The Changes in the Professional Identity of China's Basic Education Teachers

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Abstract: A cross-sectional historical meta-analysis of data for the recent decade indicates a consistent upward trend in the professional identity, values, and role perception, as well as the sense of belonging and behavioral tendencies, of these teachers. In addition, an analysis of the predictive power of societal indicators on teacher professional identity demonstrates that factors such as the proportion of consumer spending, educational investment, and the degree of urbanization significantly affect teachers' professional identity and its four constituent elements. While secondary and primary school teachers exhibit the most significant shifts in overall professional identity compared to their early childhood education counterparts, kindergarten teachers experience the greatest change in professional values, role perception, and professional behavioral tendencies. Cultivating the four components of teacher professional identity is essential to enhancing it as a whole.

Keywords: Teacher professional identity; Basic education teacher; Cross-temporal meta-analysis

1. Introduction

Teacher professional identity is formed through the integration of teachers' positive cognitions, experiences, and behavioral tendencies toward their profession and professional roles [1,2]. The 2024 National People's Congress and Chinese People's Political Consultative Conference highlighted the development of the teaching force as a foundational task, emphasizing the need to support and recruit exceptional individuals for active participation in education [3]. Therefore, understanding how to cultivate teachers' professional identity has become a topic of significant academic interest. Prior research, however, has often concentrated on teachers' professional identity at specific points in time, making it challenging to observe how this identity evolves alongside societal shifts and changes in educational environment. This study employs a cross-sectional historical meta-analysis to appraise the developmental trends in professional identity among Chinese basic education teachers over time, as well as the factors that affect it.

2. Problem statement

2.1. Changes in the professional identity of teachers in China

Chinese President Xi Jinping holds the work of teachers in high regard and has, on a number of occasions, stressed its significance. He has stated, "the people's teachers have the highest honor, and every teacher should cherish this honor" [4].

Beginning with the external environment, it represents practical conditions and the objective foundation upon which teachers' professional identity is formed. First, improvements in economic benefits can supply teachers with a reliable material base and contribute to a stable occupational standing. As one aspect, increases in teacher salary levels are pursued. By strengthening the guarantees surrounding teacher salaries and benefits, there has been, to some degree, a reduction in instances where teachers leave the profession owing to economic pressures; this action contributes to greater stability in the teaching workforce. As another consideration, the provision of additional welfare benefits for teachers is addressed. The overarching objective is to establish teaching as an attractive profession, one that individuals tend to pursue and remain in long-term, thereby strengthening teachers' sense of professional identity. Second, General Secretary Xi Jinping highlighted the necessity of raising teachers' political, social, and professional standing, establishing teaching as one of the most respected professions. First, enhancing teachers' political status should act as the foundation. It not only verifies the significance of their profession but, from the perspective of national education strategy, also amplifies their influence in schools and broader society, strengthening their professional identity and sense of responsibility. Second, improvements in teachers' social reputation should be a defining feature. It involves increasing teachers' professional reputation, their profession's attractiveness, and the allocation of social resources towards the profession. It is a direct outcome of advancements in their political and professional status. At the 2024 National Education Conference, General Secretary Xi Jinping explicitly stated that the entire Party and society should actively cultivate a positive climate of respecting teachers and valuing education. Elevating teachers' social standing can strengthen their professional identity and pride, motivating them to actively engage in education. Third, raising teachers' professional status holds critical significance. Teachers' professional standing intrinsically supports enhancements to their political and social standing. Since the 1990s, China has actively advanced the professionalization of teacher education, optimized the teacher education system, and intensified teacher training to facilitate and assist teachers' professional development.

The National Teacher Certificate Examination has witnessed a substantive surge in popularity, with applicant numbers increasing exponentially from 172,000 in 2012 to 11.442 million in 2022 [5]. Competition for new teaching positions is intense. In certain regions, dozens of candidates vying for a single opening have become commonplace. The first quarter of 2022 public recruitment in Chongqing, for instance, saw a peak competition ratio of 1:368 for teaching positions in Yuzhong District on the initial day of registration. Despite these gains in the professional standing and overall appeal of teaching in China, challenges remain. Certain teachers in rural areas, for instance, view the profession as a temporary "springboard" rather than a lifelong career. A survey conducted in Wudu District, Longnan City, Gansu Province, indicated that over half of such teachers expressed a definite desire to change professions, with 44% hoping to relocate to urban areas. Urban teachers, particularly those aged 30–49 with mid-level professional titles and 6–20 years of experience, often encounter career stagnation and significant pressure to advance, which can negatively affect their professional identity. In this light, it is necessary to understand the current state of teachers' professional identity and to identify effective strategies for its enhancement. This study, therefore, seeks to appraise the changing trends of

professional identity among basic education teachers in China in broader societal developments and ongoing reforms in teacher workforce development. The goal is to offer practical recommendations based on the analysis and discussion of relevant findings.

