

Teaching competence, quality, and professional growth of professors in Chinese universities

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Abstract

This paper examined the mechanisms of teaching competence, quality, and professional growth of professors in Chinese universities. The research adopted a descriptive correlational research design, and data was collected from 425 teachers at Chinese universities through an effective questionnaire survey. The research sought to determine the profile of the respondents in terms of age, sex, years of service, highest educational attainment. It also identified the teaching competence in terms of teaching skills, cognitive ability and communication skills; described the teaching quality in terms of knowledge depth and breadth, leadership and management and operational administration capacity; assessed the professional growth in terms of professional knowledge, ability and capacity expansion. It tested the significant difference among teaching competence, teaching quality and professional growth when grouped according to demographic profile and tested the significant relationship among the key variables. The research results showed that there was a positive and significant relationship among teaching competence, quality and professional growth. Chinese universities may prioritize school culture development through various activities, strengthen teacher training, and promote various teaching methods. Also, teachers may strengthen subject mastery by organizing professional development focusing on cognitive ability, communication skills and leadership. Lastly, universities may integrate digital tools and platforms that may enhance the continuous learning resources for training and development. These efforts will promote educational innovation, promote professional collaboration, and promote sustainable progress in Chinese universities education sector.

Keywords: professional growth, teaching competence, teaching quality

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1. Introduction

In the contemporary educational environment, the effectiveness of university professors is increasingly recognized as a pivotal factor in determining institutional success and student outcomes. This is particularly pertinent in China, where rapid economic growth and an increasing emphasis on global academic standards have reshaped the higher education landscape. Despite expanded institutional efforts to improve performance indicators, persistent gaps remain in the evaluation, development, and integration of key faculty competencies—particularly in the domains of teaching competence, teaching quality, and professional growth. Teaching competence, while acknowledged as critical to achieving educational excellence, is often unevenly defined and assessed across institutions. The absence of standardized criteria for evaluating pedagogical effectiveness, student engagement, and adaptive strategies contributes to inconsistencies in teaching outcomes and instructional quality (Huang, 2021; Khan et al., 2019). Moreover, faculty members are frequently left to navigate evolving educational demands without sufficient institutional guidance or professional development resources tailored to diverse learning contexts (Chen, 2020).

Teaching competence has emerged as a central focus in the discourse on educational effectiveness, particularly within the context of higher education. Defined broadly, teaching competence encompasses the ability of educators to effectively convey subject matter, engage students, and utilize pedagogical strategies that foster meaningful learning experiences (Khan et al., 2019). This multidimensional concept not only includes the mastery of content and instructional techniques but also the capacity to adapt to diverse student needs and evolving educational contexts (Chen, 2020). Simultaneously, the concept of teaching quality—though central to institutional rankings and student success—is complicated by fragmented assessment practices and a lack of shared frameworks for stakeholder involvement. As universities aim to align with global standards, challenges persist in systematically integrating instructional clarity, inclusive pedagogy, and formative assessment across disciplines (Li et al., 2022; Smith et al., 2021). These gaps hinder efforts to measure impact consistently and reinforce a reactive rather than proactive approach to quality assurance. Additionally, the personal growth of professors, encompassing professional development, career progression, and well-being, plays a fundamental role in sustaining a productive and supportive academic environment (Zhang, 2023).

Teaching quality is a critical component of educational effectiveness, significantly impacting student learning and institutional success. Defined as the extent to which teaching practices foster student understanding, engagement, and academic achievement, teaching quality encompasses various dimensions including instructional clarity, pedagogical strategies, and the ability to create a supportive learning environment (Brown et al., 2019). It is not only concerned with the delivery of content but also with the interactions between educators and students, and the use of assessment to enhance learning outcomes (Smith et al., 2021). By examining recent trends, challenges, and opportunities within this context, the research seeks to offer recommendations for enhancing the academic environment and supporting faculty development. Zhang (2021) highlighted that effective teaching practices are closely linked to enhanced student engagement and academic performance, thereby contributing to the overall quality of education. Furthermore, the role of teaching competence extends beyond the classroom, impacting institutional reputation and the broader educational landscape (Li et al., 2022).

Recent research has emphasized that high teaching quality is integral to achieving educational goals and improving student performance. For example, studies by Johnson et al., (2020) demonstrate that well-structured and interactive teaching methods are linked to higher student satisfaction and better academic results. Moreover, the assessment of teaching quality often involves multiple stakeholders, including students, peers, and institutional leaders, highlighting its multifaceted nature (Martin et al., 2022). In parallel, the professional growth

of professors—defined as professional development, career progression, and well-being—remains an under-supported area despite its direct influence on teaching effectiveness, research productivity, and retention (Wang et al., 2019). Institutional initiatives often fall short in addressing the holistic needs of faculty, particularly in terms of work-life balance, access to mentoring, and structured advancement pathways (Zhao et al., 2023). As a result, faculty experiences and contributions are variably nurtured, limiting opportunities to sustain a motivated and resilient academic workforce.

