Enhancing Professional Competence of Preschool Education Majors in Higher Vocational Colleges: A KSA-Based Approach

Huang Jiadi , Ahmad Nabil Bin Md. Nasir

Faculty of Educational Sciences and Technology, University Technology Malaysia

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ABSTRACT

This study employs the KSA model (Knowledge, Skills, and Abilities) as a theoretical framework to systematically explore the core elements and enhancement strategies of professional competence for preschool education majors in higher vocational colleges. From the three dimensions of knowledge, skills, and abilities, the study analyzes the structural framework of professional competence: the knowledge dimension emphasizes the integration of pedagogy, psychology, and disciplinary knowledge; the skills dimension focuses on practical competencies such as educational activity design, child observation, home–school collaboration, and digital teaching; and the ability dimension highlights educational understanding, innovative thinking, communication, and personal and psychological literacy. Based on this framework, the study proposes strategies including curriculum system optimization, innovative teaching methods, campus–kindergarten–society collaborative education mechanisms, and professional development support for teachers. The findings indicate that the KSA model effectively promotes the coordinated development of knowledge, skills, and abilities, enabling students to transform from "learning to teach" to "teaching professionally." This research provides theoretical and practical insights for constructing a professional competence framework and advancing curriculum reform in higher vocational preschool education.

Keywords: KSA Model; Higher Vocational Education; Preschool Education; Professional Competence; Talent Cultivation

INTRODUCTION

Preschool education represents the starting point of the entire education system and plays a crucial role in promoting the holistic development of young children(Melhuish, 2011; Yotova, 2016). With the promulgation and implementation of the Education Power Construction Plan (2024–2035) and the Preschool Education Law in China, higher requirements have been placed on the cultivation of professional talents in preschool education(Ye, 2025). Within the framework of higher vocational education, the preschool education major shoulders the important mission of training highly skilled teachers for kindergartens and childcare institutions(Ren & Tai, 2023; Y. Wu, n.d.). However, the current talent cultivation system in many higher vocational colleges still faces several prominent challenges: the disconnection between curriculum design and job requirements, the gap between practical teaching and real educational contexts, unclear objectives for competency development, and insufficient emphasis on comprehensive professional literacy(Jin, n.d.). These issues have collectively resulted in a mismatch between graduates' professional competence and the actual demands of preschool education practice(W. Wu et al., 2024).

Against this background, exploring a scientific model for developing professional competence has become a key pathway to improving the quality of talent cultivation in higher vocational preschool education programs(Xun, 2024a). The KSA model (Knowledge, Skills, and Abilities), as a classical framework for competency analysis, provides strong theoretical support for addressing this issue. Through the organic integration of the three dimensions—knowledge, skills, and abilities—the model systematically illustrates the structure of professional competence in preschool education, following the logical sequence of "what to learn, what to master, and what to perform." This framework offers practical guidance for curriculum design, instructional content optimization, and the construction of competence-based evaluation systems(Popovych et al., 2024a).

The development of preschool education in the new era is characterized by increasing diversity, informatization, and integration. Emerging demands such as educational digitalization, game-based teaching, home–school co-education, and individualized child support require teachers to possess stronger abilities in knowledge integration and practical innovation(Cai, 2024a). Applying the KSA model in this context allows for a systematic examination of the mechanisms through which vocational students develop their competencies in both academic learning and practical engagement. It further promotes the coordinated advancement of knowledge, skills, and overall professional abilities, thereby cultivating high-quality preschool education professionals with creativity and practical competence(Cai, 2024b).

The KSA model, comprising the three interrelated dimensions of Knowledge, Skills, and Abilities, serves as a theoretical framework for comprehensively evaluating an individual's overall competence in professional contexts(Al-Khalifa, 2013a; Choong Pin Aun & Ahmad Fuad, 2024). Knowledge provides the cognitive and theoretical foundation for performance; skills represent the application of knowledge to practice and problem-solving; and abilities reflect broader personal attributes—such as innovation, communication, and decision-making—that ensure the effective integration of knowledge and skills(Rundquist, 2012). Together, these components shape an individual's adaptability, creativity, and overall professional performance(Orkibi, 2025). At the institutional level, it serves as a scientific basis for competency assessment, employee training, and talent selection. By aligning job requirements with individual competencies, organizations can design more effective training programs and recruitment processes, ultimately enhancing workforce quality and organizational performance(Wuim-Pam, 2014).