2.2. The factors influencing the changing trend of teachers' professional identity in China

First, regarding socio-economic circumstances, factors such as residents' consumption levels are indicating an upward movement concurrent with economic system reforms and the continued introduction of market-oriented elements. Meanwhile, salary levels for teachers are also increasing [6]. In addition, concerning work resources, adequate capital investment in education can improve the working environment for educators, offer richer teaching resources, and strengthen occupational security. For these reasons, an exploration into how socio-economic conditions influence teachers' professional identity warrants attention. Second, along with the sustained progress of urbanization in Chinese society, a policy concerning teacher rotation and exchange has been put into practice with the goal of optimizing the assignment of teachers between schools in urban and rural areas and realizing a balanced distribution of teaching personnel. Deficiencies in the support system and the variable work environments encountered during job rotation have the potential to decrease teachers' job satisfaction and affect their professional identity; such conditions might even contribute to teacher drain [7].

3. Research methods

3.1. Research tool: "Professional Identity Scale for Primary and Secondary School Teachers"

Contemporary literature on teacher professional identity in China primarily utilizes the "Professional Identity Scale for Primary and Secondary School Teachers" developed by Wei et al, comprising 18 items across four dimensions: professional values, role values, professional belonging, and professional behavioral tendencies. Professional values represent the positive appraisals teachers develop, through their professional activities, regarding the significance and worth of their chosen profession. Role values pertain to individual teachers' positive perceptions and assessments of the importance of the "teacher role" in their own lives. Professional belonging reflects the positive feelings and lived experiences individual teachers have concerning their connection to their profession. Professional behavioral tendencies concern teacher behaviors essential for task completion and the fulfillment of professional obligations, as well as behavioral tendencies that enhance professional effectiveness [3]. This scale employs a five-point Likert scale (1–5), where each item ranges from one to five points. Higher scores on each dimension, as well as a higher total score, signify a stronger teacher professional identity.

3.2. Literature retrieval

For inclusion in this meta-analysis, the selected literature was required to satisfy several criteria. First, consistency in measurement tooling was essential; all studies had to employ the "Professional Identity Scale for Primary and Secondary School Teachers" developed by Wei et al. (2013). Second, each study needed to report quantitative indicators for teacher professional identity, specifically offering the mean, standard deviation, and sample size for the overall score and its four factors. Third, the research participants were limited to basic education teachers in China. Fourth, the literature search concluded in December 2023. Finally, should the same author publish multiple papers utilizing identical sample data, only the paper presenting the most complete data

and having the earliest publication date was chosen.

3.3. Literature coding and data organization

The literature search, completed by December 2023, derived 122 qualifying papers. In this set, five papers reported data collected from two or more subject populations; these were thus divided, treating each population's data independently. The process resulted in a total of 127 data sets. The publication years for these papers ranged from 2015 to 2023. For samples where the data collection year was not explicitly stated, this year was estimated by subtracting two years from the publication year. Therefore, the overall data covers a 10-year period from 2013 to 2022 and represents a combined total of 74,027 teachers. To manage this information, Excel and SPSS 24.0 software were utilized for coding, inputting, and processing data from the 122 selected papers. For each included study, details such as the publication year, data collection year, the educational stage taught by the teachers, and fundamental data (including sample size, teacher professional identity scores, and the means and standard deviations for the four factors) were systematically coded and entered into the database.

3.4. The data sources of social indicators

This study draws upon eight key social indicators culled from the "China Statistical Yearbook" and the "China Education Statistical Yearbook" (missing data in the yearbooks can be supplemented with education statistics from the Ministry of Education). These indicators (resident consumption level, education funding, urbanization level) are employed to study the evolution of professional identity among Chinese basic education teachers in broader societal shifts, and to rigorously appraise the predictive capacity of these social indicators on teacher professional identity.

4. Results

Through the organization and analysis of collected data, this study seeks to shed light on temporal shifts in teacher professional identity. It can be achieved by analyzing general trends in teacher professional identity over time, alongside its relationship with the selected social indicators, and considering the changes and differences in teacher professional identity across different educational levels.

