The impact of professional identity on teachers' professional well-being: The mediating role of social support

check for updates

(iD) **Haiying Zhang[1]**
(iD) **Sen Xie[2+]**

[1,2]International College, Krirk University, Bangkok 10220, Thailand.
[1]Email: 956504980@qq.com
[2]Email: xie.sen@email.krirk.ac.th

(+Corresponding author)

ABSTRACT

This study explores how professional identity affects professional well-being, examining whether social support mediates between the two variables. The convenience sampling method was adopted. A total of 1,321 valid data points were selected from five undergraduate institutions in Hebei Province. This article refers to the three scales and uses SPSS 24.0 and AMOS 24.0 software to analyze the data. Professional identity positively impacts both professional well-being and social support. Social support has a positive impact on professional well-being and plays a partial mediating role. There is a significant relationship among the variables, and social support partially mediates the relationship between professional identity and professional well-being. The sampling scope is limited to some undergraduate institutions in Hebei Province, which may affect the generalizability of the research. It provides valuable practical guidance for enhancing professional well-being, such as strengthening teachers' professional identity and optimizing social support.

Contribution/ Originality: This study provides theoretical and practical bases for enhancing teachers' professional well-being and is conducive to promoting attention and research on teachers' professional development.

1. INTRODUCTION

1.1. From the Perspective of Policy Guidance, Improving Teachers' Professional Happiness is Beneficial for Stabilizing the Teaching Staff

The Communist Party of China's (CPC) Central Committee and the State Council released "Opinions on comprehensively deepening the reform of the construction of the teaching staff in the new era" in 2018. The document clarified that teachers should be happy in their jobs, that the welfare and social status of people's teachers should be improved, and that a social culture that values education and respects teachers should be created. The State Council and the CPC Central Committee released China's Education Modernization 2035 in 2019, which also strongly emphasized efforts to elevate teachers' standing in the community, politics, and profession while steadily raising their level of recognition [1]. General Secretary Xi [2] at the Zero National Congress of the Communist Party of China in Beijing on October 16, 2022, clearly stated that the government should make education suit the needs of citizens. To continue the social norm of valuing teachers and placing a high value on education, we must prioritize education

162

and develop a pool of highly qualified teachers. Maintaining a stable teaching staff today improves teachers' job satisfaction and professional happiness.

The Chinese government's top policy priority is the ongoing enhancement of teachers' work-related satisfaction and professional happiness in education, and for teachers to be increasingly respected once again. This exemplifies the Chinese Communist Party's and the government's commitment to the well-being of teachers.

1.2. Happiness is the purpose of life and the eternal theme of human existence, as well as the ultimate and highest goal of education

Marx and Engels [3] once stated that the result of the entire historical development is that everyone pursues happiness, an indisputable principle in everyone's consciousness and feelings. The 21st century is an era of pursuing happiness. Scholar Huang [4] believes that the world of education is vast, and teachers bear the vital mission of national prosperity and rejuvenation. Teachers are a valuable resource for educational progress. According to scholars Lu and Cheng [5], teachers must be happy in their careers to perform well in the classroom.

In 2020, the Organisation for Economic Cooperation and Development (OECD) included teacher professional well-being assessment as an essential component of PISA 2021 for the first time, providing theoretical reference and practical guidance for the study of teacher professional well-being in China. Pursuing benefits and avoiding harm, seeking happiness in the near term, and avoiding hardship in the long term, is an instinctive response to the human pursuit of happiness, as well as a spiritual expression of seeking goodness and avoiding evil in human social attributes, and putting people first.

1.3. Since the Exploration of Education, Education Aimed at Happiness Has Also Been Very Appealing in the Rich Records of Education

Sukhomlinsky and Zhao [6] noted that education aims to create happy individuals. Tao [7] also pointed out that cultivating students who surpass themselves is the greatest happiness of teaching work. Ye [8] once said, "Every teacher who loves life and their own life will directly experience the professional happiness of being a teacher through their daily educational and teaching activities. Ludwig Andreas Feuerbach, a materialist philosopher, similarly noted in 1984 that life and pleasure are fundamentally the same and that seeking happiness is the goal of all things. According to scholar Tan [9], the moral category of all educators is happiness, and happiness includes justice, compassion, obligation, conscience, the beginning and end of personality, and the connections linked with them.

1.4. From a Reality-Driven Point of View, Teachers are Facing More and More Serious Challenges

In the eyes of the broad masses of Chinese people, teachers have a high social status, which is also sacred. Most teachers are knowledgeable, have a high socioeconomic status and income, and can enjoy more extended vacations (winter vacation and summer vacation). The Chinese government and education authorities have strongly supported education in recent years, significantly utilizing money, regulations, and other measures. The degree of reform is increasing, yet teachers' happiness is barely noticeable. Thus, further investigation of teachers' professional status is paramount to analyze the fundamental reasons for their lack of experienced happiness.

In the late 1990s, the government implemented reform measures, and universities steadily promoted enrollment expansion. The technology industry was also developing, and logistics were gradually socialized [10]. However, the Tencent Education [11] "Teacher Survival Survey Report" surveyed about 4.12 million teachers, and the results showed that nearly 50% of teachers even said they did not want their children to pursue a teaching career [11]. The two principal areas of pressure that university instructors face are professional title assessment and scientific research. Scholar Liu [12] conducted a survey which revealed that 42.9% of university instructors sleep between 10 and 12 PM every night, while 21.6% of teachers sleep after noon. Teachers sometimes work overtime on holidays and endure an extreme lack of sleep. In addition, teachers take on other social roles, such as those of parents and children, and

the intersection of these roles causes a range of emotional responses and negative impacts, including fatigue on the job, teacher turnover, and a decline in one's professional attractiveness.

Consequently, there is a pressing need to study the mechanisms and variables that influence professional well-being. Student development and the quality of education are impacted by professional identity. It is directly related to the professional well-being of teachers. This study aims to pay attention to the teachers' professional status and analyze the relationship between macro- and micro-factors to improve the teachers' professional well-being.