Professional growth of professors in Chinese universities is an increasingly vital area of focus in the evolving landscape of higher education. Personal growth refers to the professional development, career advancement, and well-being of faculty members, which significantly impacts their teaching effectiveness, research productivity, and overall job satisfaction (Wang et al., 2019). This concept encompasses various dimensions, including continuous learning, skill enhancement, and the attainment of personal and professional goals (Chen, 2020). Professional growth is crucial for fostering a positive academic environment and achieving institutional excellence. Liu et. al.,(2021) emphasized that opportunities for professional development and career progression not only enhance faculty members' competencies but also contribute to their motivation and job satisfaction. Additionally, research by Zhao et. al.,(2023) suggests that a supportive work environment and work-life balance are integral to personal growth and, consequently, to the overall effectiveness of professors. As universities continue to strive for excellence and adapt to global educational demands, understanding and enhancing teaching competence has become increasingly crucial. This introduction explores the evolving definitions and dimensions of teaching competence, emphasizing its importance in shaping effective educational environments.

As educational institutions face increasing pressure to meet global standards and improve student outcomes, understanding and enhancing teaching quality has become paramount. This introduction explores contemporary definitions and dimensions of teaching quality, underscoring its importance in fostering effective learning environments and advancing educational excellence. As Chinese universities continue to advance in a competitive global academic arena, understanding and promoting the personal growth of professors has become essential. This introduction explores the definitions and dimensions of personal growth for university faculty, highlighting its significance in enhancing academic performance and institutional success. Investigating teaching competence, quality, and personal growth provides a comprehensive understanding of how these factors interrelate and affect educational outcomes in Chinese universities. By analyzing these dimensions, institutions can develop targeted strategies to enhance teaching practices, improve academic quality, and support faculty members' personal and professional development. This approach aligns with broader goals of enhancing educational standards and institutional reputation in a rapidly evolving global academic landscape.

As Chinese universities advance in the global academic arena, it becomes increasingly imperative to understand the intersection of teaching competence, teaching quality, and professional growth. The interplay of these factors determines the overall vitality of academic environments and influences the ability of institutions to cultivate excellence, equity, and innovation. By critically analyzing existing frameworks, identifying areas for structural improvement, and foregrounding faculty needs, this study aims to offer strategic recommendations for enhancing educational outcomes and promoting sustainable institutional success. It contributes to broader efforts to elevate the standards of teaching and learning within China's dynamic higher education landscape.

Objectives of the Study - This study aimed to determine the teaching competence, quality, and professional growth among university professors in China. The study comprehensively evaluated various aspects related to teaching and professional growth. Specifically, the research assessed teaching competence by examining teaching skills, cognitive ability, and communication skills. Additionally, the study identified the quality of teaching with respect to knowledge depth and breadth, leadership, and management and operational administration capacity. Professional growth was assessed by evaluating professional knowledge, ability, and capacity expansion. Finally, based on the findings, the study proposed a training program designed to enhance school improvement efforts and deepen the understanding of factors that contribute to effective teaching and

student success.

2. Methods

Research Design - The research investigated the association between teaching competence, teaching quality, and personal growth among selected University teachers in China in Sichuan Province, using a descriptive research approach. University teachers completed a verified questionnaire survey that collected quantitative data. Quantitative data refers to information that is quantifiable and expressed in numerical terms, which enables statistical analysis and precise measurement of variables (Creswell, 2014). It is collected through structured instruments such as surveys, experiments, and standardized tests, and is instrumental in testing hypotheses, measuring variables, and making predictions (Field, 2013). The importance of quantitative data lies in its ability to provide objective, consistent, and generalizable findings. By allowing researchers to analyze patterns, relationships, and statistical significance, quantitative data facilitates the identification of trends and the evaluation of interventions across larger populations (Babbie, 2020). This approach supports empirical research by providing a rigorous framework for validating theories and making data-driven decisions (Denscombe, 2017). Overall, quantitative data plays a crucial role in advancing scientific knowledge, ensuring accuracy in research, and informing policy and practice with measurable evidence.

Participants of the Study - The participants in this study were university professors from three universities located in Sichuan, China. The respondents were aged between 20 and 60 years, with varying lengths of service ranging from one month to 25 years. To be included in the study, participants must be current university faculty members, regardless of gender. Exclusion was done among any individuals who are not employed as university teachers or those whose age or length of service falls outside the specified range. This selection ensured a diverse and representative sample of the teaching population across different stages of their academic careers. The respondents for this study were selected from the largest universities in Sichuan, China, with a focus on a total population of 425 individuals drawn from an overall pool of 3,000 teachers. This selection process ensured a representative sample of university faculty members from these major institutions, reflecting a broad range of teaching experiences and perspectives within the largest academic environments in the region.

Data Gathering Instrument - The research instruments consist of three questionnaires, each designed to collect specific data related to the research objectives. Relevant background information of the participants, including sex, age, years of service, highest educational attainment will be collected before the questionnaires. The Questionnaire on teaching Competence was adapted from the study of Xue (2017), relating to the improvement of young University teachers and has been used many times in the literature of core journals. A total of 30 entries are scored on a 4-point scale, and the higher the score, the higher the teaching competence. The questionnaire was divided into three dimensions: Teaching Skills (11 questions), teaching cognitive ability (9 questions) and teaching communication skills (10 questions).