4.1. The professional identity of teachers in basic education in our country shows an upward trend with the changes of the years

Scatter plots (**Figures 1–5**) visually depict the changing trend of professional identity among Chinese basic education teachers between 2013 and 2022. The horizontal axis represents the year of data collection while the vertical axis denotes the aggregate professional identity score and the scores for each of its four dimensions. **Figure 1** indicates a year-over-year increase in the overall professional identity score of Chinese basic education teachers from 2013 to 2022. **Figures 2–5** similarly illustrate a generally increasing trend across the four dimensions of teacher professional identity over this period. The findings suggest a gradual, positive progression in the overall professional identity of Chinese basic education teachers over the years.
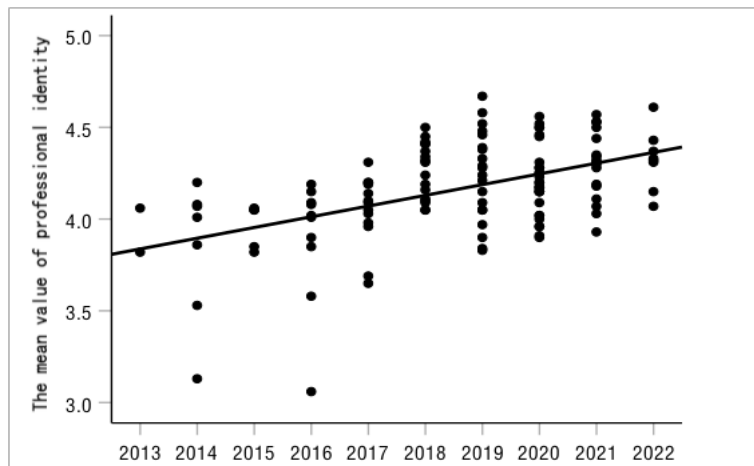
Figure 1. The changing trend of occupational identity in China from 2013 to 2022.
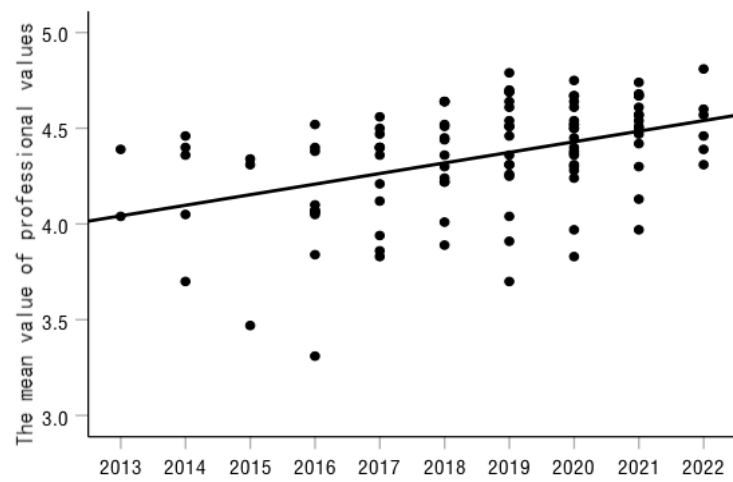

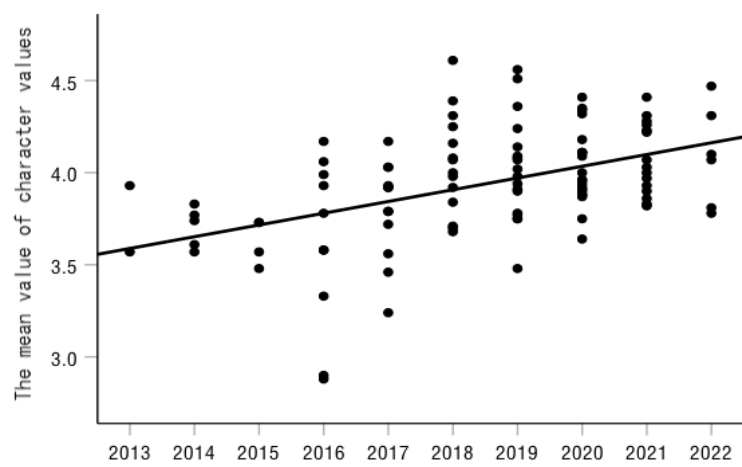**Figure 2.** The changing trend of occupational values in China from 2013 to 2022.