KSA-Based Analysis of Professional Competence in Preschool Education

Knowledge Dimension

Talent cultivation in preschool education programs centers on the holistic development of young children, and the systematic nature of the knowledge structure directly determines students' professional competence(Weng & Cao, 2023). According to the "Knowledge" dimension of the KSA model, students majoring in preschool education at higher vocational institutions should develop a structured knowledge system encompassing educational theory, professional knowledge, and general literacy. This integrated foundation serves as the basis for the formation of professional skills and the enhancement of comprehensive abilities(Xun, 2024b).

Pedagogical and psychological knowledge constitutes the theoretical cornerstone for preschool education students(Мельник & Мойсак, 2020). Pedagogical knowledge includes the principles of early childhood education, educational policies, and curriculum theories, which enable students to understand the goals, values, and fundamental laws of preschool education. Psychological knowledge—particularly developmental and educational psychology—provides critical support for teachers to observe children's behavior and understand individual differences(Huang et al., 2024). Through systematic study, students can grasp children's developmental characteristics across cognitive, emotional, and social dimensions, thereby enabling them to implement individualized and scientifically informed educational practices.The disciplinary and activity-based

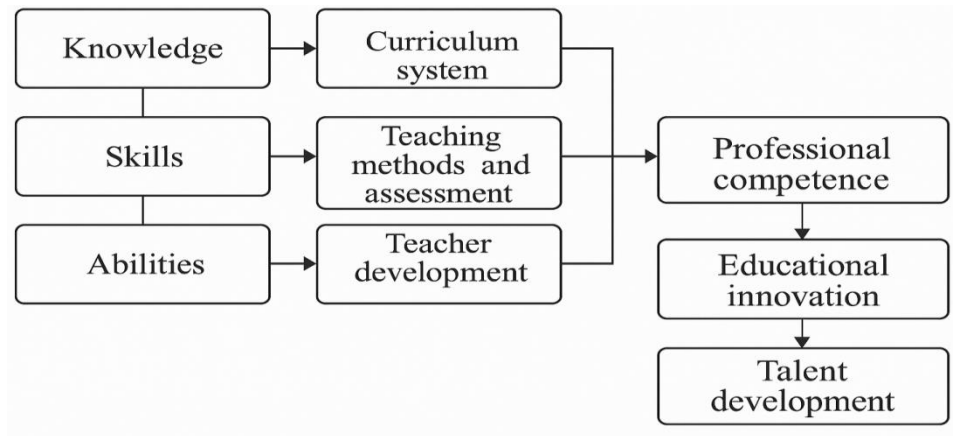
curriculum knowledge constitute the core content of preschool education programs. Students are expected to master the instructional goals and pedagogical approaches across the five key learning domains—language, art, science, society, and health—and to understand the interconnections and integrative pathways among these domains(Barnett & Frede, 2010). For example, in language education, teachers should grasp the principles of early language acquisition and apply methods such as picture book reading and storytelling to stimulate children's interest in expression. In art and science activities, inquiry-based exploration and creative expression should be emphasized to enhance children's perception and cognitive development. The integration of cross-disciplinary knowledge enables students to design comprehensive and life-oriented curricula that align with children's developmental needs(Tian & Zainudin, 2024).

Knowledge of care and health is fundamental to ensuring children's safety and promoting their physical and mental well-being(Robinson et al., 2016). Higher vocational students should be familiar with young children's physiological characteristics, common disease prevention, nutrition, and safety management, as well as master the skills of scientific childcare and emergency response to ensure the effective integration of education and care. In addition, understanding child mental health education and early intervention equips future teachers to provide timely support when identifying emotional or behavioral difficulties in children.

Knowledge of educational informatization and curriculum reform constitutes an essential component of teachers' professional competence in the new era(Peng et al., 2022). Students should be familiar with emerging trends such as educational digitalization, gamification, and curriculum integration, and master the application of information technology in teaching and learning. Moreover, they need to understand key policy documents such as the Guidelines for Learning and Development of Children Aged 3–6 and the Preschool Education Law, ensuring that theoretical knowledge and policy understanding evolve in tandem(Ige et al., 2020).