The Teaching Quality Questionnaire was modified from Liu (2001), *On the quality of College Teachers*, which consisted of a total of 21 questions including two dimensions. There were (7 questions) was about the depth and breadth of knowledge, (16 questions) for, and the scale was scored on a 4-point scale, with higher scores indicating the better the teaching quality. While, the Personal Growth Questionnaire was adapted from Peng (2021), *Research on Professional Growth Path of College Teachers in the Era of Intelligent Education*. All items were rated on a four-point Likert scale, ranging from 1 (strongly disagree) to 4 (strongly agree). The questionnaire consists of 26 items, which are classified into three dimensions, professional knowledge, professional ability and expanding capacity with higher scores indicating the more profound the personal growth.

To ensure the reliability of the questionnaire, a pilot study was conducted among 30 teachers from Selected University teachers from the schools chosen. Data from these participants will be collected via “Questionnaire Star” (www.wjx.cn), and then were coded and entered into SPSS 27.0 for analysis. The Cronbach Alpha coefficients of the subscales as well as that of the whole questionnaire were calculated. Reliability results for

three variables under investigation, which illustrated that the Cronbach Alpha coefficients of all the subscales ranged from 0.915 to 0.936. Also, the Cronbach Alpha of the whole questionnaire reached 0.936.

Table 1

Reliability Test Summary

Indicators	Cronbach Alpha	Remarks
Teaching Skills	0.947	Excellent
Teaching cognitive ability	0.950	Excellent
Teaching communication skills	0.944	Excellent
The depth and breadth of knowledge	0.909	Excellent
Leadership	0.942	Excellent
Professional Knowledge	0.939	Excellent
Professional Ability	0.929	Excellent
Expanding Capacity	0.927	Excellent

George and Mallery (2003) provide the following rules of thumb: “_ > .9 – Excellent, _ > .8 – Good, _ > .7 – Acceptable, _ > .6 – Questionable, _ > .5 – Poor, and _ < .5 – Unacceptable”

The table presents the Cronbach Alpha values for various indicators used to measure different aspects of teaching and professional abilities. The values for each indicator—Teaching Skills, Teaching Cognitive Ability, Teaching Communication Skills, Depth and Breadth of Knowledge, Leadership, Professional Knowledge, Professional Ability, and Expanding Capacity—are all above 0.9, which is categorized as “Excellent”. This indicates a very high level of internal consistency and reliability for these indicators, suggesting that they provide highly reliable measurements of the respective areas they are assessing. In essence, the data reflects that all the measured aspects of teaching and professional ability are highly dependable and consistent.

Data Gathering Procedure - As for the data gathering, questionnaires were distributed through an online survey -- “Questionnaire Star” (www.wjx.cn) to participants of teachers from, Chongqing University, Chongqing University of Education and Sichuan Fine Arts Institute, which represents the largest population in the area. The questionnaires were sent to them in the form of a QR code, and they were explained in detail about the specific purpose of the questionnaire. Therefore, it was assumed that the teachers who can answer the questions could cooperate with the investigation in a serious manner. Once teachers received the QR code, those who were interested and willing to participate in the survey could scan the code directly in WeChat to get the link and answer the questions on their cell phones. After the questionnaire was submitted, data were collected and finally treated statistically with the use of frequency count, percentage, ranking and weighted mean in interpreting, analyzing, and comparing the responses of the participants by using SPSS 27.0.

Data Analysis - Weighted average and ranking calculations were then used to determine the data’s average, considering different variables’ weights for more accurate reflection. This method offered a comprehensive and precise data description. The Shapiro-Wilk test was performed to check the normality of the data distribution. With p-values for the main variables under 0.05, the data set was found to be non-normally distributed, necessitating non-parametric statistical methods for further analysis. To evaluate significant relationships among talent introduction, talent support, and talent competency, the Spearman rho correlation coefficient was used. This method effectively assessed correlations between non-normally distributed variables, determining the significance, direction, and strength of their relationships. A Likert scale was employed to capture respondents’ attitudes and opinions in detail, providing richer information for data analysis. Verbal interpretation ranges were: “Strongly Agree” (3.50-4.00), “Agree” (2.50-3.49), “Disagree” (1.50-2.49), and “Strongly Disagree” (1.00-1.49). All analyses were performed using SPSS version twenty-eight software, with an alpha level of 0.05 for interpreting results. This comprehensive approach allowed the researcher to understand the data set’s characteristics and patterns, providing a reliable basis for interpreting and applying the research results.

Data collection focused on assessing the professional identity, perceived teacher support, and academic resilience of English majors, analyzed using the weighted mean to ensure precision. In summary, the combination of weighted averages, normality tests, correlation coefficients, and Likert scale assessments

provided a thorough and detailed analysis framework. These methods collectively enabled the researcher to propose informed recommendations for improving the talent admission system in higher vocational colleges.