Figure 3. The changing trend of role-related occupational values in China from 2013 to 2022.
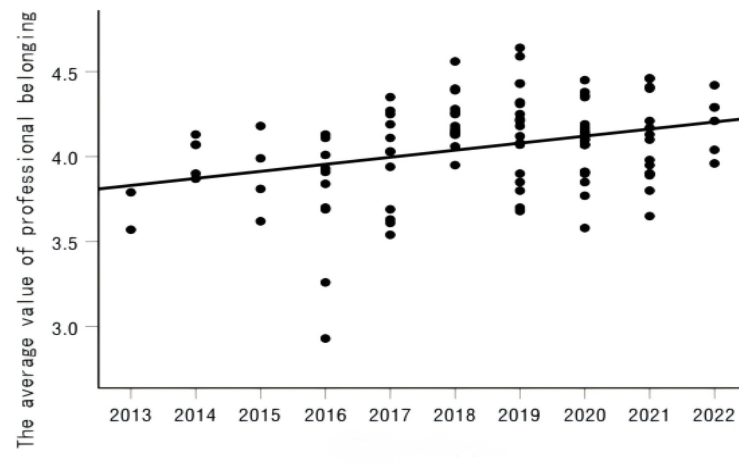
Figure 4. The changing trend of occupational belonging in China from 2013 to 2022.
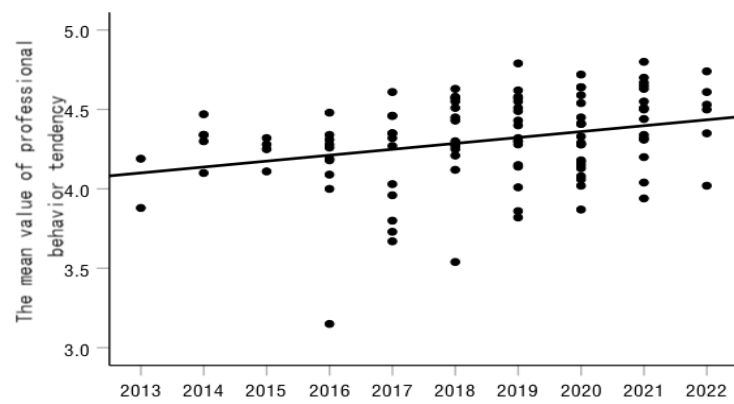

Figure 5. The changing trend of occupational behavioral tendencies in China from 2013 to 2022.

A correlational analysis was conducted to determine the relationship between years of experience and average professional identity scores among Chinese basic education teachers to determine the significance of temporal trends observed in the scatter plot. Results indicated a significant positive correlation between these two variables (r = 0.50, $P < 0.001$). Then, a simple regression analysis was performed to determine the effect of years of experience on professional identity. The analysis demonstrated that years of experience significantly and positively predicted changes in the average total score of professional identity (β = 0.50, $P < 0.001$; F = 42.49, $P < 0.001$), as well as in its constituent dimensions: professional values β = 0.43, $P < 0.001$; F = 22.99, $P < 0.001$), role values (β = 0.47, $P < 0.001$; F = 29.22, $P < 0.001$), sense of professional belonging (β = 0.33, $P < 0.001$; F = 12.87, $P < 0.001$), and professional behavioral tendencies (β = 0.30, $P < 0.01$; F = 10.33, $P < 0.01$).

To account for effects of sample size, a weighted least squares regression analysis was conducted, utilizing year of data collection as the independent variable and both the total professional identity score and the mean scores for each of the four dimensions as dependent variables. **Table 1** presents these results. Even after controlling for sample size, years of experience remained a significant positive predictor of changes in the average total professional identity score (β = 0.61, $P < 0.001$; F = 74.54, $P < 0.001$), and also significantly predicted changes in professional values, role values, professional sense of belonging, and professional behavioral tendencies. The findings suggest a significant upward trend in the overall professional identity of

Chinese basic education teachers between 2013 and 2022.

Table 1. Correlation between the mean values of occupational identity and its four factors among primary and secondary school teachers in China and the years

Factor	The sample size was not controlled		Control the sample size	
	r	r2	β	R2
Total score of professional identity	0.50***	0.25	0.61***	0.37
Professional values	0.43***	0.18	0.39***	0.15
Role values	0.47***	0.22	0.50***	0.25
Professional belonging	0.33***	0.11	0.30**	0.09
Occupational behavior tendency	0.30**	0.10	0.38***	0.14

Note: $+0.05 < P < 0.1$, $*P < 0.05$, $**P < 0.01$, $***P < 0.001$. r is the correlation coefficient controlled for sample size, β is the standardized coefficient controlled for sample size, and R^2 is the coefficient of determination.

