

Comprehensive Integrated IT Teaching Training Model of Chinese Kindergarten Teachers

*Suyun Lin**

*Sombat Teekasap***

*Nainapas Injoungjirakit****

*Prapai Sridama*****

*Apinya Noomee******

*Yossawat Cheewaworanontree******

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Abstract

This study aims to investigate current problems in kindergarten teaching practice and to design and evaluate the IT-integrated teaching-teacher training (KTT) model for kindergartens in Wenzhou City. The sample comprises 21 early childhood education experts. Structured questionnaires were used for interviews. Statistical data analysis included median and quartile.

Research showed problems in current kindergarten teaching and training, including training needs, content, methods and tools, strategies, organization, and evaluation. KTT model development uses 36 influence factors comprised of training needs, Training content, training strategies, training organizations, resource allocation, training methods, and tools. The proposed KTT model was anonymously accepted as highly practical and feasible by experts. The model was implemented and evaluated through experimental comparison with a control group. Then, the model is recommended for kindergarten teacher training. In using the model, it needs to be continuously iterated and optimized for obtaining effective appropriate conditions.

*_**_***_****_*****_***** Digital Technology Management for Education Program,
Bansomdejchaopraya Rajabhat University, Thailand.

* Corresponding author E-mail address: lin770713192@163.com.

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Introduction

In a contemporary educational environment, the use of information technology for teaching students of all education levels is a trend. Through the efficient use of modern information technology, informatization training aims to greatly improve the efficiency and effectiveness of training, thus rapidly promoting the development of teachers' professional skills and educational concepts. Compared with traditional training modes, information-based training has a significant breaking through, in teachers' individual needs, and updating and disseminating educational innovations. Through online courses and virtual digital teaching resources simulation, teachers can acquire innovative knowledge, promoting communication and collaboration among teachers, and forming professional learning communities.

Current kindergarten teacher training is deficient in integrating information technology, training content mostly favors theories but neglects the practical specific teaching theory and practical applications in using appropriate technological tools to fit young children. Existing training models do not adequately consider individual teacher differences, such as technological proficiency, teaching style, and learning preferences.

In a real context, a teacher training model should incorporate local characteristics and their needs. This study proposed a training model for kindergarten teachers in Wenzhou City, considering the region's educational environment, technological infrastructure, and teachers' strengths and weaknesses to enhance the effectiveness of training.

Empirical research plays a key role in the design and implementation of teacher training models. By collecting, analyzing, and evaluating the effectiveness of training models in real-world situations, the effectiveness of training can be verified, and problems can be identified and solved promptly, thus promoting the continuous improvement and optimization of training content and methods. This evidence-based cyclic iterative process ensures that the teacher training model can effectively adapt to changing educational needs in the long term.

Through continuous research and innovation activities, the information technology teacher training model is gradually breaking through and exploring new ways for teachers' professional growth and teaching quality improvement, particularly, in integrating information

technology teaching methods, can not only improve teachers' informalized teaching ability, but also stimulate teachers' innovative thinking and inject new vitality into kindergarten education. Therefore, developing and implementing the KTT model that integrates IT teaching methods is of far-reaching significance for improving the quality of early childhood education and promoting teachers' professional development.

Research Objectives

- 1) To investigate the current problems in kindergarten teaching training.
- 2) To design and evaluation of a kindergarten integrated IT teaching methods teacher training (KTT) model appropriate for the kindergarten of Wenzhou city.

Research Methodology

This study used literature research, questionnaire survey, and Delphi method to conduct research, mainly using quantitative research methods (Questionnaire survey) and qualitative research methods (Delphi method) to study. The combination of quantitative and qualitative research makes the research results more effective.

The research uses 21 experts to share their view on the questions in the kindergarten teacher training model questionnaire. For objective one, literature research and questionnaire interviews were used to collect data. The research population requirement was experts who have a deep understanding and rich experience in kindergarten teacher training and prefer to hold professors rank of from higher education institutions and teachers who have long been engaged in kindergarten teaching or management. Firstly, five experts were invited to evaluate the validity of the survey questionnaire. Secondly, 21 experts were invited to give their views in the survey questionnaire.