Knowledge of educational laws, regulations, and professional ethics represents the baseline of preschool teachers' professionalization(Blanuša Trošelj & Ivković, 2016). Students should be well-versed in relevant legal frameworks, including the Teachers' Law and the Law on the Protection of Minors, and develop a strong sense of professional responsibility grounded in legal awareness and respect for children's rights. Learning about educational ethics and teachers' mental health contributes to the cultivation of sound professional character and humanistic care in educational practice(Ke, n.d.). From the perspective of the KSA model, the analysis of the knowledge dimension emphasizes the systematic construction of a professional knowledge framework that integrates theory, educational practice, and professional norms(Chang et al., 2019a). This structured framework not only provides theoretical support for skill development but also establishes a solid foundation for the growth of professional competence.

Figure 1. KSA-Based Professional Competence Framework



Skills Dimension

In the KSA model, "skills" refer to the degree of proficiency with which individuals transform knowledge into practical performance(Al-Khalifa, 2013b). For students majoring in preschool education in higher vocational institutions, the skills dimension reflects both their level of knowledge mastery and their ability to apply it effectively in real educational contexts. It serves as an intermediary link in the formation of professional competence(Машкіна, 2019).

Educational activity design and implementation skills constitute the core competencies of preschool teachers. Students should be able to independently design and organize educational activities in accordance with the Guidelines for Learning and Development of Children Aged 3–6 and the curriculum goals of kindergartens(Milić et al., 2019). They are expected to master key aspects such as goal setting, content integration, contextual creation, and formative evaluation. In practice, students should flexibly apply pedagogical strategies such as play-based, inquiry-based, and project-based learning to stimulate children's curiosity, foster active participation, and promote interactive and generative learning experiences(Li et al., 2024).

Child observation and educational assessment skills represent an essential aspect of teachers' professional judgment(Elden & Aras, 2024). Higher vocational students should be proficient in narrative observation, event sampling, and time sampling techniques, enabling them to record children's learning and developmental behaviors objectively. Based on these observations, they should analyze and reflect on data to adjust teaching strategies accordingly(Zeren & Makosky, 1986). Furthermore, students should be capable of writing observation records and developmental assessment reports to support evidence-based decision-making and individualized education. Childcare and safety management skills are fundamental to preschool education practice. Students need to master competencies related to daily care, hygiene, nutrition, and environmental safety, as well as first aid and risk prevention in emergency situations. Sound childcare skills demonstrate teachers' awareness of and responsibility for children's safety and well-being(Machado & Anderson, 2023).

Communication and home–school collaboration skills are key to building educational partnerships(Rubin, 2009). Teachers must be able to communicate equally with children, understand their emotions and needs, and collaborate effectively with parents through parent meetings, communication notebooks, and online platforms. Students should strengthen their listening, expression, and coordination skills to ensure effective information exchange between educators and families. In addition, educational research and reflective practice skills are vital for teachers' professional growth(Impedovo & Malik, 2016). Students should be familiar with case study and action research methods, develop a problem-oriented mindset, and continuously improve their practice. By writing reflective journals and research reports, they can transform practical experiences into theoretical insights, achieving the transition from experience-based to research-oriented educators.

Digital teaching skills have become a hallmark of innovative competence in the digital era(Garzón Artacho et al., 2020). Higher vocational students should be proficient in using multimedia courseware, educational software, and virtual simulation platforms to enhance the interactivity and informatization of teaching, thereby strengthening their technological literacy for future professional development. In summary, the cultivation of skills in preschool education should emphasize job orientation and practical applicability(Xun, 2024c). Through the integration of coursework, internships, practicum experiences, and reflective inquiry, students can effectively transfer knowledge into professional practice in areas such as educational design, observation and assessment, home–school communication, and technological innovation, thereby laying a solid foundation for the development of professional competence.

Abilities Dimension

In the KSA model, "abilities" refer to the integrated psychological traits and cognitive qualities that individuals demonstrate in the process of applying knowledge and skills(Hyland et al., 2022). They represent the deeper foundation of teachers' professional development. For students majoring in preschool education in higher vocational institutions, the cultivation of abilities signifies the transition from "knowing how to do" to "knowing how to teach," and from "technical practitioners" to "professional educators."