4.2. The professional identity of teachers in basic education in our country has shown a high degree of increase with the changes over the years

In summary, the professional identity of Chinese basic education teachers consistently increased from 2013 to 2022. To quantify the magnitude of change in professional identity during this period, an effect size, d, was calculated. The calculation involved performing a weighted sample size regression analysis to derive the regression equation (y = Bx+C), utilizing this equation to calculate M2013 and M2022, and finally, substituting these values into formula 1 to determine the value of d.

$$d = \frac{M_{2013} - M_{2022}}{M_{SD}} \qquad \text{(Formula 1)}$$

Table 2 indicates that the average total professional identity score for Chinese basic education teachers was 4.16 in 2013 and 4.83 in 2022. This represents a 0.67-point increase over the past decade, with an average standard deviation of 0.58 and a standard deviation increase of 1.16 (d = 1.16). The mean professional values score rose by 0.46 points, accompanied by an average standard deviation of 0.63 and a 0.73 increase in standard deviation (d = 0.73). For role values, the mean score grew by 0.58 points, with an average standard deviation of 0.73 and a standard deviation increase of 0.79 (d = 0.79). The mean professional sense of belonging score saw a 0.33-point increase, along with an average standard deviation of 0.72 and a 0.45 increase in its standard deviation (d = 0.45). In addition, the mean professional behavior tendencies score increased by 0.44 points, with an average standard deviation of 0.63 and a 0.70 increase in standard deviation (d = 0.70). Following Cohen's criteria [8], d > 0.8 constitutes a "large effect size," 0.8 > d > 0.5 represents a "medium effect size," and 0.5 > d > 0.2 indicates a "small effect size." In this study, the change in the total professional identity score reflects a large effect size. The changes observed in professional values, role values, and professional behavior tendencies are in the medium effect size range. Professional behavior tendencies were associated with a small effect size. The results demonstrate significant increases over the past ten years in total professional identity scores, professional values scores, role values scores, and professional behavior tendencies scores among Chinese basic education teachers, while the professional sense of belonging demonstrates a relatively smaller increase. In general, these findings suggest a positive trend in the level of professional identity for Chinese basic education teachers.

Table 2. The change in occupational identity among primary and secondary school teachers in China

Factor	M_{2013}	M_{2022}	M_{CHG}	M_{SD}	d
Total score of professional identity	4.16	4.83	0.67	0.58	1.16
Professional values	4.89	5.35	0.46	0.63	0.73
Role values	3.27	3.85	0.06	0.73	0.79
Professional belonging	3.20	3.53	0.09	0.72	0.45
Occupational behavior tendency	3.27	3.71	0.18	0.63	0.70

The consumption level of residents, educational funds and the level of urbanization can all significantly affect the changing trend of teachers' professional identity. The results presented above indicate that the level of professional identity among Chinese basic education teachers has followed an increasing pattern over the preceding 10 years. Cross-sectional historical research offers a method to clarify the effect of social change on professional identity and its contributing elements; this involves analyzing the correlation between professional identity factors and social indicators, thereby facilitating an exploration of whether this observed pattern connects to social change. As detailed in **Table 3**, after the same size was controlled, Residents' consumption level demonstrated a significant positive predictive relationship with professional identity ($P < 0.001$); Educational funding likewise demonstrated a capacity to significantly and positively predict professional identity ($P < 0.001$); besides, the level of urbanization was identified as a significant positive predictor for professional identity ($P > 0.05$). In overview, residents' consumption level, education funding and the level of urbanization all exhibit a connection with teachers' professional identity.

Table 3. The predictive role of social indicators in the current year, 1 year ago, 3 years ago, and 5 years ago on the changes in occupational identity

Social indicators	Back then		One year ago		Three years ago		Five years ago	
	Professional identity		Professional identity		Professional identity		Professional identity	
	β	R2	β	R2	β	R2	β	R2
Residents' consumption level	0.64***	0.41	0.58***	0.34	0.60***	0.36	0.61***	0.37
Educational funds	0.62***	0.38	0.602***	0.362	0.61***	0.37	0.59***	0.35
Urbanization level	0.62***	0.38	0.62***	0.38	0.62***	0.38	0.61***	0.37

Note: $+0.05 < P < 0.1$, $*P < 0.05$, $**P < 0.01$, $***P < 0.001$. r is the correlation coefficient controlled for sample size, β is the standardized coefficient controlled for sample size, and R² is the coefficient of determination.