2. LITERATURE REVIEW AND THEORETICAL BASIS

The greater the degree of professional identity university instructors hold, the more thoroughly and scientifically they will comprehend the importance and function of their work [13]. Social support can help teachers experience more positive emotions in their careers [14]. This study suggests that social support mediates teachers' well-being and professional identity, with the former having a favorable impact on the latter.

2.1. The Connotation of Professional Identity

What Kind of Person Am I? Where am I from? Where am I heading? This is a subject of human settlement, but it is also at the heart of human philosophy to understand the universe and oneself. The philosophical proposition of "understanding oneself" proposed by the ancient Greek philosopher Socrates is also a manifestation of human identity with the "self" [15] and professional identity provides a solution to the issue of "Who am I right now?"

In addition to being a process of identity creation for teachers regarding their own duties and role execution, teacher professional identity refers to the teachers' perception of "who we are" or "what we think we are" [16]. The alignment of one's personal principles, professional aspirations, and surroundings determines this process and its outcome. Mawhinney and Xu [17] showed that the degree to which instructors actively participate in their jobs is evaluated, and that teachers' professional identity is assessed based on specific external requirements. Wei [18] believes that professional identity is a process, realm, and degree of identification, as well as a method of gradually developing and confirming one's role through personal experience. According to Yu's [19] proposal, a teacher's professional identity is derived from their ability to view and assess the profession positively and their genuine acceptance of it.

Different people place different values on a professional identity. Three criteria will be used in this study to identify professional identity: First, the objectives of a teacher's professional identity are education, teaching, or the instructors themselves. Second, the teaching profession is a dynamic activity, which aligns with the idea that professional development for teachers should be viewed as an ongoing process. Teachers' professional identities will be rebuilt and reexamined in light of their unique situations, personal characteristics, and unforeseen developments. Thirdly, the ongoing interactions between teachers and their surroundings shape their sense of self as professionals. As a result, the development of a positive emotional state and the degree to which professional cognition and emotional experience are recognized are tied to teachers' professional identity.

Professional identity theory forms the basis of professional identity. This hypothesis investigates university instructors' combined cognitive, emotional, and behavioral inclinations toward their careers. Your sense of professional identity greatly influences your sense of well-being and contributes to the long-term growth of the teaching profession.

2.2. The Connotation of Social Support

Studies on social support have their roots in the late 19th century in the work of French sociologist Durkheim, who found a correlation between social support and suicide [20]. He noticed that the lack of close interpersonal relationships was an essential trigger for suicidal behavior. He thus began studying social support [21] until the concept of social support was first proposed by Lashke after 1970 [22]. Subsequently, social support has gradually

been introduced into multiple fields of sociology, including education. Currently, there is no consensus on the definition of its connotation.

Cullen [23] asserts that social support originates from social networks, communities, and individuals receiving material and spiritual assistance from friends and family. According to Sarason [24], social support is an opportunity for peer socialization. Olsson [25] defines social support as the social aid provided in formal support groups or informal assistance by non-professionals. Wang and Mei [26] and others describe the term "social support" as the various types of material or spiritual help that an individual receives from their social network. Fan, et al. [27] divide social support into two types: formal and informal, that is, support from official institutions like the government and support from informal institutions like family. This classification method uses supported sources as the basis for classification, which is beneficial for comparative research on different sources of support.

Social support can be defined and divided from many different perspectives, and a unified standard has not been formed, showing various characteristics. This study suggests that social support provides free assistance to vulnerable groups through particular material and spiritual means within a specific social network [28]. From the measurement perspective, the operational definition of social support refers to the different kinds of support university teachers receive from their interactions in other social relationships with various aspects of society (family, coworkers, students, etc.). These supports can help teachers meet their work needs or improve their ability to adapt to the teaching environment. Simultaneously, it considers the extent to which social support is utilized by university instructors and the degree to which social support is influential. The objective of stress relief and mental health promotion is accomplished by successfully releasing personal emotions.

Social Support Theory is the theoretical foundation of social support, which holds that individuals obtain varying degrees of support through contact or indirect relationships with others and actively cope with stress and solve various difficulties in life. Teachers can seek help from others when encountering problems and challenges, and actively support and encourage others. There is genuine support among people. University instructors find it challenging to manage and eventually burn out physically and psychologically due to the combined strain of tight social assessment standards and complicated professional obligations. They can only feel content in their careers with the combined backing of society's objective and subjective elements. As a result, this assistance is essential to enhancing teachers' professional well-being.

2.3. The Connotation of Teachers' Professional Happiness

In dialectical materialism and historical materialism analysis, Marxist ethics concludes that the ultimate result of human survival and development is happiness, which reflects subjective thoughts and feelings about the objective world [29]. The study's viewpoints and interpretations of happiness in various circumstances have many distinct and varied features. According to some academics, the history of human civilization is essentially the tale of people continuously pursuing their own happy lives from an ethical standpoint [30].

The term 'teacher happiness' was first used in a report by the scholar Scott [31]. The OECD [32] published an article titled "Attracting, Cultivating, and Retaining High-Quality Teachers." Since then, research on the happiness of the teaching profession has gradually become a pivotal topic. American scholar Diener [33] believes that happiness is the total assessment of a person's life by assessors using preset standards. Peng et al. [34] argue that happiness is a pleasant psychological experience regarding their survival and growth status because of the combined influences of the objective environment and human goals and principles. Wang [35] believes that when people engage in a particular profession, the happiness experience in their career is the sense of occupational happiness, which is a positive experience for individuals to achieve their own goals, ideals, needs, and potential. Xiao [36] believes that, measured by one's standards, the happiness experience that teachers encounter in their teaching work is the professional happiness of teachers.

According to the current research, professional happiness is an individual's subjective assessment of their experience in reaching objectives and finding fulfillment in their career. In contrast, happiness is an individual's subjective experience and appraisal of their goals and life satisfaction. As a positive experience, teacher professional happiness refers to achieving goals, material and spiritual satisfaction, subjective initiative, individual value realization, objective social unity, and sustained professional development by teachers in fulfilling professional norms and job responsibilities. At the same time, teachers also need to maintain a positive attitude and evaluation in their professional lives. This article studies the professional happiness of teachers from four dimensions: emotional happiness, professional happiness, interpersonal happiness, and physical and mental happiness.