Ethical Considerations - This study rigorously adhered to ethical principles to safeguard the rights and privacy of Sichuan Professors who participated. Legitimacy was established by obtaining consent from schools and teachers during data collection. All questionnaires and interviews were conducted anonymously, with personally identifiable information strictly confidential. The researcher provided comprehensive information about the study's purpose and ensured voluntary participation. Potential risks were minimized, and research results were solely used for academic purposes. These ethical considerations ensured both moral compliance and the protection of participating teachers' rights. Regarding confidentiality, respondents' personal information remained undisclosed, except for sex, age, length of employment, and educational background. Throughout, participants were well-informed about instructions, procedures, and survey objectives. The voluntary investigation approach further safeguarded respondents' rights. Confidentiality was paramount during data collection. Ethical approval was obtained from the research center at the University of the Lyceum in the Philippines.

3. Results and discussion

Table 2

Summary Table on Teaching Competence

Indicators	Weighted Mean	Verbal Interpretation	Rank
Teaching Skills	2.66	Often	1
Cognitive Ability	2.52	Often	3
Teaching Communication Skills	2.58	Often	2
Composite Mean	2.59	Often	

Legend: 3.50 – 4.00 = Always; 2.50 – 3.49 = Often; 1.50 – 2.49 = Sometimes; 1.00 – 1.49 = Never

Table 2 presents a comprehensive overview of three key teaching competencies: Teaching Skills, Cognitive Ability, and Teaching Communication Skills, with each category evaluated using a weighted mean. The composite mean of 2.59, which falls within the “Often” range, suggests that teachers display a solid level of competence in these areas, but there is still room for improvement.

Among the three indicators, Teaching Skills ranks the highest with a weighted mean of 2.66, indicating that teachers often demonstrate effective teaching methods and strategies. This suggests that teachers are capable of tailoring their teaching approaches to meet the diverse needs of students, which is crucial for maintaining an engaging and productive learning environment. The high importance of teaching skills has been emphasized in recent studies, with research showing that well-developed teaching skills significantly contribute to student engagement and academic success (Zhou et al., 2021). However, the “Often” verbal interpretation implies that teachers may still have areas for growth, such as refining their techniques or incorporating more diverse teaching methods. This indicates that teachers frequently exhibit effective teaching skills, which are essential for creating a productive and engaging learning environment. The high ranking reflects that teachers generally understand how to apply a variety of teaching methods and strategies to meet the diverse needs of their students, although it suggests that there is still room for refinement and growth in this area.

Teaching skills encompass a range of abilities, including lesson planning, classroom management, and the adaptation of teaching techniques to suit different learning styles. Research consistently highlights that the quality of teaching directly impacts student learning outcomes, and teachers who are equipped with strong teaching skills are better able to foster student engagement and academic achievement (Zhou et al., 2021). Teachers who frequently demonstrate teaching skills ensure that lessons are clear, accessible, and well-paced, which helps students grasp new concepts and actively participate in their learning. The fact that the weighted mean of 2.66 places this indicator in the “Often” category rather than “Always” suggests that while teachers are generally effective in their teaching practices, there is potential for further development. Areas for growth might

include diversifying instructional strategies, utilizing more technology in the classroom, or refining communication techniques to better cater to individual student needs. By continuing to build on their teaching skills, educators can improve student learning experiences and outcomes.

Teaching Skills is the highest-ranked competency, reflecting that teachers are effective in their instructional practices, though there remains an opportunity to enhance and diversify these skills for even better results. The second-highest indicator is Teaching Communication Skills, with a weighted mean of 2.58, which also falls in the “Often” category. This reflects that teachers often utilize effective communication strategies in the classroom, enabling them to explain concepts clearly, engage students, and build rapport. Strong communication is vital for enhancing teacher-student relationships and promoting a positive classroom environment (Zhang et al., 2022). While teachers exhibit a solid communication ability, the ranking indicates that there could be further improvements in communication practices to increase engagement and foster deeper connections with students. The relatively high score indicates that teachers understand the importance of communication in the classroom and actively engage in communication with students, colleagues, and possibly parents, but it also highlights that practices are not always at the level of excellence or frequency that would elevate them to “Always” category.

Effective teaching communication skills are crucial for creating a positive classroom environment, ensuring that students fully understand the material, and fostering meaningful relationships. Communication in teaching involves clear explanations, active listening, providing feedback, and being responsive to students’ needs. Teachers who excel in communication can facilitate student engagement, improve academic performance, and contribute to a supportive learning atmosphere (Zhang et al., 2022). However, the fact that the weighted mean of 2.58 places it in the “Often” category suggests that while teachers generally use communication effectively, there may be areas for further improvement. For instance, teachers might benefit from more regular and personalized interactions with students, especially in larger classrooms where individual attention is limited. Additionally, there could be room for growth in terms of fostering more open lines of communication with parents and the school community, which is essential for creating a collaborative educational environment.