For objective two, the 3-round Delphi method was used to find results. The research population requirement was experts who have a deep understanding and experiences in kindergarten teacher training, preferably holding professors rank from higher education institutions, and teachers who have high experience kindergarten teaching or management. The sample group consisted of experts who have more than 10 years' experience in higher preschool education and familiar with the integration of information technology in kindergarten teacher training-related business, have a master's degree or above, and have a

title of associate professor or above; they have more than 10 years of practical experience in preschool education, are familiar with the integration of information technology methods in kindergarten teacher training-related business, and have a master's degree or above in preschool education and a high-level title of knowledge. The sample selection was based on the requirements of the Delphi method sample.

Previous research stimulation considerations

Zhu (2018) believes that the national "Internet+" training system aims to "promote the organic integration of information technology and teacher training, implementing a blended research and training model that combines online and offline methods." Learning theory focuses on how humans acquire, organize, store, and apply knowledge, and the psychological and physiological mechanisms underlying these processes which can help to understand the nature of the human learning process, provide a theoretical basis and guidance for education and teaching, and provide an important reference for the research of cognitive science, neuroscience, and other fields.

Knowles (1975) believed that "the drive for adult learning stems from problem-solving and meeting real needs." He identified the basic characteristics of adult learning as follows: First, adult learning is self-directed, autonomous, and spontaneous behavior. Additionally, adults have a higher level of self-regulation, being able to adjust their learning states, hence they wish to participate autonomously in the learning process. Second, adult learning is based on experience. The rich experience accumulated by adults in their work is an important resource for their learning. Third, adult learning is problem-oriented, emphasizing the "practical" value, hoping that what is learned can solve practical problems in work and life.

Research design

Objective 1: Use a literature review to find the teaching problems and then using a questionnaire survey to confirm those problems.

Objective 2: Deploy the Delphi method to design an IT-integrated pedagogy kindergarten teacher training (KTT) model suitable for kindergartens in Wenzhou City using data from expert interviews. This led to the combination of model elements and ultimately to the conclusions of this study.

Research Results

For objective one, the conclusion and content obtained are as follows:

Through data analysis and literature review, a discussion outline on current issues in kindergarten teacher training was developed, and five experts were invited to conduct an IOC test on the discussion outline. The five experts reached a consensus on the composition of the 8 elements related to current issues in kindergarten teacher training.

The survey results reflect the status analysis of issues in kindergarten teacher training in terms of comprehensive information technology teaching methods. The current issues consist of eight factors: training needs, training content, training methods and tools, training resources, training strategies, training organization, training operations, and training evaluation. Each aspect is assessed at a high, medium, low, or uncertain level. The whole respondents consider the overall level of training needs to be high; 90.5% of respondents believe that the overall level of research on training content is high, with 9.5% rated as medium; 85.7% of respondents think the level of training methods and tools is high, 14.3% rated as medium; 57.2% of respondents believe the level of training resources is high, 28.6% rated as medium, and 14.2% rated as low; 90.5% of respondents consider the level of training strategies to be high, 9.5% rated as medium; 100% of respondents rate the level of training organization as high; 47.6% of respondents believe the level of training operations is high, 33.43% rated as medium, and 19.0% rated as low; 85.7% of respondents think the level of training evaluation is high, 14.3% rated as medium.