Prior research suggests that lagged correlation analysis can explain the effect of societal factors on the professional identity of teachers in Chinese basic education. This analysis involves correlating five social indicators from one, three, and five years prior with current measures of teacher professional identity and its constituent elements. Results indicate that residents' consumption level, education expenditure, and urbanization level from one year prior significantly and positively predict teachers' professional identity. Similarly, residents' consumption level, education funding investment, and urbanization level from three years prior significantly and positively predict teachers' professional identity. In addition, residents' consumption level, education funding investment, and urbanization level from five years prior also significantly and positively predict teachers'

professional identity. In summary, residents' consumption level, education funding investment, and urbanization level are key predictors of professional identity among Chinese basic education teachers.

The changes in the professional identity level of teachers at different educational stages over the years and the differences in scores. In addition to social indicators, the educational level also affects teachers' professional identity. This study analyzed the relationship between years of experience and professional identity among teachers at different educational levels, considering four contributing factors. First, we analyzed the effect size of changes in professional identity and these four factors among kindergarten teachers over time. As presented in **Table 4**, the mean composite score for professional identity among kindergarten teachers was 4.00 in 2015 and 4.48 in 2022. Over the past decade, this score increased by 0.48 points, with an average standard deviation of 0.54, representing a 0.89 standard deviation increase (d = 0.89). The mean value for professional values rose by 0.52 points (average standard deviation: 0.59; increase of 0.88 standard deviations) (d = 0.88). For role values, the mean increased by 0.55 points (average standard deviation: 0.68; increase of 0.81 standard deviations) (d = 0.81). The mean for professional sense of belonging rose by 0.54 points (average standard deviation: 0.68; increase of 0.79 standard deviations) (d = 0.79). Finally, the mean value for professional behavior tendencies saw a 0.54 point increase (average standard deviation: 0.59; increase of 0.91 standard deviations) (d = 0.91). In this study, the observed changes in the composite score for professional identity, as well as in the factors of professional values, role values, and professional behavior tendencies among Chinese kindergarten teachers, constitute a large effect size; whereas, the changes in the professional sense of belonging factor represent a medium effect size. It suggests that, over the past ten years, the composite professional identity score, along with professional values, role values, and professional behavior tendencies, increased significantly among Chinese kindergarten teachers, while the professional sense of belonging experienced a more modest increase. In conclusion, the level of professional identity among Chinese kindergarten teachers demonstrated an upward trend.

Meanwhile, this study also analyzed the effect sizes of professional identity of primary and secondary school teachers and its four factors over the years. As presented in **Table 5**, the mean composite score for professional identity among primary and secondary school teachers was 4.63 in 2013 and 5.35 in 2022. Over the past decade, this score increased by 0.72 points, with an average standard deviation of 0.57, representing a 1.25 standard deviation increase (d = 1.25). The mean value for professional values rose by 0.40 points (average standard deviation: 0.64; increase of 0.63 standard deviations) (d = 0.63). For role values, the mean increased by 0.50 points (average standard deviation: 0.74; increase of 0.68 standard deviations) (d = 0.68). The mean for professional sense of belonging rose by 0.22 points (average standard deviation: 0.73; increase of 0.30 standard deviations) (d = 0.30). Finally, the mean value for professional behavior tendencies saw a 0.42 point increase (average standard deviation: 0.65; increase of 0.65 standard deviations) (d = 0.65). In this study, the change in the total score of professional identity belongs to the large effect size, the changes in professional values, role values, and professional behavioral tendency factors all belong to the medium effect size, and the change in the professional belonging factor belongs to the small effect size. It suggests that, over the past ten years, the total score of professional identity of primary and secondary school teachers in China has increased significantly, the factors of professional values, role values and professional behavioral tendencies have increased moderately, and the factor of professional belonging has increased slightly. In conclusion, the level of professional identity among primary and secondary school teachers demonstrated an upward trend.

Table 4. The professional identity of kindergarten teachers in China and the changes of various factors over the years

Factor	M_{2015}	M_{2022}	M_{CHG}	M_{SD}	d
Total score of professional identity	4.00	4.48	0.48	0.54	0.89
Professional values	3.24	3.76	0.52	0.59	0.88
Role values	4.46	5.02	0.55	0.68	0.81
Professional belonging	4.17	4.71	0.54	0.68	0.79
Occupational behavior tendency	3.97	4.51	0.54	0.59	0.91

Table 5. The changes in occupational identity and its factors among primary and secondary school teachers in China over different years

Factor	M_{2013}	M_{2022}	M_{CHG}	M_{SD}	d
Total score of professional identity	4.63	5.35	0.72	0.57	1.25
Professional values	3.99	4.39	0.40	0.64	0.63
Role values	4.66	5.16	0.50	0.74	0.68
Professional belonging	4.79	5.01	0.22	0.73	0.30
Occupational behavior tendency	4.67	5.09	0.42	0.65	0.65

5. Discussion

This analysis utilized data collected from 74,027 basic education teachers over the last decade; this information was compiled to appraise the developmental course of professional identity among Chinese basic education teachers over this period and to identify the factors influencing changes in their professional identity. An analysis of the resultant findings was then performed.