The theoretical basis of occupational happiness is the hierarchy of needs theory proposed by the American social psychologist [37]. Maslow believed that a person's value system manifests as two types of needs. One type is low-level or physiological needs, which gradually weaken as the biological lineage moves in a positive direction; the other type is advanced needs, which gradually emerge as the potential of organisms evolves [38]. From low to high, there are five categories of human needs: physical security, social respect, safety, and self-actualization [39]. Humans want to attain high-level demands when their low-level needs are satisfied. To attain teachers' professional well-being, Maslow's hierarchy of needs theory should be the foundation for this article's examination of the beneficial influence of professional identity on teachers' well-being.

3. RESEARCH FRAMEWORK, RESEARCH SUBJECTS, RESEARCH HYPOTHESES, RESEARCH TOOLS, AND RESEARCH PROCEDURES

3.1. Research Framework

The research framework is illustrated in the chart below. Professional identity is an independent variable, professional well-being is a dependent variable, and social support is an intermediary variable.

Figure 1 illustrates a framework exploring the impact of professional identity on teachers' well-being, mediated by social support, while highlighting causal links for hypothesis validation.
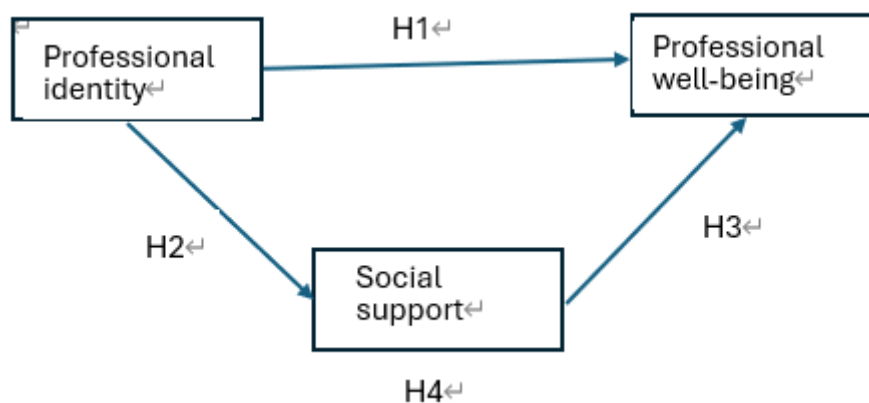

Figure 1. Research framework: The influence of professional identity on teachers' professional well-being: The mediating role of social support.

3.2. Research Hypotheses

Based on the above research framework, this study proposes the following research hypotheses:

H_1: *Professional identity has a positive effect on teachers' professional well-being.*

H_2: *Professional identity has a positive effect on social support.*

H_3: *Social support positively affected teachers' professional well-being.*

H_4: *Social support mediates the relationship between professional identity and teachers' professional well-being.*

3.3. Research Subjects

Teachers from five undergraduate-level institutions in Hebei Province, China, served as the study subjects of this research. Hebei Province is a province in China, with its capital being Shijiazhuang. As of June 21, 2024, 129 universities in Hebei Province, including 63 undergraduate institutions. The number of in-service college teachers is huge. This study used a convenience sampling mode in non-random sampling to survey five universities in Hengshui City and Shijiazhuang City.

Table 1. Basic information about five universities.

University	Affiliations	Public/Private	Category	Location	Number of teachers
Hengshui university	Provincial department of education	Public	A full-time general undergraduate college was jointly built by the province and the city and is mainly managed by the city.	Hengshui	1432
Shijiazhuang university	Provincial department of education	Public	A full-time public undergraduate college approved by the Ministry of Education	Shijiazhuang	1381
Hebei academy of fine arts	Provincial department of education	Private	A regular full-time undergraduate art college	Shijiazhuang	2278
Hebei university of engineering science	Provincial department of education	Private	A full-time undergraduate college	Shijiazhuang	1100
Huaxin college of Hebei geo university	Provincial department of education	Private	A full-time general undergraduate college and university, an independent college	Shijiazhuang	577

Table 1 presents the basic information of five universities in Hebei Province, namely Hengshui University, Shijiazhuang University, Hebei Academy of Fine Arts, Hebei University of Engineering Technology, and Huaxin College of Hebei GEO University. The information covers the universities' affiliations, nature of operation, category, location, and faculty size.

3.4. Research Tools

3.4.1. Scale of Professional Identity

Based on the findings of studies conducted by academics like Tang [40] and Wei [41], this study uses the single-dimensional, six-item teacher professional identity measure developed by Pan [42]. Experts and researchers' empirical studies have demonstrated that the Occupational Identity Scale's Cronbach's Alpha value is higher than 0.8, indicating a high degree of dependability. A five-point evaluation system is used: 1 denotes total inconsistency, 2 is slightly inconsistent, 3 is uncertain, 4 is relatively consistent, and 5 is complete consistency.

Table 2 presents the Professional Identity Scale from Pan [42]. It includes six scale items (A1 - A6) to measure professional identity. These items cover various aspects, such as the sense of value, pride, emotional reactions, and the willingness to identify as a university professor.

Table 2. Professional Identity Scale.

Variable question	Number	Scale item
Professional identity	A1	I frequently feel valued by people because I am a university professor.
	A2	Teaching at a university makes me proud.
	A3	I find it offensive when someone falsely attacks the teaching community.
	A4	Working as a teacher at a university will help me understand the worth of my life.
	A5	I am thrilled to witness or hear expressions of appreciation for the teaching profession.
	A6	I am not afraid to tell people I work as a university professor.

Source: Pan [42] used the professional identity scale.

3.4.2. Social Support Scale

This study utilizes the Social Support Scale developed by Chen [43]. After conducting empirical research, the Cronbach's Alpha value for the social support scale is 0.980, indicating high reliability. A 5-point integration strategy is employed, where the points correspond to complete, relatively consistent, uncertain, comparative, and completely inconsistent, respectively.

Table 3. Social support scale.