The second highest ranking, Teaching Communication Skills reflects a solid competency in communication among teachers, but it also points to opportunities for further development in this area to ensure that communication is a continuous and dynamic part of the teaching process. Cognitive Ability ranks third, with a weighted mean of 2.52, placing it in the “Often” category as well. This suggests that teachers generally have a solid understanding of the subjects they teach and can apply critical thinking and problem-solving skills in their teaching. Cognitive ability is essential for adapting to students’ academic needs and ensuring that content is presented in a way that fosters higher-order thinking (Wang et al., 2023). However, the relatively lower ranking of this indicator compared to the others highlights the need for potential development in subject mastery and its application in diverse classroom situations. This indicates that teachers frequently demonstrate strong cognitive abilities, including understanding the subjects they teach and applying critical thinking to their teaching methods. The relatively high ranking shows that teachers possess the necessary knowledge and intellectual skills to make informed decisions and adapt their teaching strategies to suit students’ academic needs. However, the “Often” interpretation also suggests there is room for improvement in how teachers consistently apply these cognitive skills in all aspects of their teaching.

Cognitive ability in teaching involves not just subject matter expertise but also the capacity for problem-solving, critical analysis, and the application of various teaching methods to ensure effective learning outcomes. Teachers with strong cognitive abilities are able to navigate complex classroom situations, make adjustments based on students’ performance, and critically evaluate the effectiveness of their teaching approaches. These skills are essential for fostering higher-order thinking among students and encouraging them to engage deeply with the content (Wang et al., 2023). While teachers are demonstrating cognitive abilities “often,” the ranking indicates that there could be areas for further development. Teachers might benefit from additional professional training focused on advanced cognitive strategies for enhancing student learning, such as meta-cognitive techniques, interdisciplinary approaches, or critical thinking exercises. Moreover, teachers could

further enhance their cognitive ability by keeping up with innovative educational practices and research-based methods that challenge both their own thinking and the thinking of their students.

Cognitive Ability suggests that while teachers are generally proficient in understanding their subjects and applying intellectual skills in their teaching, there is room for growth in terms of more consistently and effectively utilizing these abilities in all aspects of the learning process. Overall, the Composite Mean of 2.59 indicates that while teachers perform competently across all areas, there is still room for improvement. This suggests that while teachers consistently demonstrate skills in teaching, communication, and cognitive ability, these areas could benefit from further professional development. Enhancing these competencies could lead to even better classroom environments, higher levels of student engagement, and improved learning outcomes.

Table 3

Summary Table on Teaching Quality

Indicators	Weighted Mean	Verbal Interpretation	Rank
The depth and breadth of the knowledge	2.56	Agree	2
Leadership	2.62	Agree	1
Composite Mean	2.59	Agree	

Legend: 3.50 – 4.00 = Strongly Agree; 2.50 – 3.49 = Agree; 1.50 – 2.49 = Disagree; 1.00 – 1.49 = Strongly Disagree

Table 3 provides a summary of teacher quality based on two key indicators: the depth and breadth of knowledge, and leadership. The composite mean is 2.59, interpreted as “Agree,” indicating that teachers generally perceive themselves as meeting expected standards in both areas. Among these, leadership emerged as the highest-ranked dimension with a weighted mean of 2.62, suggesting that teachers feel more confident in their ability to lead, make decisions, manage classrooms and resources, and collaborate effectively with colleagues and students. This supports the findings of Liu et. al.,(2023) which emphasize that leadership qualities among Chinese educators are increasingly recognized as vital to school success and reform initiatives. This suggests that teachers in the study perceive themselves as generally competent in exercising leadership within the educational context. Leadership in this setting includes the ability to guide students, manage classrooms, collaborate with colleagues, and participate in school decision-making processes. Teachers’ agreement with this indicator reflects a positive self-assessment of their capacity to influence learning environments constructively and promote a culture of collaboration and improvement.

This finding is consistent with current literature emphasizing the increasing importance of teacher leadership in China. According to Liu et. al.,(2023), schools are placing more emphasis on cultivating teachers who can lead not just in administrative roles but also in instructional innovation, peer mentoring, and student engagement. Leadership is also associated with the ability to adapt to educational reforms and implement new pedagogical practices, which are key expectations in China’s evolving education system (Xu, 2024). Therefore, the strong rating in this area may indicate both institutional support for leadership roles and the growing confidence among teachers in fulfilling these expectations effectively. The second-ranked indicator, depth and breadth of knowledge, had a weighted mean of 2.56, still within the “Agree” range. This suggests that teachers believe they have adequate content knowledge and interdisciplinary awareness to deliver their subject matter effectively. However, it also hints at potential gaps, particularly in integrating multicultural perspectives and interdisciplinary approaches—challenges that have been noted in Chinese teacher training programs (Chen, 2022; Huang et al., 2021). These findings underscore the importance of continuous professional development and targeted support in areas where teachers may feel less confident.