Educational understanding and curriculum integration ability form the core of teachers' professional competence(Zhang et al., 2016). Students should understand educational goals and curriculum content from a holistic perspective of child development and possess the capacity for systematic design and flexible integration. They should be able to design thematic activities based on children's interests and experiences, integrating learning domains such as language, art, and science to achieve holistic and life-oriented education. Educational innovation and problem-solving ability represent a key hallmark of teachers in the new era(Ramírez-Montoya et al., 2021). Faced with diverse educational contexts, teachers must develop innovative thinking and adaptive problem-solving skills. Through project-based learning and case analysis, students can enhance their creativity and resilience in areas such as teaching, classroom management, and home–school collaboration, thereby strengthening their ability to generate new solutions in dynamic educational environments.

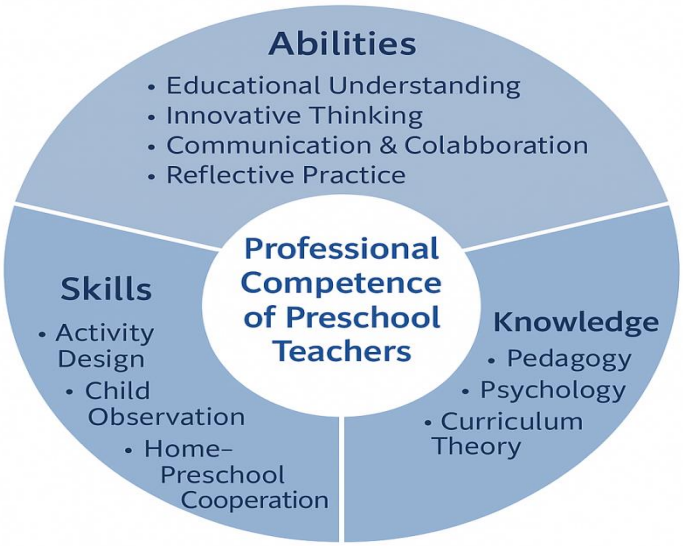
Communication, coordination, and teamwork ability are essential for effective preschool education practice(Demidov et al., 2020). Teachers should be able to establish meaningful communication and collaboration among kindergartens, families, and communities. Through role-playing, simulated teaching, and group-based activities, students can strengthen their listening, expression, and coordination skills, fostering collaborative awareness that promotes home–school partnerships and joint professional development. Reflective and self-development ability serves as the intrinsic driving force for lifelong teacher growth(Іванюк et al., 2020). Students should cultivate the capacity for reflective journaling, case analysis, and action research during coursework and internships. Continuous reflection and improvement allow them to optimize educational practices and progress from imitation-oriented teachers to research-oriented professionals.

Personality traits and psychological literacy constitute the foundation for sustainable professional development(Shahzad et al., 2023). Given the complexity of educational work, teachers must exhibit patience, empathy, emotional regulation, and a strong sense of responsibility. Through mental health education and professional ethics training, students can develop stable emotional resilience and humanistic care in their educational practice.

Information literacy and lifelong learning ability have become indispensable components of the modern professional competence framework. Students should master information retrieval, technological innovation, and educational application skills while maintaining a continuous learning mindset and self-renewal capacity to adapt to educational digitalization and societal transformation.

In summary, the abilities dimension within the KSA model emphasizes a progressive relationship from knowledge understanding to skills application and comprehensive development(Chang et al., 2019b). The integrated enhancement of educational understanding, innovative thinking, communication and collaboration, reflective growth, and psychological literacy collectively forms the core foundation of preschool teachers' professional competence. These abilities are essential for improving the overall quality of talent cultivation in higher vocational preschool education.

Figure 2. KSA-Based Competence Structure in Preschool Education



KSA-Based Strategies for Professional Competence Development

Optimizing the Preschool Education Curriculum System

Optimizing the curriculum system is a crucial step toward enhancing the professional competence of students majoring in preschool education at higher vocational institutions. The current curriculum design is still largely discipline-oriented, with issues such as the disconnection between theory and practice and the repetition of content, which hinder the development of students' comprehensive literacy and job readiness. Based on the KSA model, the curriculum system should be reconstructed from the three dimensions of knowledge, skills, and abilities to achieve competence orientation and the integration of learning and practice.