Variable dimension	Item number	Scale item
Colleagues support	CT1	Colleagues can provide me with helpful information.
	CT2	Colleagues will show concern for me.
	CT3	Colleagues will provide me with valuable suggestions for solving problems.
	CT4	I can share happiness and sadness with my colleagues.
	CT5	My colleagues can provide me with practical assistance to do a good job.
	CT6	Colleagues will praise and appreciate me.
Superior support	CS7	Superior can provide me with helpful information.
	CS8	Superiors will show concern for me.
	CS9	Superiors will provide me with valuable suggestions for solving problems.
	CS10	Superiors can comfort and encourage me.
	CS11	To do a good job, my superiors can provide me with practical assistance, such as contacts, funds, condition equipment, etc.
	CS12	Superiors will praise and appreciate me.
Family support	CJ13	Family can provide me with helpful information.
	CJ14	My family will show concern for me.
	CJ15	My family will provide me with valuable suggestions for solving the problem.
	CJ16	I can share happiness and sadness with my family.
	CJ17	My family can provide me with practical assistance to do a good job.
	CJ18	My family will praise and appreciate me.
Friends support	CP19	Friends can provide me with helpful information.
	CP20	Friends will show concern for me.
	CP21	Friends will provide me with valuable suggestions for solving problems.
	CP22	I can share happiness and sadness with my friends.
	CP23	My friends can provide practical assistance to do a good job.
	CP24	Friends will praise and appreciate me.

Source: The scale used by Chen [43] was used in this study.

Table 3 presents the scale of social support, which has four dimensions. One of these dimensions includes six items related to colleague support; the superior support dimension contains six items; the family support dimension also contains six items; and the friend support dimension includes six items. Thus, this scale consists of a total of 24 items.

3.4.3. Teacher Professional Well-Being Scale

This study uses the scale from Chen [43]. Experts and researchers' empirical studies have concluded that the Teacher Professional Happiness Scale has strong reliability, with a Cronbach's Alpha score greater than 0.8. Five points are assigned: one for complete non-compliance, two for comparative non-compliance, three for uncertainty, four for comparative compliance, and five for full compliance.

Table 4. Teacher professional well-being scale.

Variable dimension	Number	Scale item
Emotional happiness	DQ1	I am generally passionate about what I do.
	DQ2	I find my work to be enjoyable.
	DQ3	Every day, labor seems exhausting and never-ending.
	DQ4	I find my work to be gratifying.
	DQ5	I am happy where I work right now.
Professional happiness	DZ6	I am capable of handling any task at work.
	DZ7	I enjoy setting high standards for myself at work.
	DZ8	I believe that when handling work-related challenges, I am better than most individuals.
	DZ9	I have a strong interest in my work.
	DZ10	I can voice my own opinions on complex topics.
Interpersonal happiness	DR11	My coworkers and I have mutual trust in one another at work.
	DR12	To finish the assignment, my coworkers and I collaborated effectively.
	DR13	My managers have complete faith in me.
	DR14	I am happy with how my supervisors manage the work.
Physical and mental happiness	DR15	My work wears me out both mentally and physically.
	DR16	I frequently experience signs of illness at work, including headaches and sleeplessness.
	DR17	I frequently struggle to focus when working.
	DR18	My fatigue from work frequently prevents me from thinking clearly about complicated issues.
	DR19	I frequently feel incapable of managing my work.

Source: The scale refers to Chen [43], which was used in this study.

Table 4 presents the scale of professional well-being, which has four dimensions: the emotional happiness dimension includes five items, the professional happiness dimension consists of five items, the interpersonal happiness dimension contains four items, and the physical and mental happiness dimension consists of five items.

3.5. Research Procedures

The researcher is acquainted with the colleges and universities in Hengshui and Shijiazhuang, as well as those in Hebei Province, where she works. The researcher examined the official websites of five institutions beforehand to gain a basic understanding of the operational environment and the professional circumstances of the teachers in each institution. The three scales of professional identity, social support, and teachers' professional well-being were combined into a total scale. This total scale was named the College Teachers' Professional Ability Evaluation Scale, which contained 49 items. The questionnaire was completed online and printed offline in a paper version. The researcher contacted the leaders and teachers of the five institutions in advance to clarify the matters that needed attention when filling out the questionnaire and the instructions for identifying invalid questionnaires. It is necessary to complete 49 questions within 15 minutes for the questionnaire to be considered valid.

The questionnaire survey will be conducted from May to July 2024, and 1,400 people will be contacted by non-random sampling. After collecting the questionnaires, 1,321 people completed the questionnaire, and the effective recovery rate reached 94%. SPSS 24.0 and Amos 24.0 were used for data analysis. The relevant validity and reliability tests were conducted to objectively confirm the validity and reliability of the questionnaire using exploratory factor

analysis. The statistical data analysis also includes standard techniques for testing bias, correlation, and mediation effects.

4. ANALYSIS OF THE RESEARCH RESULTS

4.1. Analysis of the Reliability and Validity of the Variables of Teacher Professional Identity, Teacher Professional Happiness, and Social Support

4.1.1. Analysis of the Reliability of the Variables

This paper used the cloned Bach α coefficient method to test the scale's reliability. The Cronbach's α coefficient ranges from 0 to 1 and is a widely utilized dependability analysis coefficient appropriate for scale data analysis. The greater the alpha coefficient, the greater the average correlation coefficient between every variable item, and the better the internal reliability. An alpha score between 0.7 and 0.8 in the Cronbach test shows adequate internal reliability and strong internal consistency. In contrast, an alpha value of more than 0.8 in the empirical analysis implies high internal reliability and good internal consistency. We should consider rebuilding the scale when the α value is between 0.7 and 0.8, which suggests low internal consistency. Simultaneously, the item total correlation coefficient depicts the basic correlation coefficient between the measuring item's total score and the remaining items. A Cronbach's α after eliminating an item must be lower than the dimension reliability coefficient; if it is greater than 0.5, the questionnaire item has good reliability; if not, the corresponding item has to be eliminated. The following is a summary of the reliability analysis results for each item on the scale:

Table 5. Reliability analysis of teacher professional identity.

