, the qualitative analysis exposed extra subtleties. The subtheme of Sense of Responsibility (NN01) highlights the strong internal dedication vocational teachers have towards trainee welfare, particularly their meticulous management of trainee affairs. This broadens the scope of self-perception, moving beyond purely scholastic duties. In Addition, Professional Ethics (NN02) and Educator role (NN03) highlight the moral role teachers play in directing students' life point of views and values, which aligns with the quantitative findings but also includes depth. Emotional Connection (NN04), not explicitly determined in the quantitative phase, emerged as a considerable subtheme in the qualitative data. Teachers revealed the significance of cultivating emotional bonds with trainees to enhance their motivation and engagement in knowing, an element that plays an important role in shaping professional identity.

4.7.3.2 Teaching Performance

Teaching performance was a vital measurement in both the qualitative and quantitative findings. The subthemes acknowledged, such as Engaging Students (NN05) and Innovation in Teaching (NN06), enhanced the significance of

interactive and innovative teaching methods, supporting the arise from the quantitative analysis. Nonetheless, qualitative insights brought brand-new measurements to light, such as Teacher-Student Interaction (NN07), which stresses the role of empathy and structure relationship with students-- an aspect that deepens our understanding of teaching effectiveness. Furthermore, designs such as Fairness in Teaching (NN08), Improving Classroom Dynamics (NN18), and Focus on Classroom Discipline (NN19) highlighted the need for teachers to develop a well balanced and fair knowing environment. These qualitative findings suggest that effective teaching exceeds technical abilities, as the ability to deal with classroom characteristics and discipline became essential to trainee success.

4.7.3.3 Teaching Competence

The measurement of teaching competence was highly reinforced by the qualitative analysis. Teachers consistently stressed Knowledge and Skill Application (NN09) and Supporting Struggling Students (NN10), both of which align with the quantitative findings. However, the qualitative info provided much deeper insights into the helpful challenges teachers face, especially in applying psychological methods and adapting to students' varying requirements. The design of Practical Training and Application (NN11) additional highlights the requirement for constant professional advancement, as teachers expressed a desire for more useful, real-world training to boost their teaching efficacy. Additionally, Effort to Promote (NN17) ended up being a vital subtheme, highlighting how teachers take proactive steps to improve their practices through peer partnership and self-driven knowing efforts.

4.7.3.4 Teacher Self-Efficacy

Teacher self-efficacy was a considerable style, as evidenced by both the quantitative and qualitative information. Managing Challenges (NN12) was consistently mentioned, with teachers highlighting their strength and capability to look for support from associates and leaders when needed. This finding lines up closely

with the quantitative information, which revealed a strong connection in between self-efficacy and job satisfaction. A brand-new subtheme, Emotional and Social Adaptability (NN13), emerged from the qualitative interviews, providing an extra layer of comprehending to the self-efficacy measurement. Teachers often discussed their requirement to navigate complex mental and social environments, which affects their ability to keep professional efficiency and deal with class dynamics.

4.7.3.5 Teachers' Job Satisfaction

The qualitative analysis more expanded on the quantitative findings related to job satisfaction. Financial Satisfaction (NN14) and Interpersonal Relationships (NN15) were substantial factors affecting general job satisfaction, as teachers revealed both satisfaction and dissatisfaction with their wages and workplace relationships. These insights follow the quantitative info however consist of more depth regarding the particular obstacles teachers face. Profession Advancement (NN16) emerged as a particularly significant theme, with many teachers expressing aggravation over limited promo opportunities and the resulting result on their long-lasting job satisfaction. This style straight relates to the quantitative findings, which revealed a strong relationship in between occupation development and general satisfaction levels.

In addition, Sharing Resources with Colleagues (NN20) revealed the significance of collaboration and team effort in enhancing teachers' professional experiences. Teachers regularly talked about the value of exchanging teaching resources and strategies, which was not fully recorded in the quantitative data however became a vital aspect of their everyday work.

Jointly, these styles develop an in-depth image of the professional identity development of vocational college teachers in Fujian Province. The analysis starts with their basic self-perception and roles, relocations through their teaching performance and competencies, and culminates in a much deeper understanding of

their job satisfaction and self-efficacy. Cultivating these crucial elements early in a teacher's profession is essential for maintaining long-term motivation and effectiveness in the classroom.

4.8 Conclusion

In this chapter, through an analysis of the 6 core elements of teachers' professional identity, we have identified the crucial elements that influence this identity. The results of the quantitative analysis reveal that teachers' self-perception, role understanding, teaching performance, teaching competence, self-efficacy, and job satisfaction are the critical factors influencing their professional identity. Amongst these, self-perception and teaching performance have the greatest influence on professional identity. Furthermore, job satisfaction (including aspects such as income, promo chances, and interpersonal relationships) likewise has a substantial result on professional identity.