The curriculum should be reorganized according to professional competence requirements, forming a progressive structure of "fundamental knowledge—professional skills—comprehensive abilities." Foundational courses should strengthen core theoretical knowledge such as pedagogy, psychology, and child development; professional courses should focus on key practical competencies such as activity design, teacher–child interaction, and childcare management; and extension courses should foster innovative thinking, communication, and collaboration. This restructuring enables the systematic integration of knowledge and skills.

Furthermore, interdisciplinary and contextualized curriculum integration should be promoted. Courses such as "Activity Design," "Child Observation," and "Home–School Collaboration" can be combined into project-based learning modules that simulate authentic kindergarten settings. These practice-oriented tasks help students cultivate analytical thinking and decision-making skills while enhancing their ability to apply theory in complex educational contexts. Course content should remain dynamic and practice-driven. In alignment with the Preschool Education Law and the trend of educational digitalization, new elements such as information technology application, STEAM education, and psychological intervention should be incorporated to enhance the relevance and practicality of the curriculum. At the same time, a "curriculum–training–workplace" integrated teaching system should be established to strengthen students' experiential learning and competence transfer across contexts.

A multi-dimensional evaluation mechanism oriented toward professional competence should be implemented. Through learning portfolios, process-based assessments, and performance evaluations, alignment can be achieved between course objectives, teaching processes, and competence development. The optimization of the

curriculum system under the KSA framework thus signifies a shift from a "discipline-centered" to a "competence-centered" model, promoting the coordinated development of knowledge, skills, and abilities, and laying a solid foundation for cultivating high-quality, innovative preschool education professionals.

Innovating Teaching Methods and Evaluation Mechanisms

In the process of enhancing professional competence in higher vocational preschool education based on the KSA model, the innovation of teaching methods and evaluation mechanisms serves as a key driver for the implementation of curriculum reform. Traditional instruction often emphasizes knowledge transmission while neglecting the cultivation of competence, resulting in insufficient adaptability and creativity among students in authentic educational contexts. Therefore, student-centered, diversified, and competency-oriented teaching and assessment systems that align with the characteristics of vocational education should be established.

A shift in teaching philosophy is essential, emphasizing competence-based instructional design. Teachers should adopt project-based, contextualized, and task-driven pedagogies that integrate theoretical learning into real educational scenarios. For example, in the "Kindergarten Activity Design" course, simulated teaching, case analysis, and microteaching can be incorporated to enable students to develop activity organization and teacher–child interaction skills through problem-solving experiences. Learning "by doing" and "through inquiry" facilitates the internalization of knowledge and the generation of competence.

The innovative use of information technology can significantly enhance teaching effectiveness. By leveraging digital resources, virtual simulation platforms, and intelligent learning systems, students can engage in virtual kindergarten observations, online course design, and interactive teaching practices. These digital tools break the constraints of time and space, increasing learner engagement and immersion. The integration of technology not only expands the boundaries of instruction but also cultivates students' information literacy and capacity for educational innovation. In terms of assessment, a multi-dimensional, developmental, and process-oriented evaluation mechanism should be established. The evaluation system should move beyond summative testing toward a combined formative and competence-oriented approach. Methods such as learning portfolios, practicum performance assessments, peer evaluations, and teacher observation records can comprehensively reflect students' progress in knowledge acquisition, skill application, and competence growth.

Two-way feedback between teachers and students should be strengthened to build an integrated "teaching–learning–assessment" model that promotes self-reflection and continuous improvement. Innovating teaching methods and evaluation mechanisms is thus a critical pathway for operationalizing the KSA model in higher vocational preschool education. The integration of project-based learning, digital pedagogy, and multi-dimensional assessment can effectively foster the coordinated development of knowledge, skills, and abilities, thereby laying a solid foundation for cultivating innovative and practice-oriented preschool teachers.