Table 1 Current Situation Analysis of problems in kindergarten teacher training

Item	High	Middle	low	Unspecified	Total
1. Training needs	21(100%)	0(0.00%)	0(0.00%)	0(0.00%)	21
2. Training content	19(90.5%)	2(9.5%)	0(0.00%)	0(0.00%)	21
3. Training methods and tools	18(85.7%)	3(14.3%)	0(0.00%)	0(0.00%)	21
4. Training resources	12(57.2%)	6(28.6%)	3(14.3%)	0(0.00%)	21
5. Training strategies	19(90.5%)	2(9.5%)	0(0.00%)	0(0.00%)	21
6. Training organization	21(100%)	0(0.00%)	0(0.00%)	0(0.00%)	21
7. Training operations	10(47.6%)	7(33.4%)	4(19.0%)	0(0.00%)	21
8. Training evaluation	18(85.7%)	3(14.3%)	0(0.00%)	0(0.00%)	21

For objective 2, three rounds of questionnaire surveys were conducted on the indicators of the model using the Delphi method, and the following conclusions were drawn:

Analysis of Questionnaire Data on the Comprehensive Information Technology Teaching Method Training Model for Kindergarten Teachers in Wenzhou City, classified by median, mode, and interquartile range. The results were obtained through two rounds of expert interview survey.

Results of the third rounds questionnaires, the data were at acceptable range of MD and IQR. Experts generally believe that the framework of the comprehensive information technology teaching mode for kindergarten teachers in Wenzhou includes six dimensions: training needs, training content, training content, training methods and tools, training strategies, training organization, and training evaluation.

According to the relevant opinions and suggestions provided by experts on the selection of indicators, the influencing factors in the comprehensive information technology teaching mode of kindergarten teachers in Wenzhou were modified, merged and supplemented. Finally, the comprehensive information technology teaching mode of kindergarten teachers in Wenzhou city is determined. The eight index factors were modified to six index factors compared to the originally selected indicators. In order of importance, then: training needs, training methods and tools, training organization, training content, training strategies and training assessment. Secondary indicators were reduced from 80 to 36, with 44 removed.

Finally, the study shows that the comprehensive information technology teaching and training model for kindergarten teachers consists of 6 main index factors and 36 secondary index factors. details are as follows:

The 6 effective strategies for the training needs element are: professional knowledge and skills, teaching resources and tools, personal development needs, individual differences and feedback, updating teaching methods and strategies, and societal needs.

The 6 effective strategies for the training content element are: early childhood education theory, special education needs, children's mental health and behavior management, professional competence enhancement, principles of early childhood education, and multicultural education.

The 6 effective strategies for the training methods and tools element are: practical teaching, assistive technology, practice activities and observation classes, training manuals and materials, group discussions and collaboration, and learning communities and discussion platforms.

The 6 effective strategies for the training strategies element are: participatory training, progressive training, targeted course design, incentive mechanisms, diversified training formats, and peer assistance and sharing.

The 6 effective strategies for the training organization element are: training plans and objectives, incentive mechanisms, training activities, financial support, management mechanisms, and training resources.

The 6 effective strategies for the training evaluation element are: evaluation content, training effectiveness evaluation, formative assessment, participation assessment, continuous monitoring evaluation, and satisfaction assessment.

Based on the research results of research objective 1, the training model of kindergarten teachers is designed. Through three rounds of expert interviews, a model consisting of 6 primary indicator factors and 36 secondary index factors was developed.

After focus group interviews 9 experts to evaluate the model were conducted, the 6 main indicator factors and 36 minor indicator factors of the model received unanimous approval from the experts. One expert suggested adjusting the saturation and brightness of the colors in the model graphs to make the presentation clearer and more distinct. Another expert pointed out that the names of the factors “training activities” and “training resources” under the “training organization” element were too like the main factor names, making it difficult to differentiate between the factors. It was recommended to change the minor factors “training activities” and “training resources” to “learning activities” and “resource development.” Additionally, one expert suggested changing “training plan and objectives” to “plan and objectives.” Finally, the comprehensive information technology teaching method training model for kindergarten teachers was developed. (Figure 2)