At the same time, the qualitative analysis provides deeper insights into these factors and validates the results of the quantitative analysis. Interviews revealed that the responsibilities teachers take on in their teaching, the emotional investment they make, and their interactions with trainees and associates play an essential role in shaping their professional identity. Teachers show a strong dedication to their professional development by constantly enhancing their teaching abilities and attending to difficulties.

This chapter summarizes the relationships between these core aspects and their impact on teachers' professional identity. The next chapter will propose techniques and measures based upon these findings to help teachers in higher vocational colleges in Fujian Province boost their professional identity.

Chapter 5

Discussion and Conclusion

Based upon the results of this study, the six essential dimensions—teachers' perception, teacher roles, teaching performance, teachers' competence, teacher self-efficacy, and job satisfaction-- have a substantial influence on the professional identity of vocational college teachers.

5.1 Discussion

The study aimed to explore the professional identity of teachers in Fujian Province, which includes six dimensions: 1) Teachers' Perception, 2) Teacher's Roles, 3) Teaching Performance, 4) Teachers' Competence, 5) Teacher Self-efficacy, and 6) Teacher Job Satisfaction. Both EFA and CFA revealed that these six dimensions appear to influence teachers' professional identity from a quantitative perspective. Through individually in-depth interviews, the relationships among these 6 measurements were more substantiated and deepened, together with their influence on teachers' professional identity.

The six-factors was effective in measuring teachers' professional identity. From the qualitative analysis, the strong correlation between teacher self-perception and teacher roles was confirmed during one-on-one interviews. Self-perception acts as a foundation for teachers' professional roles (Hanna, 2020). Teachers emphasized their sense of responsibility, professional ethics, and emotional engagement, which not only strengthened their professional identity but also reflected their guiding role in student education. This shows that how teachers view themselves and understand their roles is crucial to shaping their professional identity. A strong and positive self-perception among teachers is crucial in enhancing their role effectiveness and overall professional identity (Protasova, 2021).

Teachers' professional identity is significantly shaped by their self-perception, which is linked to their motivation, self-efficacy, and commitment. Teachers who see themselves positively tend to take on more active and effective roles in their educational environments (Stronge, 2018).

In addition, teaching performance and teaching competence were also identified as key influencing factors in the quantitative analysis. Competence and teaching knowledge in enhancing teacher effectiveness and adapting teaching methods (Shulman, 1987). Qualitative research further revealed that teachers' dedication to innovative teaching methods, classroom management, and interaction with students demonstrates their commitment to enhancing their competence through continuous learning and practice (Hattie, 2009; Darling-Hammond et al., 2017). These findings show that teachers not just concentrate on academic outcomes, such as research study tasks and publications, however likewise on adjusting their teaching techniques to satisfy the developing requirements of trainees (Fauth et al., 2019).

Teacher self-efficacy, which showed a strong connection with professional identity in the quantitative details, was also supported by the qualitative findings. Teachers shared their strategies for managing obstacles and their psychological flexibility, highlighting how improving their self-efficacy helps them preserve their professional identity (Salari & Farahian, 2023), particularly in the face of work pressures and modifications in their environment. The role of self-efficacy in assisting teachers adjust emotionally, preserving professional identity even in tough work environments (Xie, 2021; Perera & McIlveen, 2018).

Lastly, both the quantitative and qualitative analyses revealed the extensive effect of job satisfaction on professional identity. The qualitative research study exposed that element such as salary (Lent et al., 2011) discount opportunities (Mostafa & Pál, 2018) and social relationships play a role in shaping job satisfaction, more improving our understanding of teachers' professional identity. Teachers revealed

issues about limited opportunities for raise and career improvement, along with their relationships with leader and administrators , favorable relationships with colleagues significantly boost teachers' professional identity by promoting a supportive workplace (Knights & Clarke, 2017). All of which significantly affect their sense of professional identity.

The qualitative findings match the quantitative data, providing a more thorough and in-depth analysis. This further validates the significance of the six measurements of teacher professional identity among vocational college teachers in Fujian Province. Furthermore, these insights can assist policymakers and educators in developing targeted programs that support professional advancement and improve the identity of vocational college teachers. Future research study ought to have a look at these dimensions in diverse contexts to deepen our understanding of teacher professional identity.

5.2 Recommended Measures

Based upon the findings from both quantitative and qualitative analyses, particular procedures can be proposed at the levels of teachers, schools, and policymakers to boost the professional identity of vocational college teachers. These procedures concentrate on reinforcing teachers' self-perception, enhancing teaching competence, and increasing job satisfaction to promote their professional development and advancement.

5.2.1 For Teacher

Teachers' professional identity is influenced by various aspects, particularly self-perception, teaching competence, and job satisfaction (Zhao et al., 2022; Wang et al., 2021; Rots et al., 2020). To enhance these essential locations, teachers can take the following steps:

5.2.1.1 Enhance Self-Reflection and Career Planning

The research study exposes a strong connection in between teachers' self-perception and their professional identity. Teachers ought to participate in regular self-reflection to examine their teaching efficiency and career advancement. By setting both long-lasting and short-term goals, they can keep their interest and devotion to the occupation. Workshops on profession advancement could also support teachers in constructing clear professional courses.