5.1. With the continuous implementation of policy reforms, the professional identity of basic education teachers in China is on the rise

Findings derived from a cross-sectional historical meta-analysis indicated a significant positive correlation between the average professional identity of Chinese basic education teachers, including its four constituent factors, and the progression of years; this suggests a gradual strengthening in the professional identity of these educators. Concurrent with the ongoing advancement in developing the national teaching force, there has been a steady confirmation of teachers' identity and status, alongside an increase in the profession's appeal. It appears, to a certain degree, that the strengthening of teachers' professional identity represents an unavoidable development. First, concerning theory, perspectives advanced by Lent & Brown, noted proponents of social cognitive career theory who built upon social cognitive theory, maintain that when individuals encounter greater environmental support and fewer impediments, their likelihood increases for setting goals appropriate to their career paths and for performing actions consistent with reaching those goals [9]. In teachers' professional growth, constructive connections between educators and their social surroundings imply that teacher professional identity experiences continuous formation in the social environment. Second, on a practical plane, following the 18th National Congress of the Communist Party of China, the Party Central Committee together with the

State Council, introduced a sequence of policy actions; these actions have bettered the political standing of teachers, advanced their collective quality, and produced historically significant accomplishments in building the teacher group [10]. Throughout this undertaking, the sustained optimization and successful application of policies contribute significantly and positively toward strengthening teachers' professional identity. Therefore, adherence to policy direction concerning the development of the teacher group is recommended, as this offers the foundation for cultivating a high-quality teaching force. Looking through a policy lens, a requirement exists to appraise China's direction and stipulations for building the teacher group; collaborative efforts are also needed to construct an inventive framework for high-quality teacher group development, one thoroughly supported by policies and systems appropriate for the new era, thereby cultivating the long-term advancement of teacher professional identity [11].

5.2. Taking social indicators as the starting point, efforts should be accelerated to enhance the professional identity of teachers in basic education in our country

The findings in this study exhibit that socio-economic indicators from the current year, as well as one, three, and five years prior, significantly predict these shifts, suggesting that alleviating teachers' economic pressures positively affects their professional identity. Regarding the effect on teachers' personal quality of life, shifts in socio-economic conditions may influence professional identity through potential mediating factors. The first involves achieving a psychological equilibrium where economic benefits align with work effort; teachers expect economic returns commensurate with their labor to attain this balance and improve career satisfaction. Therefore, considering the complexity of socio-economic factors and the income status of the teacher group, the government should address the psychological imbalance related to incomes and contributions. Actions should include further improving the funding guarantee mechanism compatible with teacher salary policy, researching and formulating methods for determining total performance-based salary amounts and internal distribution plans, and optimizing income distribution incentive mechanisms. Such optimization should ensure that teachers exhibiting greater effort and superior teaching quality receive higher incomes, thereby strengthening their professional identity. The second potential factor relates to an increase in teachers' actual disposable income, or alternatively, a comparatively low level of consumption expenditure. Teachers' disposable income rises, allowing for improved living standards through mindful spending and reduced cost of living. Besides salary and benefit increases, local governments should offer housing and transportation subsidies. Schools, too, should augment teacher welfare income through appropriate channels, thereby raising their actual standard of living. In addition, data indicates that total investment in education in China reached 61,329.14 billion yuan in 2022, a 5.97% year-over-year increase [12]. This rise in educational funding has the potential to elevate teachers' working conditions, enhance school management quality, optimize the systems for recognizing and honoring teachers, and cultivate a societal climate of respect for teachers and the value of education.