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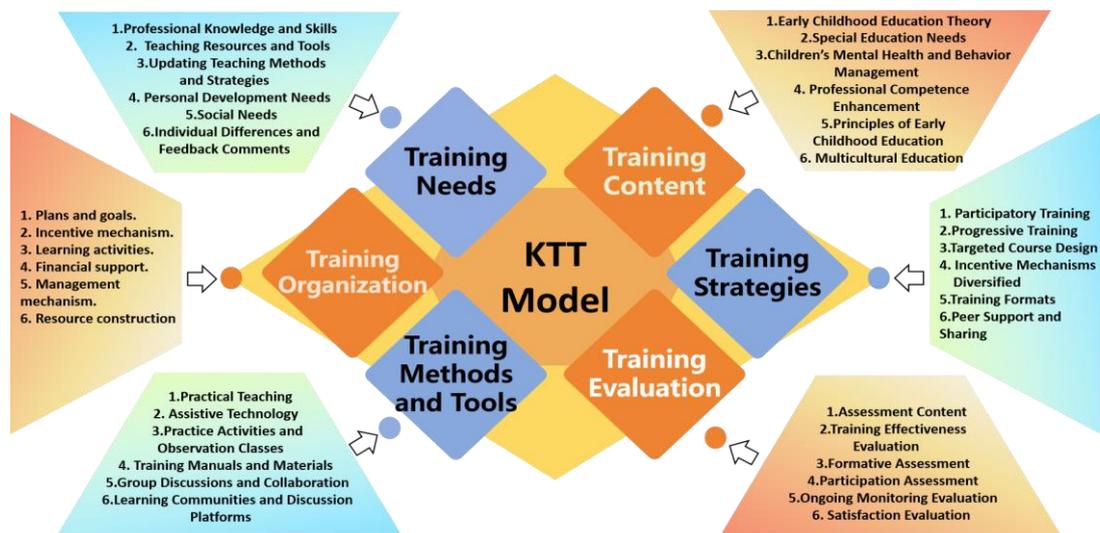


Figure 2 Kindergarten teacher training (KTT) model for integrated IT teaching methods for the kindergarten of Wenzhou city (modified version)

The specific description of the 6 elements of training needs are as follows: Professional Knowledge and Skills: This includes expertise in early childhood education theory, child psychology, teaching methods, and curriculum design, as well as practical skills in teaching, communication, and management. Teaching Resources and Tools: Providing teaching materials, teaching aids, and teaching equipment suitable for kindergarten education, as well as training in teaching technology and information technology tools to help teachers improve their teaching activities. Update of Teaching Methods and Strategies: Teachers need to learn and master a variety of teaching methods and strategies to enhance teaching effectiveness and meet the learning needs of different children. Personal Development Needs: Individual differences in teachers' personal development needs are also important factors. Some teachers may wish to pursue further studies, while others may need to enhance specific skills or knowledge. Social Needs: Teachers need to understand the changing social needs, adapt to social development, and improve the quality and effectiveness of educational services. Individual Differences and Feedback: There are individual differences among teachers, and personalized training programs should be developed based on individual needs and feedback to enhance the specificity and effectiveness of training.

The specific description of the 6 elements of training content are as follows: Teaching Methods and Techniques: Training teachers in using a variety of teaching methods and

techniques, such as heuristic teaching, situational teaching, game-based teaching, as well as skills in classroom management, student assessment, etc. Child Psychological Health and Behavior Management: Training teachers to understand issues related to child psychological health, learn how to build good relationships with young children, and effectively manage children's behavior. Early Childhood Education Theory: Introducing the basic theories of early childhood education, including child development stages, learning theories, educational psychology, etc., to help teachers better understand the characteristics of children's growth and learning. Professional Development: Training content should also include enhancing teachers' professional competence and ethical standards, cultivating their sense of responsibility, innovative spirit, and teamwork skills. Multicultural Education: Teachers need to understand the importance of multicultural education, learn how to promote cross-cultural communication and understanding among young children in teaching. Special Education Needs: Teachers should also receive training on special education needs, understanding how to support and educate children with special needs to promote their development.