5.2.1.2 Continuous Learning and Improving Teaching Competence

Qualitative interviews reveal that teaching competence substantially affects professional identity. Teachers must actively take part in ongoing professional advancement, discovering new technologies and teaching approaches, especially in digital and information-based education. Additionally, teachers must look for interdisciplinary knowing opportunities to widen their knowledge and use innovative teaching approaches that better satisfy the progressing requirements of students.

5.2.1.3 Optimize Emotional Management and Student Interaction

The research highlights the importance of psychological connection with students in shaping professional identity. Teachers ought to pay attention to student needs and feedback and use engaging approaches such as case studies and interactive conversations to cultivate positive relationships. By embracing new innovation and teaching strategies that resonate with trainees, teachers can further improve class interaction and trainee involvement.

5.2.2 For School

Schools play a critical role in promoting teachers' professional identity, especially by supplying resources and creating a helpful working environment.(Altun

et al., 2020; Muijs, Chapman, & Armstrong, 2019; Kraft & Papay, 2021), Based on the research findings, schools can carry out the following measures:.

5.2.2.1 Improve Promotion and Incentive Systems

Data suggests that career development chances greatly affect job satisfaction. Schools need to develop transparent and equitable promo systems, using clear profession advancement courses for teachers. In addition to salary incentives, schools can introduce various awards such as teaching excellence and development awards to encourage teachers and motivate their professional development.

5.2.2.2 Provide Targeted Training and Support

The research highlights a close relationship between teachers' self-efficacy and professional identity. Schools must frequently provide targeted professional development, particularly in the locations of innovation integration and class management. Additionally, mentoring programs for new teachers can help them adjust to the teaching environment more quickly, lowering professional tension.

5.2.2.3 Optimize Work Environment and Resource Allocation

The work environment considerably influences teachers' professional identity. Schools must make sure that teachers have adequate resources and centers, reducing unnecessary administrative problems so they can concentrate on teaching and research study. Schools ought to likewise foster an open and collective school culture, motivating academic exchange and cooperation amongst teachers to boost group cohesion and a sense of belonging.

5.2.3 For Management

Policymakers and school leaders play a key role in improving teachers'

professional identity by establishing policies and assigning resources (Hilel, Anat, & Antonia, 2022). Based upon the research study's findings, the following measures are recommended.

5.2.3.1 Develop a Comprehensive Professional Evaluation System

Policymakers ought to establish a detailed assessment system that shows teachers' professional identity, focusing not only on teaching results but likewise on profession development. Aspects such as innovative teaching techniques, student-teacher interaction, and professional principles must be included, decreasing the overemphasis on scholastic performance.

5.2.3.2 Strengthen Psychological Support and Career Health Management

Qualitative analysis reveals that teachers face challenges in managing work-related stress and emotional adjustment. School leaders should offer psychological assistance services and profession counseling to help teachers manage burnout and tension. Regular workshops or seminars on career health management can also enhance teachers' emotional resilience and coping strategies.

5.2.3.3 Promote Professional Development Opportunities

Policymakers should support teachers by offering more opportunities for career development, such as domestic and international academic exchanges and visiting scholar programs. In addition, providing teachers with sufficient research resources and time will enable them to focus on their academic and professional growth alongside teaching responsibilities.

5.3 Future Research

Future research should

- 1) Explore the complex interplay of factors influencing professional identity, especially in different socio-economic and cultural contexts;
- 2) Currently, this study has examined the six dimensions of teacher professional identity from a single perspective, lacking a more diverse analysis. Future research can further with the full model with SEM; and
- 3) This study provides an opportunity for future research to explore more comprehensively, so as to provide more targeted recommendations for policymakers and educators with the impacts of latent variables with mediators on professional identity.

5.4 Conclusion

This chapter summarizes the key findings from both quantitative and qualitative analyses, demonstrating that the six dimensions—teacher self-perception, teacher roles, teaching performance, teaching competence, teacher self-efficacy, and job satisfaction have a significant impact on the professional identity of vocational college teachers.

The study suggests that by enhancing Teachers' Perception, improving their teaching competence and classroom performance, and increasing their self-efficacy and job satisfaction, teachers' professional identity can be effectively strengthened. Schools should focus on providing clear career development paths and a supportive

work environment, while policymakers need to establish a more comprehensive evaluation system that recognizes teachers' broader contributions in education.

Future research should explore these dimensions in different contexts and adopt a longitudinal approach to better understand how professional identity evolves over time and in various settings, ultimately helping vocational college teachers strengthen their professional identity and contributing to the development of more talented individuals for society and the nation.