Building a Campus–Kindergarten–Society Collaboration Mechanism

In the process of enhancing professional competence in higher vocational preschool education based on the KSA model, constructing a campus–kindergarten–society collaborative education mechanism serves as a vital guarantee for achieving the deep integration of knowledge, skills, and abilities. Traditional on-campus instruction alone is no longer sufficient to meet the vocational education requirement for authentic learning experiences and job-readiness training. It is therefore essential to establish a multi-party collaboration system that enables resource sharing and complementary advantages, forming an integrated community of practice for talent cultivation.

Improving the internal–external collaborative education system. Higher vocational institutions should establish stable partnerships with kindergartens, communities, and early education organizations to jointly develop talent

training standards and curriculum frameworks. This collaboration ensures the seamless alignment of course content, practical training, and professional competency requirements. For example, colleges and partner kindergartens can co-develop curriculum modules such as Childcare Practice and Child Observation and Assessment, allowing students to undertake authentic learning tasks in real educational environments and enhance their contextual adaptability and professional operational skills.

Strengthening industry–education integration and practice base development. Schools should construct a three-dimensional practical teaching system that integrates on-campus training, kindergarten practice, and community service. Establishing standardized kindergarten simulation laboratories, comprehensive childcare training bases, and early childhood education research studios can provide students with multi-dimensional pathways that bridge classroom learning and workplace practice. Furthermore, implementing a dual-mentor system—involving both front-line teachers and industry experts—can ensure the effective integration of educational theory and professional expertise.

Expanding social participation and building a diversified collaborative education network. Local education authorities, professional associations, and community organizations should be actively involved in the talent cultivation process by providing policy guidance, resources, and evaluation support. For instance, government departments may launch Preschool Education Practice Base initiatives to encourage student participation in community education, family guidance, and public service programs, thereby strengthening their professional responsibility and educational commitment through real-world engagement. Establishing a quality assurance mechanism for collaborative education. Regular evaluation of collaboration outcomes, feedback collection, and continuous improvement of practice standards should be implemented to form a sustainable and efficient cooperative system.

Constructing a campus–kindergarten–society collaborative education mechanism is an essential approach to realizing the integration of knowledge, skills, and action as emphasized in the KSA model. This mechanism not only broadens students' opportunities for professional competence development but also provides a solid foundation for cultivating high-quality, practice-oriented preschool education professionals in higher vocational institutions.

Building a Teacher Professional Development Support System

In the process of enhancing professional competence in higher vocational preschool education based on the KSA model, teachers play a pivotal role as the primary agents of curriculum implementation and competence cultivation. The professional quality of teachers directly determines the depth of students' knowledge acquisition, the breadth of skill development, and the overall quality of ability formation. Therefore, establishing a systematic teacher professional development support system is an essential guarantee for improving the quality of talent cultivation in higher vocational preschool education.

Developing dual-qualified teaching teams to integrate theory and practice. Teachers in preschool education programs at vocational institutions should not only possess solid theoretical foundations in pedagogy and psychology but also have rich practical experience in kindergartens. Institutions can promote the integration of educational theory and professional practice through initiatives such as "teachers undertaking internships in kindergartens" and "industry experts entering classrooms." These approaches enable teaching content to remain aligned with current industry developments. Implementing credit systems for enterprise-based teacher practice and kindergarten co-working arrangements can help educators maintain professional sensitivity and innovative capacity over time.