The specific description of the 6 elements of training methods and tools are as follows: Practical Teaching: Training teachers through practical teaching practices, allowing them to apply the knowledge and skills they have learned in actual classrooms to enhance their practical skills. Practical Activities and Observation Lessons: Organizing practical activities and observation lessons for teachers to actively participate in and observe excellent teaching practices, improving their practical skills and teaching levels. Training Manuals and Materials: Providing specially written training manuals, textbooks, or teaching resources to help teachers systematically learn and master relevant knowledge and skills. Group Discussions and Collaboration: Promoting communication and interaction among teachers through group discussions and collaboration, jointly exploring educational issues, fostering idea exchange, and mutual growth. Learning Communities and Discussion Platforms: Establishing learning communities and discussion platforms for teachers to communicate, share experiences and resources, and promote mutual learning and growth. Assistive Technology: Using modern technology to assist teacher training, such as virtual reality technology, intelligent teaching systems, online assessment tools, etc., to enhance training effectiveness and teaching efficiency.

The specific description of the 6 elements of training strategy is as follows: Diversified Training Formats: Utilizing a variety of formats such as online, offline, practical, peer-to-peer communication, etc., to cater to different teachers' learning styles and needs. Participatory Training: Encouraging teachers to engage in classroom interactions, group discussions, case studies, and other activities to promote active participation and communication among learners, enhancing learning effectiveness. Targeted Course Design: Designing course content that meets the actual needs of kindergarten teachers, covering teaching theory, practical skills, curriculum design, and other aspects. Peer Assistance and Sharing: Encouraging teachers to exchange experiences, and establish professional communities, and cooperative networks to facilitate mutual learning and growth. Progressive Training: Adopting a phased and progressive training approach, cultivating teachers' comprehensive abilities from basic knowledge to professional skills and practical capabilities gradually. Incentive Mechanisms: Establishing reward mechanisms or certification recognition to motivate teachers to actively participate in training, enhancing learning motivation and effectiveness.

The specific description of the 6 elements of training organization are as follows: Planning and Objectives: Developing clear training plans and objectives, specifying training content, formats, and scheduling to ensure the systematic and continuous nature of training. Trainer Resources: Having a team of experienced and highly professional trainers, including education experts, psychologists, teaching specialists, etc., to provide professional guidance and support. Incentive Mechanisms: Establishing reward mechanisms or certification recognition to motivate teachers to actively participate in training, enhancing learning motivation and effectiveness. Learning Activities: Organizing various training activities such as lectures, seminars, workshops, field observations, practical guidance, etc., to provide diverse learning opportunities. Resource Development: Providing a wide range of teaching resources and tools, such as textbooks, teaching aids, teaching equipment, educational software, etc., to support teachers' learning and teaching activities. Financial Support: Providing necessary financial support for teacher training to ensure the smooth progress and quality assurance of training activities.

The specific description of the 6 elements of training evaluation are as follows: Evaluation Content: The evaluation content should include knowledge mastery, skills application ability, teaching effectiveness, etc., comprehensively assessing the training

outcomes of teachers. Formative Evaluation: Evaluating the diversity, flexibility, and effectiveness of training formats, including assessments of online courses, offline seminars, practical guidance, etc. Training Effectiveness Evaluation: Considering the above elements comprehensively, evaluating the overall training effectiveness and impact, analyzing the strengths and weaknesses of the training program, and providing improvement suggestions and directions for future training. Participation Assessment: Assessing teachers' participation and enthusiasm, including attendance rates, classroom interactions, completion of assignments, etc., to understand the recognition and level of involvement of teachers in the training. Ongoing Tracking Evaluation: Conducting ongoing tracking evaluation after the training ends to understand the application of training content and its effects by teachers in their work, promoting continuous improvement of training effectiveness. Satisfaction Evaluation: Assessing teachers' satisfaction with the training program and collecting feedback, gathering constructive opinions and suggestions to improve and optimize the training plan.

Discussion

From various sources, triangulate to objectively assess and deeply analyze teachers' training needs. Quantitative analysis is crucial. Teachers' needs are diverse with significant individual differences. Trainers should identify urgent practical problems, areas of poor performance, and pressing training needs. Limited resources should be allocated effectively (Zhao, Liang, & Zhu, 2010).