This result aligns with recent studies highlighting that Chinese educators generally exhibit strong content knowledge, a core component of professional competence. According to Chen (2022), Chinese teacher education programs place considerable emphasis on deep subject expertise, particularly in core subjects like mathematics, science, and language. However, Huang et. al.,(2021) noted that while teachers demonstrate proficiency in their specific disciplines, challenges remain in integrating multicultural content and interdisciplinary approaches, which could explain why this indicator did not rank first overall. The agreement level suggests that teachers feel

confident in their content delivery, but there is room for improvement in expanding their breadth—particularly in areas like interdisciplinary teaching and cultural responsiveness. These areas are increasingly relevant in a modern Chinese classroom where globalization and diverse learning needs demand broader pedagogical scope.

Table 4

Summary Table on Professional Growth

Indicators	Weighted Mean	Verbal Interpretation	Rank
Professional Knowledge	2.58	Agree	2
Professional Ability	2.69	Agree	1
Expanding Capacity	2.55	Agree	3
Composite Mean	2.61	Agree	

Legend: 3.50 – 4.00 = Strongly Agree; 2.50 – 3.49 = Agree; 1.50 – 2.49 = Disagree; 1.00 – 1.49 = Strongly Disagree

Table 4 presents a summary of the indicators related to professional growth, focusing on three key areas: Professional Knowledge, Professional Ability, and Expanding Capacity. The composite mean is 2.61, which falls under the “Agree” category, suggesting that teachers generally believe they are actively engaged in professional growth across these areas. Professional Ability ranked first with a weighted mean of 2.69, indicating that teachers feel most confident in their professional abilities. This includes their competency in teaching organization, using modern teaching methods, and other core teaching skills. The importance of professional ability is also highlighted by Huang (2023), who emphasizes that effective teaching methods and organizational skills are fundamental to improving classroom learning outcomes. Zhang et. al.,(2024) also noted that developing teachers’ professional ability is critical to improving their capacity to adapt to diverse learning environments and enhance student engagement.

Professional Knowledge ranks second with a weighted mean of 2.58, suggesting that teachers agree they have sufficient theoretical, pedagogical, and vocational knowledge. This aligns with Li et. al.,(2022), who argue that continuous professional knowledge development, especially in pedagogical theories and subject-specific knowledge, is key to fostering student success. Despite this, there appears to be a gap between teachers’ theoretical knowledge and its application in practical settings, a point made by Wang et. al.,(2023), who found that while many teachers possess strong knowledge in theory, they often struggle to integrate it effectively into their daily practices. Expanding Capacity is ranked third with a weighted mean of 2.55, indicating a moderate level of agreement. This area encompasses activities such as attending academic conferences, participating in refresher courses, and engaging in teaching observations. Although teachers recognize the value of expanding their professional capacity, these activities seem to be less frequently pursued compared to improving professional abilities and knowledge. This finding is consistent with the research of Chen et. al.,(2024), who note that while professional development programs are available, teachers may not always prioritize or have access to them due to time constraints or institutional limitations. In summary, while teachers report strong engagement with professional development activities, there are clear areas where further growth and institutional support could enhance their overall professional trajectory.

Table 5

Relationship Between Teaching Competence and Teaching Quality

Teaching Skills	r-value	p-value	Interpretation
The depth and breadth of the knowledge	.140**	0.002	Significant
Leadership	-0.067	0.142	Not Significant
Teaching Cognitive Ability			
The depth and breadth of the knowledge	0.017	0.708	Not Significant
Leadership	-.426**	0.000	Highly Significant
Teaching Communication Skills			
The depth and breadth of the knowledge	-0.022	0.632	Not Significant
Leadership	.272**	0.000	Highly Significant

Legend: Significant at p-value < 0.01

Table 5 illustrates the association between Teaching Competence and Teachers Quality. The computed

r-values indicates a moderate direct correlation but only teaching competence and depth and breadth of the knowledge obtained p-values less than the alpha level. This means that there was significant relationship exists and implies that the better is the teaching competence, the better is the teaching quality as to depth and breadth of the knowledge. The findings indicate that the depth and breadth of knowledge is positively and significantly related to teaching skills, with a correlation coefficient of 0.140 and a p-value of 0.002. This suggests that teachers who perceive themselves as having a broad and deep knowledge base tend to report better teaching skills. However, leadership shows no significant relationship with teaching skills, as evidenced by the negative correlation of -0.067 and a p-value of 0.142.

In terms of teaching cognitive ability, the depth of knowledge has an extremely weak and statistically insignificant correlation, with an r-value of 0.017 and p-value of 0.708. This implies that teachers' cognitive abilities in teaching are not significantly impacted by their perceived knowledge. Conversely, leadership shows a significant negative correlation with teaching cognitive ability (r-value = -0.426, p-value = 0.000), suggesting that teachers with higher leadership skills tend to rate their cognitive abilities in teaching lower. This could reflect the idea that leadership responsibilities, which involve classroom management and decision-making, might limit the mental focus required for cognitive engagement with the subject matter. When considering teaching communication skills, the depth of knowledge again shows a non-significant negative correlation (r-value = -0.022, p-value = 0.632), meaning that knowledge does not significantly influence teachers' communication skills. On the other hand, leadership has a highly significant positive correlation (r-value = 0.272, p-value = 0.000) with communication skills, indicating that teachers with stronger leadership qualities tend to have better communication skills, likely because leadership necessitates effective communication with both students and colleagues. In summary, the table demonstrates that while teaching skills and leadership are positively correlated with knowledge and communication skills, cognitive ability in teaching is more strongly influenced by leadership, though the relationship is negative. The results underscore the critical role of leadership in teaching effectiveness, particularly in communication, but also highlight that knowledge does not significantly enhance cognitive abilities or communication skills in the same way.