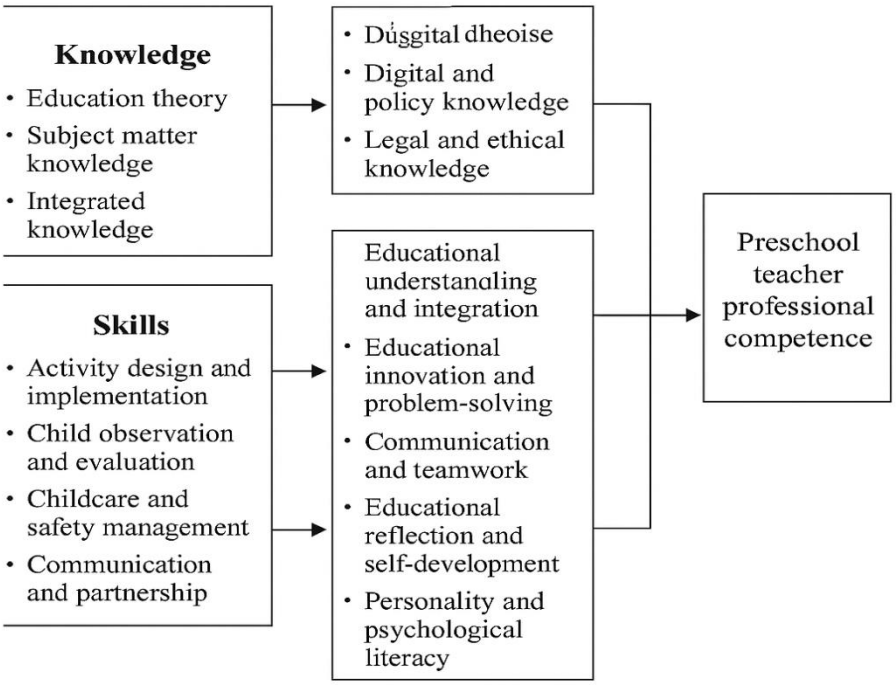
Enhancing teacher training and research mechanisms to support systematic professional growth. Institutions should regularly organize professional development programs focusing on cutting-edge educational trends,

teaching innovation competitions, curriculum ideology integration, and digital pedagogy training. Through a cyclical model of "team-based lesson study—action research—teaching reflection," collaborative professional learning communities can be established to encourage shared growth, experience exchange, and knowledge innovation among faculty members. Strengthening teacher evaluation and incentive systems. A multidimensional evaluation framework should be established that integrates teaching competence, research achievements, community service, and professional ethics into comprehensive assessments. Meanwhile, setting up development funds, teaching innovation awards, and curriculum reform grants can motivate teachers' intrinsic drive for continuous improvement. A growth-oriented incentive mechanism fosters a culture of self-renewal and sustained professional development among educators.

Expanding international perspectives and fostering lifelong learning capacity. Teachers should be encouraged to participate in domestic and international academic exchanges and educational cooperation programs to stay informed about new concepts and global trends in early childhood education. Such engagement broadens their pedagogical perspectives and enhances their research and teaching capabilities.

Building a teacher professional development support system is thus a key component in implementing the KSA model's coordinated cultivation of knowledge, skills, and abilities. Through dual-qualified faculty development, continuous training, and motivational mechanisms, a virtuous cycle can be formed in which teacher growth drives student competence enhancement, providing sustained momentum for the high-quality development of vocational preschool education.

Figure 3. KSA-Based Professional Competence Framework in Preschool Education



DISCUSSION

This study, grounded in the KSA (Knowledge, Skills, and Abilities) model, systematically analyzed the professional competence structure of preschool education students in higher vocational institutions across the three dimensions of knowledge, skills, and abilities, and proposed corresponding enhancement strategies. The findings indicate that the KSA model provides a scientifically grounded and structured framework for cultivating professional competence in higher vocational preschool education, offering valuable insights for optimizing curriculum systems and improving the overall quality of talent development.

The KSA model facilitates the construction of a systematic logic for competence development. Knowledge serves as the cognitive foundation of professional competence, skills represent the practical extension of knowledge, and abilities reflect individuals' integrated performance in complex educational contexts(Neubert & Fischer, 2015). These three dimensions interact dynamically to form an integrated competence structure of "knowing–doing–being." By reconstructing curriculum content and teaching processes around competence-oriented goals, students can achieve knowledge transfer and internalization through authentic educational tasks, thereby transitioning from "learning to know" to "learning to teach."

The KSA framework aligns with international teacher competence models such as TPACK and CAEP, but differs in scope and applicability. TPACK (Mishra & Koehler, 2006) emphasizes the integration of technology, pedagogy, and content knowledge to enhance digital-age instruction. In contrast, the KSA model adopts a broader metacompetence perspective, linking knowledge, skills, and abilities as dynamic elements for comprehensive teacher development, not limited to technology use.