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Appendices



Appendix A
Questionnaire

Questionnaire

This questionnaire consists of two parts:

Part 1. Demographic Information Survey

Part 2. Measurement Questionnaire on the Professional Identity of Teachers in Higher Vocational Education Colleges in Fujian Province, China (73 Items)

Your responses are of great value to this research. Therefore, we kindly ask you to take the time to complete this questionnaire. The researcher is very grateful for your support. Part 1: Demographic Information.

Part 1: Demographic Information

1. Gender: ☐ Male ☐ Female
2. Age: ☐ 20-25 years old ☐ 26-30 years old ☐ 31-35 years old ☐ 36-40 years old ☐ 41-45 years old ☐ Over 46 years old

3. Your School is Located in ☐ Fuzhou ☐ Xiamen ☐ Zhangzhou ☐ Quanzhou ☐ Putian ☐ Sanming ☐ Nanping ☐ Longyan ☐ Ningde ☐ Pingtan Comprehensive Pilot Zone
4. Workplace Type ☐ General Higher Vocational College ☐ National Key Higher ☐ Vocational College ☐ National Model Higher ☐ Vocational College
5. Education Level ☐ Bachelor's Degree ☐ Master's Degree ☐ Doctoral Degree
6. Academic Title ☐ Assistant ☐ Lecturer ☐ Associate Professor ☐ Professor
7. Years of Work Experience

☐ Less than 1 year ☐ 6-10 years ☐ 16-20 years	☐ 1-5 years ☐ 11-15 years ☐ Over 20 years
8.Income Level (Per month,CNY) ☐ Less than RMB 3,000 ☐ RMB 3,000 - RMB 5,999 ☐ RMB 6,000 - RMB 8,999 ☐ RMB 9,000 - RMB 11,999 ☐ RMB 12,000 - RMB 14,999 ☐ RMB 15,000- RMB 19,999 ☐ RMB 20,000 or above	
9.What Type of Courses Do You Teach? ☐ Professional Theory Courses ☐ General Education Courses ☐ Practical Courses	

Part Two: Measurement Questionnaire on the Professional Identity of Teachers in Higher Vocational Education Colleges in Fujian Province, China (73 Items)

Please answer the following questions and indicate your actual situation by marking "✓" in the appropriate box.

1 = Strongly Disagree

2 = Disagree

3 = Neutral

4 = Agree

5 = Strongly Agree

Factors Influencing the Professional Identity of Teachers	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1. I think I am a good teacher.					
2. I think I can teach well.					
3. I think I have a good teaching style.					
4. I think my teaching methods are good.					
5. I have been acknowledged of being a good teacher from my school.					
6. I have been acknowledged of being a good teacher from my colleagues.					
7. I have been acknowledged of being a good teacher from my students.					

Factors Influencing the	Strongly	Disag	Neutral	Agree	Strongly
8. I have a positive attitude toward					
9. I always have a high expectation in my teaching career.					
10. I believe I hold a positive self - concept.					
11. I believe I have a positive self- image					
12. I have a self-confidence.					
13. I have had a good teaching experience.					
14. As a teacher, I always motivate myself to do better.					
15. I think I am a good educator.					
16. I think I am a good practitioner					
17. I think I am a good examiner.					
18. I think I am a good mentor.					
19. I think I am a good motivator.					
20. I think I am a good trainer					
21. I think I am a good coach.					
22. I think I am a good apprentice.					
23. I think I am a good researcher.					

Factors Influencing the Professional Identity of Teachers	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
24. I can implement my teaching methods into my classes well.					
25. I can choose the right teaching methods for any subjects.					
26. I am skillful in implementing new teaching methods into my classes.					
27. I help with school work.					
28. I am supportive of any extracurriculum					
29. I am supportive of my administrators.					
30. I am supportive of my school leaders.					
31. I can properly manage my classes.					
32. I can promote active participation in my classes.					
33. I inspire a positive classroom atmosphere.					
34. I reassure a positive classroom environment.					
35. I can provide good knowledge to my students.					
36. I can always fulfill my duties.					
37. I can always achieve my goals.					

Factors Influencing the Professional Identity of Teachers	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
38. I actively engage in diverse training programs for an effective professional development.					
39. I actively joining the teaching coach team for effective professional development.					
40. I am knowledgeable in my teaching career.					
41. I am competent and skillful in what I teach.					
42. I am competent in my teaching methods.					
43. I have good knowledge of IT.					
44. I am skillful in IT.					
45. I am a responsible teacher.					
46. I motivate myself to become a better teacher.					
47. I am always professional as a teacher.					
48. I am good at integrating both soft and hard skills to complete my tasks.					
49. I can perform my job well.					
50. I maintain a positive attitude towards my job.					
Factors Influencing the Professional Identity of	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

51.I have personality traits that help me fulfill my job effectively.					
52. I can manage myself well.					
53.I can balance both of the professional and personal life.					
54. I am a successful teacher.					
55.I am a good affiliate with my college.					
56.I can maintain a good relationship with my colleagues.					
57.I can continue a good and professional relationship with my students.					
58.I can adapt myself well both inside and outside the class.					
59. I like to challenge myself to the fullest.					
60. I am open to innovation.					
61. I do not mind doing new things.					
62. I can cope with obstacle					
63. I am satisfied with my work environment.					
64. I am satisfied with my job.					
Factors Influencing the Professional Identity of Teachers	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

65. I am satisfied with my colleagues.					
66. I am satisfied with my students.					
67. I feel grateful when being appraised.					
68. I am happy when being respected.					
69. I am happy when I can reassure my students'					
70. I am satisfied with all the benefits and allowances my job provides me.					
71. I am satisfied with my salary.					
72. I am satisfied if I can achieve better opportunities in my career.					
73. Overall, I am satisfied with my job as being a teacher.					