Variables	Number	Corrected item & total correlation	Cronbach's α value after deleting the item	Cronbach's α value	Items in total
Professional identity	A1	0.736	0.922		
	A2	0.855	0.906		
	A3	0.783	0.916	0.928	6
	A4	0.788	0.915		
	A5	0.805	0.913		
	A6	0.781	0.916		

Table 5 illustrates that all aspects of professional identity have Cronbach alpha coefficients of more than 0.7, indicating a high degree of internal consistency. Each subject's "Cronbach's α after deleting the topic" is less than the original impact factor's Cronbach's α coefficient, and the CITC is more than 0.5, indicating excellent and good reliability for each dimension. This applies to the following analysis.

Table 6. Reliability analysis of social support.

Variables	Number	Corrected item & total correlation	Cronbach's α value after deleting the item	Cronbach's α value	Items in total
Colleagues support	CT1	0.730	0.915		
	CT2	0.853	0.897		
	CT3	0.771	0.909	0.922	6
	CT4	0.765	0.909		
	CT5	0.772	0.909		
	CT6	0.774	0.909		
Superior support	CS7	0.715	0.904		
	CS8	0.722	0.904		
	CS9	0.747	0.900	0.913	6
	CS10	0.677	0.909		
	CS11	0.887	0.882		
	CS12	0.846	0.888		
Family support	CJ13	0.703	0.932	0.933	6

Variables	Number	Corrected item & total correlation	Cronbach's α value after deleting the item	Cronbach's α value	Items in total
	CJ14	0.834	0.916		
	CJ15	0.726	0.930		
	CJ16	0.830	0.917		
	CJ17	0.855	0.914		
	CJ18	0.880	0.911		
Friends support	CP19	0.739	0.923		
	CP20	0.726	0.925		
	CP21	0.811	0.914	0.929	6
	CP22	0.776	0.918		
	CP23	0.852	0.909		
	CP24	0.856	0.908		

Table 6 illustrates that all social support variables have Cronbach's alpha values greater than 0.7 and strong internal consistency. For each subject, the coefficient of "Deleted Cronbach's α" is less than that of the original coefficients, and the CITC is more than 0.5, indicating that the reliability of each dimension is higher, demonstrating good reliability for follow-up analysis.

Table 7. Reliability analysis of teacher professional happiness.

Variables	Number	Corrected item & total correlation	Cronbach's α value after deleting the item	Cronbach's α value	Items in total
Emotional happiness	DQ1	0.815	0.866		
	DQ2	0.788	0.872		
	DQ3	0.741	0.882	0.901	5
	DQ4	0.715	0.888		
	DQ5	0.714	0.889		
Professional happiness	DZ6	0.787	0.920		
	DZ7	0.773	0.922		
	DZ8	0.776	0.922	0.930	5
	DZ9	0.878	0.903		
	DZ10	0.885	0.902		
Interpersonal happiness	DR11	0.744	0.898		
	DR12	0.830	0.867	0.908	4
	DR13	0.812	0.873		
	DR14	0.782	0.884		
Physical and mental happiness	DR15	0.848	0.908		
	DR16	0.813	0.914		
	DR17	0.808	0.915	0.929	5
	DR18	0.801	0.916		
	DR19	0.815	0.914		

Table 7 illustrates that each variable of teachers' professional well-being has a Cronbach's α coefficient of more than 0.7, indicating a high degree of internal consistency. The data suggests that the dependability of each dimension is good, with the "Cronbach's α after deleting the topic" for each subject being less than the Cronbach's α coefficient of the original impact factor, and the CITC being more than 0.5. This is relevant to the analysis that follows.

4.1.2. Validity Test

Effectiveness, or validity, is how a measuring tool accurately captures the characteristic to be assessed. The common structural validity test technique used in this study may be confirmed by factor analysis. To determine if the sample data fits the fundamental requirements for factor analysis, KMO and Bartlett's sphericity test must be performed. Generally, a KMO value above 0.9 is ideal, 0.8–0.9 is optimal, 0.7–0.8 is appropriate, 0.6–0.7 is not perfect, 0.5–0.6 is hardly relevant, and less than 0.5 is inappropriate for usage. The approximate chi-square value of Bartlett's sphericity test is significant (the significance probability result is less than 0.001), indicating that the research

variables are independent and that factor analysis can be carried out. If the KMO value exceeds 0.80, factor analysis can be conducted.

The findings of the exploratory factor analysis using SPSS 24.0 for the scale's KMO and Bartlett's sphericity test are as follows:

Table 8. Validity analysis results of teacher professional identity.

KMO and Bartlett's test		
KMO measure of sampling adequacy		0.927
Bartlett's test of sphericity	Approximate chi-square	4304.302
	Degrees of freedom	15
	Significance	0.000

Table 8 illustrates that the teacher's professional identity of the KMO is 0.927, and factor analysis is possible when the KMO is greater than 0.8. Bartlett's sphere degree test yields an estimated chi-square value of 4304.302, a significance probability of 0, and a significance degree of less than 0.05. Conclusion: The survey results acquired are correlated, as seen by the considerable disparities between the identity matrix and the correlation coefficient matrix.

Table 9. Results of validity analysis of social support.

KMO and Bartlett's test		
KMO measure of sampling adequacy		0.966
Bartlett's test of sphericity	Approximate chi-square	26222.17
	Degrees of freedom	276
	Significance	0.000

Table 9 demonstrates that the KMO of the social support scales was 0.966, indicating that it may be subjected to additional factor analysis. The Bartlett's test of sphericity yielded an estimated chi-square value of 2622.170, a probability of significance of 0, and a degree of significance of less than 0.05. Conclusion: The survey results obtained are correlated, as seen by the considerable disparities between the identity matrix and the correlation coefficient matrix.

Table 10. Results of validity analysis of teachers' professional well-being.

KMO and Bartlett's test		
KMO measure of sampling adequacy		0.944
Bartlett's test of sphericity	Approximate chi-square	19851.710
	Degrees of freedom	171
	Significance	0.000

Table 10 indicates that the KMO value of the teacher professional well-being scale is 0.944. Additional factor analysis can be carried out. Bartlett's test of sphericity yielded an estimated chi-square value of 19851.710 and a significance probability of 0, which is less than the 0.05 significance level. Conclusion: The survey results obtained are correlated, as seen by the significant disparities between the identity matrix and the correlation coefficient matrix.