This research indicated a significant positive relationship between social connection, including urbanization levels, and shifts in teachers' professional identity. More accurately, one-year prior indicatorsdegree of urbanization significantly predicted changes in teachers' professional identity. Similarly, urbanization levels from the preceding year significantly predicted these shifts. In addition, urbanization levels from three and five years prior also significantly predicted changes in teachers' professional identity. The findings suggest that optimizing social connection indicators can, in certain measure, facilitate the growth of teachers' professional identity. Social support theory hypothesizes that social support offers both a buffering and preventative effect

on individual stress, lessening tension and anxiety in stressful situations and assisting individuals in more effectively managing and adjusting to such circumstances, thereby restoring and preserving mental well-being [13]. Opportunities for improved teacher salaries and working conditions, along with expanded access to professional development and training. Through participation in professional development programs and continuing education, teachers can further develop their skills and educational expertise, thereby solidifying their professional identity. In conclusion, government agencies and schools should proactively support teachers in building strong family relationships and accessing emotional support, cultivating positive collegial relationships for professional support, and cultivating broad social networks for societal support, finally promoting teacher well-being and strengthening professional identity [14].

5.3. Pay attention to the integrity of the education system and comprehensively enhance the professional identity level of teachers at different educational stages

This study indicates a significant positive correlation between years of experience and the professional identity of kindergarten teachers. It suggests a continued strengthening of professional identity among kindergarten teachers, reflecting the national and societal advancements in China. Recent years have witnessed consistent growth in salary and welfare expenditures for kindergarten teachers. The improvements in occupational security and career development opportunities contribute to a more stable teaching force and a higher level of professional identity. It implies that interventions designed to cultivate professional identity development should prioritize a renewed focus on preschool teachers' sense of professional belonging. Specifically, developing targeted support strategies for the unique characteristics of the profession may prove particularly effective in strengthening professional identity. Years of experience demonstrate a significant, positive predictive relationship with professional identity and its four constituent factors in primary and secondary school teachers, suggesting a progressive strengthening of professional identity over time. Systematic research and training programs offered by education departments and schools, along with well-defined institutional policies, scientifically grounded evaluation systems, and comprehensive recognition and reward structures, significantly increase teacher job satisfaction. They also appear to deepen teachers' understanding of the sense of accomplishment and value derived from the teaching profession, thereby positively influencing the development of their professional identity.

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Disclosure statement

The authors declare no conflict of interest.

References

[1] Wei S, Song G, Zhang D, 2013, The Structure and Scale of Professional Identity of Chinese Primary and

Secondary School Teachers. Teacher Education Research, (1): 55–60 + 75.

[2] Dworet D, 1996, Teachers' Identities: Overview. Changing Research and Practice: Teachers' Professionalism, Identities and Knowledge, 1996: 67–77.

[3] The State Council of the People's Republic of China, 2024, Government Work Report—Presented at the Second Session of the 14th National People's Congress on March 5, 2024. Government Work Report, 2024.

[4] Department of Teacher Work of the Ministry of Education, 2024, Building "Great Country Good Teachers" Satisfying the Party and the People—Achievements in Teacher Team Building and Reform and Development Since the 18th National Congress of the Communist Party of China. Ministry of Education Reports, 2024.

[5] Ministry of Education, 2022, The Ministry of Education, in Conjunction with Relevant Departments, Guides Localities in Fully Ensuring the 2022 National College Entrance Examination (Gaokao). Ministry of Education Website, 2022.

[6] National Bureau of Statistics, 2020, China Statistical Yearbook. China Statistics Press, 2020.

[7] Xu Y T, 2016, The Dilemma and Solutions of the Mechanism for Principal and Teacher Exchange and Rotation. Theory and Practice of Education, 36(4): 21–25.

[8] Cohen J, 1977, Statistical Power Analysis for the Behavioral Sciences. Academic Press, New York.

[9] Lent R, Brown S, 2013, Social Cognitive Model of Career Self Management: Toward a Unifying View of Adaptive Career Behavior Across the Life Span. Journal of Counseling Psychology, (4): 557–568.

[10] Pang L, 2024, Actively Responding to Population Challenges, Seizing Development Opportunities, and Building a High-Quality Teacher Workforce. Educational Research, (3): 7–11.

[11] Yan J, Shang W, 2024, Research on the Content and Path Optimization of High-Quality Teacher Team Building in China—A Qualitative Analysis Based on Policy Texts Using NVivo. Monthly Journal of Educational Studies, (8): 86–94.

[12] Ministry of Education, National Bureau of Statistics, Ministry of Finance, 2023, Announcement on the Implementation of National Education Funding in 2022. Ministry of Education Announcements, 2023.

[13] Malecki C, Demaray M, 2002, Measuring Perceived Social Support: Development of the Child and Adolescent Social Support Scale (CASSS). Psychology in the Schools, (1): 1–18.

[14] Liu X, 2024, Opportunities, Challenges, and Breakthroughs: Teacher Team Building Facing 2035. Teacher Education Research, (4): 34–39.