Table 6 shows the association between Teaching Competence and professional growth. The computed r-values indicates a moderate direct correlation and the resulted p-values less than the alpha level except on professional knowledge and ability. This means that there was significant relationship exists and implies that the better is the teaching competence, the better is the professional growth. Firstly, teaching skills are positively correlated with all aspects of professional growth. Specifically, there is a highly significant relationship between teaching skills and professional knowledge ($r=0.263$, $p=0.000$), professional ability ($r=0.292$, $p=0.000$), and expanding capacity ($r=0.225$, $p=0.000$). This suggests that teachers who possess higher teaching skills are more likely to demonstrate better professional knowledge, greater professional ability, and a stronger capacity for expanding their expertise. Finding aligns with existing literature, which highlights the role of teaching proficiency in driving professional development (Zhang et al., 2023).

Table 6

Relationship Between Teaching Competence and Professional Growth

Teaching Skills	r-value	p-value	Interpretation
Professional Knowledge	.263**	0.000	Highly Significant
Professional Ability	.292**	0.000	Highly Significant
Expanding Capacity	.225**	0.000	Highly Significant
Teaching Cognitive Ability			
Professional Knowledge	-0.061	0.182	Not Significant
Professional Ability	.357**	0.000	Highly Significant
Expanding Capacity	.265**	0.000	Highly Significant
Teaching Communication Skills			
Professional Knowledge	.104*	0.022	Significant
Professional Ability	0.079	0.081	Not Significant
Expanding Capacity	.172**	0.000	Highly Significant

Legend: Significant at p-value < 0.01

Secondly, teaching cognitive ability shows a significant correlation with professional ability ($r=0.357$, $p=0.000$) and expanding capacity ($r=0.265$, $p=0.000$), but it does not significantly correlate with professional knowledge ($r=-0.061$, $p=0.182$). This indicates that while cognitive ability may not directly influence teachers' perceived professional knowledge, it plays a key role in enhancing their professional ability and their capacity for further growth. This supports the view that cognitive ability can significantly impact a teacher's development, particularly in terms of adapting and expanding professional competencies (Huang, 2024).

Lastly, teaching communication skills show a significant positive correlation with professional knowledge ($r=0.104$, $p=0.022$), but they do not significantly correlate with professional ability ($r=0.079$, $p=0.081$). However, communication skills have a highly significant relationship with expanding capacity ($r=0.172$, $p=0.000$). This suggests that strong communication skills are essential for expanding a teacher's professional capacity, as they facilitate better interaction and collaboration with colleagues, ultimately supporting continued professional growth.

In summary, the table underscores that teaching skills and cognitive abilities are crucial for professional development, influencing both professional knowledge and the capacity to grow. Communication skills, while critical for enhancing professional knowledge and expanding capacity, also play an integral role in fostering collaboration and ongoing learning. These findings highlight the importance of comprehensive teaching competence in supporting teachers' professional growth and their ability to adapt to new educational challenges.

Table 7

Relationship Between Teaching Quality and Professional Growth

The depth and breadth of the knowledge	r-value	p-value	Interpretation
Professional Knowledge	.173**	0.000	Highly Significant
Professional Ability	0.033	0.472	Not Significant
Expanding Capacity	.174**	0.000	Highly Significant
Leadership			
Professional Knowledge	.115*	0.011	Significant
Professional Ability	-.265**	0.000	Highly Significant
Expanding Capacity	.219**	0.000	Highly Significant

Legend: Significant at p-value < 0.01

Table 7 presents the association between teaching quality and professional growth. The computed r-values indicates a moderate direct correlation and the resulted p-values less than the alpha level except on professional ability. This means that there was significant relationship exists and implies that the better is the teaching quality, the better is the professional growth.

For the depth and breadth of knowledge, the table shows a highly significant positive correlation with both professional knowledge ($r = 0.173$, $p = 0.000$) and expanding capacity ($r = 0.174$, $p = 0.000$). This suggests that teachers with a deeper and broader understanding of their subject matter are more likely to have a stronger grasp of professional knowledge and are better equipped for continued professional development. These findings align with research that emphasizes the importance of subject matter expertise in fostering both personal and professional growth (Huang, 2024). However, the depth and breadth of knowledge does not show a significant correlation with professional ability ($r = 0.033$, $p = 0.472$), suggesting that while knowledge is crucial for professional development, it may not directly influence teachers' practical abilities in the classroom. This result supports the notion that other factors, such as teaching experience and professional training, may be more important for developing practical teaching skills (Zhang et al., 2023).