Appendix B
Interview Protocol

Interview Objective:

This interview aims to gain an in-depth understanding of vocational college teachers' perceptions of their professional identity in Fujian Province. It explores factors related to teacher perception, role recognition, teaching performance, self-efficacy, teaching competence, and job satisfaction in teaching practice. The interview seeks to complement the quantitative data from the questionnaire and provide a more comprehensive basis for the research findings.

Interview Participants:

Five full-time teachers from vocational colleges in Fujian Province, each with over five years of work experience.

Interview Duration: 60 minutes

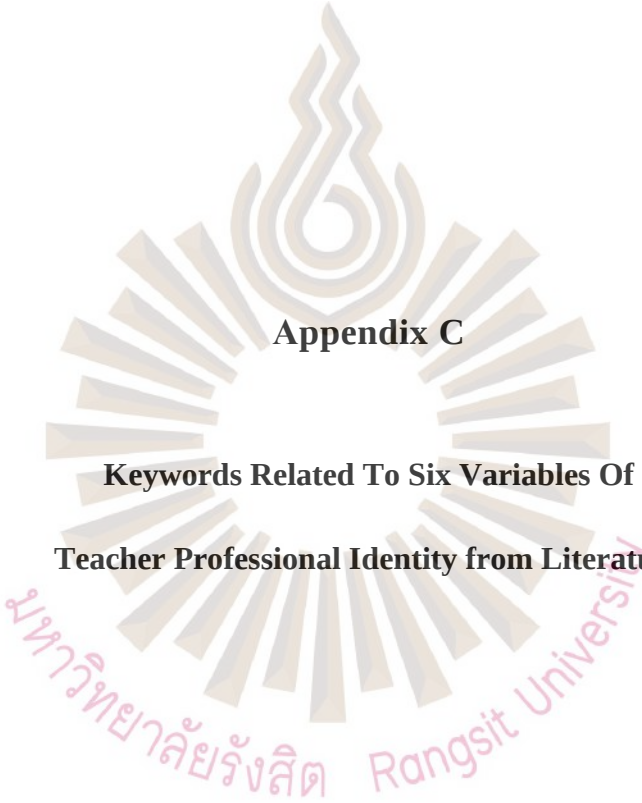
Part 1: Background Information

Could you please introduce your professional experience, including how many years you have worked in vocational education, your educational background, your current position, and the main subjects you teach?

Part 2. Please Answer the Following Questions and Briefly Explain.

Teachers' Perception (10 minutes)	1. Do you think you are a good teacher? How? 2. As a teacher, please rate your strengths -- knowledge, skills, and talents? How and why? 3. What can you do to improve yourself to meet your expectations of being a good teacher? 4. What do you expect of your future as a teacher? How high you aim? 5. What kind of feedback do you get from colleagues or students as being a teacher?
Teachers' Role (10 minutes)	6. Please rate the following three roles from the most to the least you are -- Educator, Coach, and Practitioner? 7. How do you define the most important role you just told, how and why? 8. As an examiner, how do you ensure fairness and objectivity in your examinations? 9. As a Motivator, please provide an example of successfully motivated someone to achieve their goals?
Teaching Performance (10 minutes)	10. Are you good at choosing or implementing teaching methods to your classes? How, please provide an example? 11. Have you supported the school administrators and leaders, how, please give examples? 12. Have you attended any training programs? Please give some examples that help you improve teaching knowledge and skills? 13. Do you promote active participation among students in your classes? How. 14. What kinds of assessments do you usually use to assess your students' knowledge and skills?

Teachers' Competence (10 minutes)	15. How do you use your IT knowledge and skills to support your teaching? 16. How responsible are you as a teacher? 17. How well can you integrate your soft and hard skills to complete tasks? 18. What are the most personality traits do you believe help you complete your work effectively? Why? 19. As a teacher, how well do you balance work and personal life? 20. As a teacher, how do you manage yourself to ensure efficient work?
Teacher Self-Efficacy (10 minutes)	21. How do you evaluate your performance in teaching? In which areas do you think you mostly excel? 22. How do you maintain good relationships with your colleagues? 23. How do you sustain your relationship with your students? 24. As a teacher, how well can you cope with new challenges and changes in your work? How? 25. Do you believe in innovation? How well do you use innovation in your teaching?
Teacher Job Satisfaction (10 minutes)	26. Are you satisfied with your current work environment? How? 27. What aspects of the work environment do you think could be improved? 28. Are there any aspects of your work that make you feel dissatisfied? What are they? Why? 29. How do you evaluate your relationship with your colleagues? 30. Do you feel happy when you receive respect and recognition at work? How and why? 31. Are you satisfied with your salary, benefits and allowances? How? 32. Overall, are you satisfied with your job as a teacher?