4.2. Common Method Bias Test

The Harman Single-Factor Test Method will be used in this investigation. The initial theory behind the Single-Factor Test Method was that, when method variation is high, most of the variance in the variables may be explained by extracting only one common factor, or a specific common factor, during exploratory factor analysis. In reality, all of the scale measurement questions are replaced with exploratory factor analysis questions, and the factor analysis findings are examined without orthogonal rotation. It can be concluded that there is significant standard method bias

if just one common factor is recovered or if the explanatory power of a particular common factor among several extracted common factors is rather substantial and surpasses the critical value of 40%.

Principal component analysis and exploratory factor analysis were used in this investigation. The findings indicate that thirteen standard components with eigenvalues larger than one were retrieved without vertical rotation. Of these, 23.856% of the variation was explained by the first principal component factor (the overall explanatory rate was 75.462%). It was concluded that there was no significant standard method bias in the survey data utilized in this study since it did not reach the crucial value of 40%.

4.3. Pearson correlation analysis between variables

Pearson's correlation coefficient was used for the correlation analysis. The correlation analysis was conducted on job happiness, professional identity, and social support, and the results are as follows.

Table 11. Person correlation coefficient analysis.

Variables	Mean standard	Standard deviation	Professional identity	Social support	Teacher professional well-being
Professional identity	3.50	1.01	1		
Social support	3.65	0.81	0.237^{**}	1	
Teacher professional well-being	3.63	0.82	0.306^{**}	0.232^{**}	1

Note: $^{**}\ p < 0.05$

Table 11 indicates the Pearson correlation coefficient analysis. The analysis reveals a significant positive correlation between the three latent variables. Professional identity, social support, and teacher professional well-being have respective means of 3.50, 3.65, and 3.63, and standard deviations of 1.01, 0.81, and 0.82. Thus, these data can serve as a foundation for further study and hypothesis testing.

4.4. Structural Equation Model Analysis

The structural model was established using AMOS 24.0, and the fitting results are as follows.
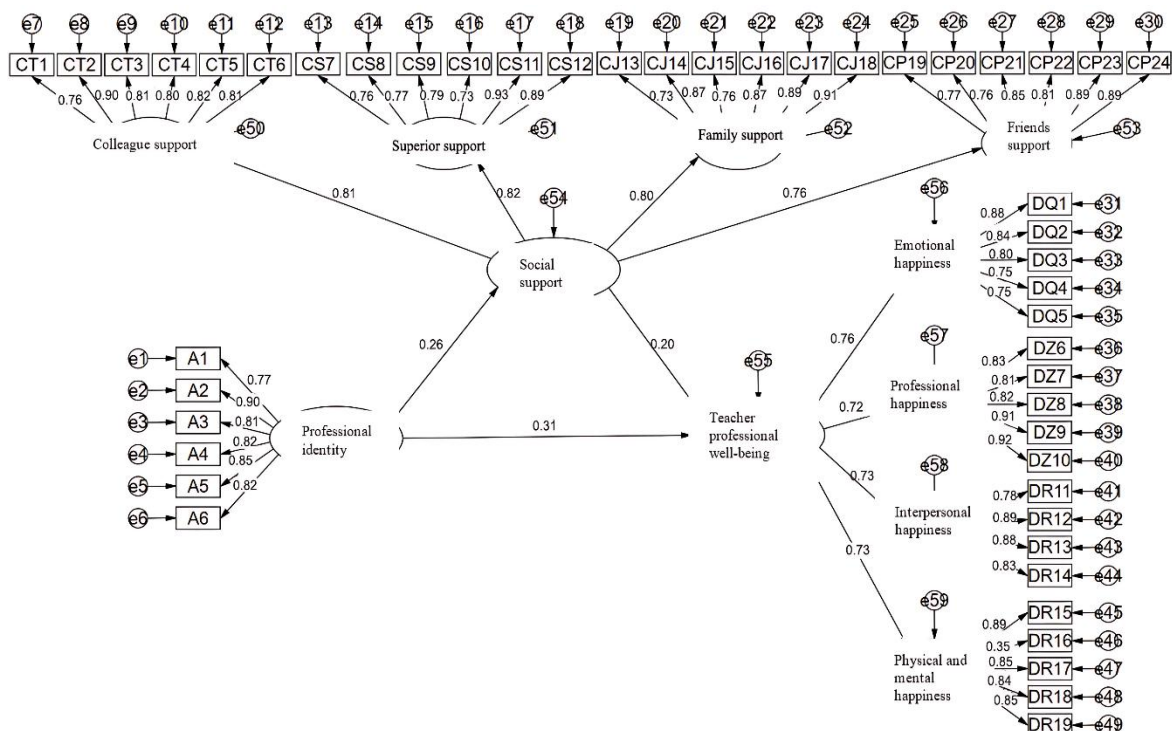

Figure 2. A structural equation model: the impact of professional identity on teachers' professional well-being.

Figure 2 illustrates a structural equation model analysing the impact of professional identity on teachers' professional well-being. The model uses arrows to represent hypothesised relationships between variables, helping researchers test and verify the impact mechanism. Theoretical assumptions.

Table 12. Analysis of fitting results of the structural equation model.

CMIN/DF	RMSEA	CFI	NFI	IFI
1.971	0.027	0.979	0.959	0.979

The Table 12 presents that in the structural model, the chi-square degree of freedom ratio is 1.971. In addition, the RMSEA is less than 0.08, with a value of 0.027. The CFI, NFI, and IFI values are all greater than 0.9, indicating that they meet the requirements of model testing and goodness of fit, and are suitable for subsequent hypothesis testing.

4.5. Hypothesis Verification of the Relationship between Variables

This study proposed corresponding hypotheses of positive relationships. To verify the direct causal relationships hypothesised in the research model, this study conducted a regression analysis using SPSS 24.0 software. The results are summarised as follows.