Regarding leadership, the table shows a significant positive correlation with professional knowledge ($r = 0.115$, $p = 0.011$) and highly significant positive correlations with both professional ability ($r = -0.265$, $p = 0.000$) and expanding capacity ($r = 0.219$, $p = 0.000$). These results suggest that leadership skills play a crucial role in fostering teachers' professional growth, particularly in the areas of their professional ability and capacity for

development. Teachers with stronger leadership qualities tend to possess a greater capacity to expand their professional skills and adapt to new teaching challenges, aligning with studies that highlight the importance of leadership in driving educational success (Liu, 2022).

In summary, the table indicates that both the depth and breadth of knowledge and leadership qualities significantly influence teachers' professional growth, although their impact varies across different aspects of growth. Teachers' knowledge contributes strongly to their professional development and expanding capacity, while leadership skills have a broader and more significant impact, particularly on professional ability and expanding capacity. This underscores the importance of nurturing both content expertise and leadership skills for fostering continuous professional growth among educators.

Table 8*Integrated Training Program for Enhancing Teaching Cognitive Ability and Professional Growth Capacity*

Key Result Area (KRA)	Objectives	Activities	Success Indicators (80–95%)	Persons Involved
Teaching Cognitive Ability	To enhance understanding and application of cognitive strategies in teaching	• Workshops on cognitive processes and problem-solving • Training on Bloom's Taxonomy in lesson planning • Peer sessions on integrating higher-order thinking in teaching	• 85% of participants demonstrate improved cognitive strategy use in post-training demos • 80% score improvement in assessments on cognitive pedagogy concepts	Subject Experts, Academic Coordinators, Teachers
Assessment & Evaluation Skills	To improve teacher ability to measure student cognitive growth effectively	• Role-play scenarios on student evaluations • Case studies on assessing higher-order thinking • Feedback and reflection on designed assessments	• 90% of teachers apply cognitive assessment tools effectively • Increased use of open-ended tasks and rubrics in classroom assessments (target: 85%)	Instructional Coaches, Teachers, Trainers
Expanding Capacity	To build sustained professional growth habits and utilization of learning tools	• Time management for professional learning • Orientation on online courses, MOOCs, and webinars • Access to curated online learning platforms	• 90% participation rate in at least one online training program per semester • 85% self-reported confidence in finding and using professional resources online	ICT Coordinator, HR Officer, Teachers
Collaborative Development	To foster academic networking and mentorship among teachers	• Internal mentoring programs • Sponsored attendance to academic seminars/conferences • Inter-school collaborative projects and research	• 80% engagement in peer mentoring or joint projects within 6 months • 85% of staff present in one academic seminar/conference annually	School Leaders, HR, External Trainers, Teachers
Scholarly Engagement	To encourage teachers to contribute to academic publications and discourse	• Academic writing workshops • Peer review and paper critique sessions • Support for submitting papers to journals or educational magazines	• 80% of attendees draft at least one paper • 50% of participants publish or submit work for publication within a year	Research Coordinators, Senior Faculty, Teachers

This table presents a targeted training plan aimed at improving the two lowest-rated areas based on summary evaluations: Teaching Cognitive Ability and Expanding Capacity. The plan outlines key result areas (KRAs), objectives, strategic activities, success indicators (with 80–95% effectiveness targets), and the persons involved in implementation. It is designed to strengthen teachers' instructional thinking, assessment strategies, and professional development engagement through structured, collaborative interventions.

4. Conclusions and recommendation

Teachers often demonstrate teaching competence, with teaching skills being the most evident. However, cognitive ability ranks lowest, indicating a need for targeted support to enhance teachers' analytical and decision-making capacities in the classroom. Teachers generally agree they possess qualities of effective educators, with leadership being their strongest area. However, the slightly lower rating in knowledge depth

suggests a need to strengthen subject mastery to support sustained instructional effectiveness. Teachers generally agree on their professional growth, with professional ability being their strongest area. While there is agreement on their knowledge and capacity for development, expanding capacity shows a slight opportunity for improvement in fostering further professional advancement. Significant relationship exists and implies that the better is the teaching competence, the better is the professional growth. A training program was proposed to address key areas of professional development, specifically targeting communication skills, expanding capacity, and cognitive abilities.

Teachers may actively engage in professional development focusing on cognitive ability, teaching communication skills, and leadership. **Instructional Coaches may** provide personalized coaching on teaching methodologies, especially focusing on enhancing cognitive abilities and communication skills. Academic Coordinators may strengthen subject mastery by organizing regular workshops, deep-dive seminars, and content-specific training to enhance knowledge depth. **ICT Coordinators may** integrate digital tools and platforms that enhance cognitive abilities and communication skills. **School Administrators may** support a culture of continuous learning by allocating resources for targeted training and development. **HR Officers may** design professional development opportunities that cater to the specific needs of the teaching staff, particularly focusing on cognitive ability and expanding capacity for further growth. Future Researchers may study the impact of teaching competence and quality so that they may analyze teacher training effectiveness and evaluate educational innovations for professional growth.

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