The image features a large, faint watermark of the Rangsit University logo in the background. The logo is a circular emblem with a stylized flame or sunburst at the top, radiating lines in the middle, and a circular base. The text "มหาวิทยาลัยรังสิต" (Mahavithayalai Rangsit) is written in Thai script along the bottom arc, and "Rangsit University" is written in English along the bottom arc.

Appendix C

**Keywords Related To Six Variables Of
Teacher Professional Identity from Literature**

1) Teachers' Perceptions																		
Keywords	Authors and Year																	Frequency
	Mohebi & Bailey (2020)	Zhu et al., (2018)	Perez Carras et al., (2021)	Lukaszik (2023)	Yaglan et al (2022)	Baker (2021)	Gullik (2020)	Xiong & Xiong, (2017)	Koroluk et al., (2018)	Burcu et al., (2020)	Yavuz et al., (2021)	Prieto-Hallensleben (2021)	Redmond (2019)	Kelley, Zhong, & Young (2020)	Yang et al. (2022)	Han (2021)	Vah (2001)	
Competence in Teaching (Teaching Abilities, Styles, and Methods)	>	>	>					>	>				>	>	>	>	>	10
Positive Attitude and Expectations for Career in the Future.	>		>		>		>				>	>					>	8

Keywords Related to Six Variables of Teacher Professional Identity from Literature

Teaching Motivation and Teaching Experience	✓		✓	✓		✓	✓		✓									8
Feedback from Others (Schools, colleges, and students)					✓	✓		✓										7
Self-Concept (self-image, and self-confidence)			✓	✓	✓						✓					✓		6
Contextually			✓											✓				2
Social Practice						✓												1
2) Teachers' Roles																		
Keywords	Authors and Year																	Frequency
	Cui, Scheillings, Beijard & Ye, (2020)																	
	Erlia (2021)																	
	Barni (2023)																	
	Wyant Smith (2017)																	
	Looney, Cumming, & Lennert & Mols (2020)																	
	Crosby (2020)																	
	Harden & Joy (2020)																	
	Guthrie & Linn (2020)																	
	Dickson (2022)																	
	Shenigan & Hallinger (2021)																	
	Gregson (2020)																	
	Coarima (2005)																	
	Makko (2021)																	
	Urhane, & Wignia, (2021)																	
	Clareis (2015)																	
	Dey & Datta, (2018)																	
	Amanda (2020)																	
Wiedkowski, & Ginsberg, (2017)																		

Keywords Related to Six Variables of Teacher Professional Identity from Literature (continued)

Keywords	Authors and Year															Frequency	
	Indjag, et al., (2021)	Kanyak&Fat hom, (2021)	Ann & Yamin(2017)	Kilag &Angbud, (2023)	Zahid, & Khanam, (2019)	Khasanah et al., (2019)	Burroughs et al. (2019)	Kanir et al.(2020)	Munira (2021)	Bardach & Perry, (2022)	Suyatno et al (2019)	Forgasz, Kelchermas, & Berry, (2023)	Richter(2021)	Deralishan (2020)	Haliyos, Rivera, &Haluyos, (2019)		Bunar Butar et al. (2020)
Teaching Implementation Teaching Skills, and Methods	✓				✓	✓		✓					✓	✓	✓		✓
Organizational commitment (Administrative support; Leadership support)	✓		✓	✓											✓		
Feedback from others (Classroom Management, Student Engagement)					✓	✓	✓	✓				✓	✓	✓	✓		
																	7
																	8

Keywords Related to Six Variables of Teacher Professional Identity from Literature (continued)

Work Environment (Pedagogical Support, Classroom Atmosphere)		✓	✓				✓										5
Professional Development(Fulfill Duty and Achieve Goals , Training Programs, Teaching supervision)		✓						✓	✓		✓						5
Assessment (Post-Class Support)			✓						✓								3
Teaching Preparation (mastery of learning materials)			✓								✓	✓					3
Work Motivation			✓										✓				2

Keywords Related to Six Variables of Teacher Professional Identity from Literature (continued)

Responsibility/ Motivation	✓	✓		✓		✓	✓	✓	✓	✓	✓	✓	✓	✓	12
Integrated soft and hard skills					✓	✓		✓			✓	✓			7
Social Competence and Self-regulation and	✓	✓		✓								✓	✓		6
Reflective ability		✓					✓								2
work Productivity															1
Keywords	Authors and Year														Frequency
Behavioral Competence(Tr aining Program, Academic Activities)	Mishah et al. (2020)	Williams (2023)		Mujiyatum, (2021)	Albert Bandura (1997)	Way (2022)	Cherry (2018)	Perera (2019)	Heikka et al.(2022)	Ryan,(202 3)	Fong et al(2023)	Shu et al., (2022)		✓	11
5)Teachers' Self-Efficacy															