Table 13 presents the hypothesis verification results for variable relationships. The standardised path coefficients from professional identity to social support, professionalidentity to teacher professional well-being, and social support to teacher professional well-being are 0.261, 0.306, and 0.201, respectively. All paths have $p < 0.001$, confirming that all hypothesised relationships are established.

4.6. The Mediating Effect of Social Support on the Relationship Between Teacher Professional Identity and Teacher Professional Well-Being

When conducting the mediation effect test in this study, the Bootstrap method in AMOS was used for repeated sampling 5000 times. The 95% confidence intervals of Bias were corrected, and the Percentile was observed to determine whether the corresponding effect was significant by including 0. The results are summarised as follows.

Table 14 presents that occupational identity has an indirect impact of 0.052 on teachers' occupational well-being through the mediating role of social support. The direct effect value of

professional identity on teachers' professional well-being is 0.306, and the 95% confidence interval for deviation correction and percentile does not include 0, indicating a significant direct

impact. The 95% confidence intervals for bias-corrected and percentile do not include 0, and the mediation effect ratio is 14.48%, indicating significant indirect effects. The overall effect value is

0.359, the mediation effect ratio is 85.24%, and the deviation correction percentile and 95% confidence interval do not contain 0. These values suggest a substantial overall impact. Thus, if H4 is

Correct, social support is a mediator variable in the link between teachers' occupational well-being and their professional identity to some extent.

Table 13. Hypothesis verification results of the relationship between variables.

Path			Standardised path coefficient	Unstandardised path coefficient	Standard error	C.R.	P	Establishment status.
Social support	<---	Professional identity	0.261	0.211	0.026	8.254	***	Established
Teacher professional well-being	<---	Professional identity	0.306	0.273	0.03	9.2	***	Established
Teacher professional well-being	<---	Social Support	0.201	0.222	0.037	5.947	***	Established

Note: ***, p<0.001.

Table 14. Regression analysis results of the mediating role of「Teacher professional identity → Social support → Teacher professional well-being」.

Path		Effect Value	Standard Error	Bias-corrected 95% CI		Percentile 95% CI		Mediating Effect Ratio.
				Lower limit.	Upper limit.	Lower limit.	Upper limit.	
Indirect effect	Professional identity - Social support - Teacher professional well-being	0.052	0.012	0.031	0.079	0.029	0.077	14.48%
Direct effect	Professional identity - Teacher's professional well-being	0.306	0.036	0.233	0.286	0.235	0.376	85.24%
Total effect	Professional identity - Teacher's professional well-being	0.359	0.033	0.293	0.423	0.292	0.422	99.72%

5. CONCLUSION

5.1. The Relationship between Teacher Professional Identity and Teacher Professional Happiness

The results of this study demonstrate a strong positive relationship between teachers' professional well-being and their sense of self. Their influence on university instructors' sense of professional identity is a significant factor in determining their level of job satisfaction. Teachers can have this deep delight when they meet their needs, get emotional fulfilment via their profession, and show others how valuable they are. Teachers will be more satisfied with their jobs due to their increased professional identity. A positive correlation exists between the former and the latter, as seen by a β value and a P value of 0.306 (rounded) and less than 0.05, respectively, showing that teachers' feeling of professional happiness increases with their level of professional identity in the workplace. The current study argues that teachers' professional happiness positively correlates with their professional identity.

5.2. The Relationship between Teacher Professional Identity and Social Support

Social support and teachers' professional identities are positively correlated, which has a beneficial outcome. The relationship between the two is strong. This indicates that teachers with a strong sense of themselves as professionals are more likely to participate in social and academic activities. A positive attitude may attract more social support; teachers usually demonstrate professionalism and responsibility. This behaviour can encourage society and colleagues to provide more support and recognition. Individual teachers in pessimistic situations can still receive positive feedback and social support to help them overcome difficulties. From this, it can be seen that the β and P values are rounded to 0.261 and below 0.05, respectively. Thus, the hypothesis that positive professional identity influences social support is proven.

5.3. The Relationship between Social Support and Teachers' Professional Well-Being

This study demonstrates a substantial correlation between social support and teachers' professional well-being, suggesting that social support may contribute to teachers' professional well-being. Social support can help teachers feel cared for and recognised, alleviate their stress, and enhance their sense of job satisfaction; Practical assistance such as teaching resources and professional development opportunities, and administrative support can help teachers effectively reduce frustration and complete work tasks; Suggestions and guidance from colleagues and superiors can help teachers improve work efficiency and effectiveness, solve problems and challenges in their work, and effectively enhance workplace happiness. Therefore, this support can significantly affect teachers' job well-being, with β and P values of 0.201(rounded) and less than 0.05, respectively. Thus, this hypothesis is validated—social support improves teachers' professional well-being.

5.4. The Impact of Social Support on the Relationship between Professional Identity and Teacher Professional Well-Being

This study demonstrates that social support partially mediates the link between teachers' professional well-being and professional identity. College teachers' sense of professional well-being increases with their sense of professional identity; social support can directly support teachers' sense of well-being, relieving stress and increasing productivity; teachers' well-being will also be improved by their increased ability to handle challenges at work.

In conclusion, social support improves teachers' professional identity in the workplace and experienced well-being. The link between teachers' professional identity and well-being is thus thought to be mediated by social support. The interaction term of professional identity * social support positively impacts teachers' professional well-being. The mediating effect ratio was 14.48%, and the indirect effect value was 0.052. Thus, this conclusion has been thoroughly investigated and validated in this study.

REFERENCES

[1]   The Central Committee of the Communist Party of China & State Council, "China's education modernisation 2035 [EB/OL]," 2019. Retrieved: http://www.gov.cn/xinwen/2019-02/23/content_5367987.htm. 2019.

[2]   J. Xi, *Speech at the 20th national congress of the communist party of China*. Beijing: Xinhua News Agency, 2022.

[3]   K. Marx and F. Engels, *Complete works of Marx and Engels*. Beijing: People's Publishing House, 1960.

[4]   Y. Huang, *Research on the assessment and development of mathematics teachers' professional qualities*. Beijing: Science Press, 2021.