Similarly, the CAEP standards stress accountability and performance-based outcomes in teacher preparation programs. The KSA model, however, focuses on the developmental process of competence formation, emphasizing internal growth over external assessment. From a localized perspective, the KSA framework demonstrates stronger contextual adaptability to China's vocational preschool education system. It integrates cognitive, practical, and affective dimensions of competence, aligning with national goals for cultivating reflective, skilled, and ethically grounded preschool teachers.

The formation of professional competence in preschool education relies heavily on contextualized and practice-based learning environments(Popovych et al., 2024b). Higher vocational institutions should integrate classroom instruction with kindergarten practicum, community service, and other experiential contexts to establish a learning chain characterized by project-based, task-driven, and reflective approaches. This model enables students to develop core competencies in educational design, teacher–child interaction, and home–school collaboration through authentic experience and reflective practice. Such experiential learning strengthens students' professional adaptability and educational creativity.

Teacher development plays a critical role in supporting competence cultivation(Yelfianita et al., 2023). The study found that dual-qualified teachers and sustained professional development mechanisms effectively align instructional content with industry needs, enhancing both the practicality and foresight of education. Teachers' exemplary role and research capacity directly influence the quality of students' competence formation.

Furthermore, the KSA-based competence evaluation system contributes to the reform of educational quality assurance practices(Aburizaizah, 2022). Through diversified evaluation methods such as learning portfolios, process observation, and competence assessments, it is possible to dynamically capture students' progress in knowledge acquisition, skill proficiency, and ability development, thereby fostering a positive interaction among teaching, learning, and assessment.

The application of the KSA model has promoted the systematic and synergistic development of professional competence cultivation in preschool education(Chi et al., 2022). Its implementation not only reinforces the logical connections among knowledge, skills, and abilities but also provides practical guidance for higher vocational institutions in curriculum construction, practice-based teaching, and faculty development. The model thus offers both theoretical and practical value for improving the quality and effectiveness of preschool teacher education.

Limitations and Future Directions

This study is conceptual in nature and primarily builds on theoretical analysis and model construction. Although the KSA framework provides a systematic approach to understanding and cultivating professional competence in higher vocational preschool education, the absence of empirical data limits the validation of its practical effectiveness. The proposed enhancement strategies—curriculum optimization, teaching innovation, school–kindergarten–society collaboration, and teacher professional development—have not yet been empirically examined.

Future research should therefore employ empirical methodologies to test and refine the proposed model. Mixed-methods studies combining surveys, classroom observations, and experimental designs can reveal how the interaction among knowledge, skills, and abilities influences professional competence formation. Comparative and cross-cultural investigations could also assess the model's transferability to different vocational education systems. Furthermore, future iterations of the framework may integrate digital competence, emotional intelligence, and reflective practice to enhance its theoretical depth and practical value in preschool teacher education.

CONCLUSION

This study, grounded in the KSA (Knowledge, Skills, and Abilities) model, constructed a systematic framework for cultivating professional competence among preschool education majors in higher vocational institutions. It analyzed the key elements and proposed targeted strategies across the three dimensions of knowledge, skills, and abilities. The findings indicate that the KSA model effectively guides the cultivation and evaluation of professional competence in higher vocational preschool education, providing a scientific pathway for the competency-based transformation of vocational education.

At the knowledge level, emphasis should be placed on the systematic integration of pedagogy, psychology, and disciplinary knowledge, as well as the enhancement of curriculum relevance and applicability. At the skills level, education should be aligned with occupational requirements, focusing on practical competencies such as activity design, child observation, and home–school collaboration. At the abilities level, attention should be directed toward the comprehensive development of educational understanding, innovative thinking, communication and collaboration, and psychological literacy—facilitating the transformation of students from "learning to know" to "learning to teach."

The study further highlights that the coordinated advancement of curriculum optimization, teaching innovation, campus–kindergarten–society collaboration, and teacher professional development constitutes the key pathway for implementing the KSA model. By constructing a continuous cultivation system that integrates "knowledge, practice, and ability," students' professional competence and educational creativity can be comprehensively enhanced, thus promoting the high-quality development of preschool education talent in higher vocational institutions.

Future research should conduct empirical investigations to examine the mechanisms through which different instructional strategies influence the development of knowledge, skills, and abilities, further refining the localized application of the KSA model in preschool education and providing practical insights for the reform of vocational education talent cultivation models.

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