Keywords Related to Six Variables of Teacher Professional Identity from Literature (continued)

Keywords		Authors and Year															Frequency																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																												
Successful Experience of being a Teacher		✓																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																											

Keywords Related to Six Variables of Teacher Professional Identity from Literature (continued)

6) Teacher Job Satisfaction																
Keywords	Authors and Year															
Frequency																
Satisfied with work environment		✓			✓	✓	✓			✓	✓	✓	✓	✓	✓	14
Satisfaction of the relationships With school, colleagues, students						✓		✓		✓	✓	✓	✓	✓	✓	10
Satisfaction of Earnings, and Salary	✓		✓	✓					✓	✓						9
Being Appreciated and Being Respect	✓						✓	✓						✓		7

Keywords Related to Six Variables of Teacher Professional Identity from Literature (continued)

The image features a large, faint watermark of the Rangsit University logo in the background. The logo is a circular emblem with a stylized flame or sunburst at the top, radiating lines in the middle, and a circular base. The text "มหาวิทยาลัยรังสิต" (Mahavithayalai Rangsit) is written in Thai script along the bottom arc, and "Rangsit University" is written in English along the bottom arc.

Appendix D
Index of Item Objective Congruence: IOC

An IOC for a Survey Research

Topic: Professional Identity of the Teacher in Higher Vocational Education Colleges in Fujian Province, China, China

Dear Expert:

This research is to fulfill the dissertation for Doctor of Education Program in Educational Studies, Suryadhep Teachers College, Rangsit University. Its topic is “Professional Identity of the Teacher in Higher Vocational Education Colleges in Fujian Province, China, China.”

The objectives of the study are:

1. To explore the latent factor structure of teacher professional identity in vocational colleges in Fujian Province using Exploratory Factor Analysis (EFA) to identify the key factors and their interrelationships.
2. To validate and assess the construct validity and internal consistency of these factors using Confirmatory Factor Analysis (CFA), ensuring the accuracy and reliability of the model.
3. To propose specific measures to enhance teacher self-identity in vocational colleges in Fujian Province based on the research findings.

This questionnaire is part of a quantitative research study designed to understand the factors influencing the professional identity of teachers in higher vocational education colleges in Fujian Province, China. The data collected will be used to develop interview questions that will further confirm the factors affecting teachers' professional identity in this context.

Your answers will be valuable in terms of validating the information containing in this questionnaire which will be beneficial for understanding the overall picture and situations pertaining to this topic.

Accordingly, the researcher would like to show great appreciation and gratitude for your valuable time and comments for the validity of this research instrument.

DONG LIN

Ed. D. Student in Educational Studies,
Suryadhep Teachers College
Rangsit University

Instructions:

Please rate each statement by ticking $\checkmark$ the most relevant scale from +1 to -1

Congruent = + 1

Questionable = 0

Incongruent = - 1

This questionnaire contains 2 parts:

Part 1: Respondent's demographic information

Part 2: 73 items related to the factors influencing the professional identity of teachers in higher vocational education colleges in Fujian Province, China.

Part 1: Respondent's Demographic Information

Itmes	Expert Review			
	+1	0	-1	Suggestion
1. Gender ☐ Male ☐ Female	✓			
2.Age ☐ 20-25 years old ☐ 26-30 years old ☐ 31-35 years old ☐ 36-40 years old ☐ 41-45 years old ☐ Over 46 years old	✓			
3.Your school is located in ☐ Fuzhou ☐ Xiamen ☐ Zhangzhou ☐ Quanzhou ☐ Putian ☐ Sanming ☐ Nanping ☐ Longyan ☐ Ningde ☐ Pingtan Comprehensive Pilot Zone				
4.Workplace Type ☐ General Higher Vocational College ☐ National Key Higher Vocational College ☐ National Model Higher Vocational College				

5.Education Level ☐ Bachelor's Degree ☐ Master's Degree ☐ Doctoral Degree	✓			
6.Academic Title ☐ Assistant ☐ Lecturer ☐ Associate Professor ☐ Professor	✓			
7.Years of Work Experience ☐ Less than 1 year ☐ 1-5 years ☐ 6-10 years ☐ 11-15 years ☐ 16-20 years ☐ More than 20 years	✓			
8.Income Level (Per month, CNY) ☐ Less than RMB 3,000 ☐ RMB 3,000 - RMB 5,999 ☐ RMB 6,000 - RMB 8,999 ☐ RMB 9,000 - RMB 11,999 ☐ RMB 12,000 - RMB 14,999 ☐ RMB 15,000- RMB 19,999 ☐ RMB 20,000 or above	✓			

9.What type of courses do you teach?				
☐ Professional Theory Courses	✓			
☐ General Education Courses				
☐ Practical Courses				

Part 2:The factors influencing the professional identity of teachers in higher vocational education colleges in Fujian Province, China.