[5]   Q. Lu and Y. Cheng, "A research review on teachers' professional well-being," *Jiangsu Education Research*, vol. 3, pp. 27-29, 2008.

[6]   V. A. Sukhomlinsky and W. Zhao, *The heart of the teacher*. Beijing: Education Science Press, 1983.

[7]   X. Tao, *On the greatest happiness of teaching: Cultivating students who surpass oneself. In collected works of Tao Xingzhi*. Beijing: People's Education Press, 1983.

[8]   L. Ye, "Let the classroom radiate the vitality of life," *Educational Research*, vol. 9, pp. 3-8, 1997.

[9]   C. Tan, *Special topics in teacher ethics*. Beijing: Beijing Normal University Press, 2000.

[10]   R. Yuan, *Research on university human resource management*. Zhengzhou: Zhengzhou University, 2003.

[11]   Tencent Education, "Teacher's living condition survey report: Eighty percent of teachers say they are under great pressure," 2014. Retrieved: http://edu.qq.com/a/20140910/002030.htm. 2014.

[12]   W. Liu, *Research on the relationship between college teachers' work stress and their social support*. Harbin, China: Heilongjiang Academy of Social Sciences, 2009.

[13]   T. Sun, *The importance of teacher work: A scientific perspective*. Beijing: Sun Tingting, 2018.

[14]   B. Lam and B. Lam, *Social support giving and teacher development. In Teacher Development*. Singapore: Springer, 2019.

[15]   J. Brun, *Socrates (F. Yongqiang, Trans.)*. Beijing: The Commercial Press, 1997.

[16]   J. Alsup, *Teacher identity discourses: Negotiating personal and professional spaces*. Mahwah, NJ: Lawrence Erlbaum Associates, 2005.

[17]   H. Mawhinney and F. Xu, "Restructuring the identity of foreign-trained teachers in Ontario schools," *TESOL Quarterly*, vol. 31, no. 3, pp. 632-639, 1997.

[18]   S. Wei, "Teacher professional identity and teacher professional development," Master's Thesis, Qufu Normal University, 2005.

[19]   H. Yu, "A study on the status quo of young middle school teachers' professional identity: An investigation from middle schools in small cities in Hunan Province," Master's Thesis, Hunan Normal University, 2006.

[20]   C. Wang, "A study on case work intervening in the problem of lack of social support for disabled elderly in nursing homes," Master's Thesis, Guangxi Normal University, 2021.

[21]   É. Durkheim, *Emile Durkheim on morality and society*. Chicago: University of Chicago Press, 1973.

[22]   L. Lv, *Research on the influence of social support on the persistence behavior of physical exercise of the elderly under the mediating role of exercise commitment*. Shanghai: Shanghai University of Sport, 2021.

[23]   F. T. Cullen, "Social support originates from social networks, communities, and people receiving material and spiritual assistance from friends and family," *Journal of Social Issues*, vol. 50, no. 1, pp. 87-102, 1994.

[24]   I. G. Sarason, "Test anxiety, stress, and social support," *Journal of Personality*, vol. 49, no. 1, pp. 101-114, 1981.

[25]   I. Olsson, "Social support: Defining its role in peer socialization," *Journal of Social Psychology*, vol. 51, no. 3, pp. 215-228, 2016.

[26]   Y. Wang and Y. Mei, "A review of social support," *Knowledge Economy*, vol. 9, pp. 58-58, 2011.

[27]   C. Fan, Y. Jin, L. Zhong, X. Chen, K. Wu, and Q. Liu, "The social support system for elderly sports services in developed countries and its enlightenment to China," *Sports Science*, vol. 39, no. 4, pp. 39-50, 2019.

[28]   S. Xiao and D. Yang, "The influence of social support on physical and mental health," *Chinese Journal of Mental Health*, vol. 4, pp. 183-187, 1987.

[29]   G. Luo, *Marxist ethics*. Beijing: People's Publishing House, 1982.

[30]   Y. Chen, *On happiness in life*. Beijing: China Youth Publishing House, 1996.

[31]   D. Scott, "Teacher happiness and job satisfaction: A key to effective teaching," *Educational Research Journal*, vol. 19, no. 4, pp. 223-234, 1998.

[32]   OECD, "Attracting, cultivating and retaining high-quality teachers. Organisation for Economic Co-operation and Development," 2002. Retrieved: www.oecd.org. 2002.

[33]   E. Diener, "Subjective well-being," *Psychology Bulletin*, vol. 9, no. 53, pp. 542-575, 1982.

[34]   D. Peng, F. Ding, and H. Qi, "How to move from individualization to social integration: A study on the influence of social participation on youth well-being," *China Youth Study*, vol. 1, pp. 49-55, 2020.

[35]   L. Wang, "A narrative study on the professional well-being of male kindergarten teachers," Master's Thesis of Zhejiang Normal University, 2018.

[36]   J. Xiao, *Investigation and thinking on the professional well-being of primary school teachers*. Shanghai: East China Normal University, 2004.

[37]   A. H. Maslow, "A theory of human motivation," *Psychological Review*, vol. 50, no. 4, pp. 370-396, 1943.

[38]   X. Chen, "The application of Maslow's hierarchy of needs theory in enterprise recruitment," *Business*, vol. 2015, no. 41, pp. 28-28, 2013.

[39]   H. Bai, *On the application of Maslow's theory in life*. Hubei: Today's Hubei (Late Issue), 2013.

[40]   G. Tang, "Study on teacher professional identity and its development," *Journal of Educational Research*, vol. 22, no. 4, pp. 58-63, 2011.

[41]   S. Wei, "Teacher professional identity: A theoretical framework and empirical study," *Journal of Educational Science*, vol. 15, no. 3, pp. 45-50, 2008.

[42]   Y. Pan, "A Study on the professional identity, organizational identity and innovative behavior of university teachers," Doctoral dissertation of Southwestern University of Finance and Economics, 2014.

[43]   Y. Chen, "An empirical study on the relationship between social support and occupational well-being of university researchers: with self-efficacy as a mediator," Master's thesis of Zhejiang University of Technology, 2012.