Items	+1	0	-1	Suggestion
Teachers' Perceptions	✓			
1.I think I am a competent teacher.	✓			
2.I think I am able to teach.	✓			
3.I think I have a good teaching style.	✓			
4.I think I have good teaching methods.	✓			
5.I receive positive feedback as a teacher from my school.	✓			
6.I receive positive feedback as a teacher from my colleagues.	✓✓			
7.I receive positive feedback as a teacher from my students.	✓			
8.I have a positive attitude	✓			

toward my teaching career.				
9.I have high expectations for my teaching career in the future.	✓			
10.I have a positive self-concept.	✓			
11.I have self-confidence.	✓			
12.I have a positive self-image.	✓			
13.I have strong teaching motivation.	✓			
14.I have good teaching experience.	✓			

Teachers' Roles	+1	0	-1	Suggestion
15.I think I am a good educator.	✓			
16.I think I am a good practitioner.	✓			
17.I think I am a good evaluator.	✓			
18.I think I am a good mentor.	✓			
19.I think I am a good coach.	✓			
20.I think I am a good motivator.	✓			
21.I think I am a good trainer.	✓			
22.I think I am a good researcher.	✓			

23.I think I am a good learner.	✓			
Teachers' Performance	+1	0	-1	Suggestion
24.I can implement my teaching methods well.	✓			
25.I can choose the appropriate methods for teaching.	✓			
26.I am skillful in effectively implementing new teaching methods in my classes.	✓			
27.I contribute to the academic development of my school.	✓			
28.I am supportive of my school.	✓			
29.I am supportive of my administrators.	✓			
30.I am supportive of my leaders.	✓			
31.I can manage my classes well.	✓			
32.I can promote effective classroom engagement.	✓			
33.I inspire a positive classroom atmosphere.	✓			
34.I encourage a positive classroom environment.	✓			
35.I provide my students with solid knowledge.	✓			
36.I can always fulfill my duties.	✓			

37.I can always achieve my goals.	✓			
38.I actively engage in professional development by attending training programs.	✓			
39.I actively engage in professional development by participating in the teaching supervision team.	✓			
Teachers' Competence	+1	0	-1	Suggestion
40.I am competent in my teaching knowledge.	✓			
41.I am competent in my teaching skills.	✓			
42.I am competent in my teaching methods.	✓			
43.I am competent in my digital knowledge.	✓			
44.I am competent in my digital skills.	✓			
45.I am responsible for being competent.	✓			
46.I motivate myself to become more competent.	✓			
47.I have strong professional competence.	✓			
48.I am competent in integrating both soft and hard skills to complete my tasks.	✓			

49.I have strong behavioral competence.	✓			
50.I maintain a positive attitude towards my job.	✓			
51.I have personality traits that help me fulfill my job effectively.	✓			
52.I have strong self-regulation.	✓			
53.I am competent in maintaining balance in my professional life.	✓			
Teachers' Self-Efficacy	+1	0	-1	Suggestion
54.I am a successful teacher.	✓			
55.I have a good relationship with my school.	✓			
56.I have a good relationship with my colleagues.	✓			
57.I have a good relationship with my students.	✓			
58.I have strong adaptive abilities.	✓			
59.I can handle challenges effectively.	✓			
60.I am open to innovation.	✓			
61.I am positive about new plans.	✓			
62.I can cope with obstacles.	✓			

Teachers' Job Satisfactions	+1	0	-1	Suggestion
63.I am satisfied with my work environment.	✓			
64.I am satisfied with my school.	✓			
65.I am satisfied with my colleagues.	✓			
66.I am satisfied with my students.	✓			
67.I am happy when appreciated.	✓			
69.I am happy when my students do well.	✓			
70.I am satisfied with the benefits and allowances provided by my job.	✓			
71.I am satisfied with my salary.	✓			
72.I am satisfied when I have the opportunity to be promoted in my career.	✓			
73.I am satisfied with my accomplishments as a teacher.	✓			

The content validity was assessed by experts. The IOC results indicated that the content validity for both parts was 1 and 1 (respondent demographic information and the items on the professional identity of vocational college teachers in Fujian Province, respectively). The overall item-objective congruence (IOC) was 1, showing that the

items were highly consistent with the study's objectives. Further details are shown in Table 1.

Table 1 Content Validity as Evaluated by Experts Item-Objective Congruence (IOC)

	Item – Objective congruence (IOC)
Demographic Information	1
Professional Identity of Vocational College Teachers in Fujian Province	1
Teacher Self-perception	1
Teacher's Roles	1
Teaching Performance	1
Teacher Self- Efficacy	1
Teachers' Job Satisfaction	1

Biography

Name	Dong Lin
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