Training needs refer to the gap between actual work needs and job holders' abilities. They include requirements for training capabilities, courses, experts, and formats. Understanding these needs guides curriculum design and training decisions. It also improves training quality and students' professional growth (Su, 2015). Teacher training should focus on young children's development, interests, and thinking. Content should comply with their physical and mental development laws. Discovering and addressing real issues in children's development is also crucial in kindergarten training needs. Professional aspects of teacher behavior are important in the management process, with the rational aspect being the focus of the mechanism.

Teacher training resources include human, financial, material, and informational resources. The effectiveness of teacher training is directly influenced by the scale, quality, and

allocation of these resources. For new teachers, the need for “teaching researchers” is limited. Kindergartens should integrate teaching researchers into the teacher group, avoiding the role of evaluator or instructor, to optimize human resource utilization. Peer assistance is effective for new teachers, so kindergartens should encourage teacher collaboration and allow experienced teachers to serve as trainers. Material resources should address issues like outdated teaching equipment, insufficient seating, and simple training venue conditions. Kindergartens should invest in high-quality teacher training resources, including multifunctional classrooms with advanced multimedia equipment and suitable furniture for adult learning. This will eliminate issues that can affect training effectiveness, such as unclear slides, sound issues, and inadequate cooling in hot weather (Zhang, 2013).

The curriculum should meet the training needs of the teachers. The choice of training topics shapes the teaching staff team. Experts should be authoritative, cutting-edge, and grounded, understanding teachers' needs. Management personnel from educational authorities are invited for topics related to national, provincial, and municipal aspects. Professors and researchers from universities are invited for topics on cutting-edge early childhood education knowledge. University teachers specializing in preschool education are invited for teaching fundamentals, and managers and experts in health and childcare are invited for related topics. Experience-based participatory training emphasizes teachers' experiences and combines expert guidance to enhance training effectiveness. Training institutions should integrate industry and education, establish an industry-education-research system, and cooperate with kindergartens or practical bases. For practical content, on-site observation or shadow training should be adopted. Surveys show that 94% of rural kindergarten teachers prefer on-site observation or hands-on practice for work needs (Huang, 2023).

Teachers should have access to training programs, platforms, and resources. They should be involved in designing courses, contributing ideas, and creating a learner-centered culture that meets personal and professional needs. This increases training satisfaction, fulfillment, and learner identity. Incorporating "ethical teacher literacy" into the training design is also essential. Learning and development objectives are flexible and should be adapted to the actual development and context of the child. Hypothetical learning paths may not always be the standard answer. Context-specific learning paths may emerge because of changes in

the context of an activity. Teachers should understand that uniqueness and diversity may lead to observations that are inconsistent with previous assumptions. Updating and adapting learning paths to the context is necessary. In teacher training, focusing on the learning process, recognizing diversity, avoiding dogma, taking into account the nature of the context and emphasizing children's learning and thinking processes are key to generating appropriate learning pathways and supportive activities.

The Kirkpatrick Evaluation Model is useful for evaluating training (Mao & Lin, 2010). Alliger (1997) expanded the model to include reaction and learning levels. When evaluating kindergarten teachers, it's crucial to assess emotions, feedback, learning, and performance during training. Management should categorize content, set criteria, and score mastery. Evaluating teaching behaviors, comparing progress, and ensuring sustainability are also key. Regular assessments are needed to measure long-term effectiveness. For kindergarten management evaluation, it covers program development, implementation, training organization, plan modification, teacher needs analysis, and coordination. Teacher training evaluation should be comprehensive, involving multiple parties such as teachers, peers, management, experts, parents, and children for a thorough analysis (Jiang, 2021), including compulsory and elective courses, aims to create a flexible, adaptable, and diversified curriculum design pattern to cater to various learners (Liu & Zhang, 2009).

Differences between urban and rural areas must be fully considered. Rural kindergarten teachers face issues like outdated educational concepts, lack of skills, and shortage of modern technology. Each teacher position has specific responsibilities, leading to varying continuing education needs. Curriculum content should align with teachers' growth stages, and training should be phased and stratified.

Integrated curriculum design should focus on targeted nature and differentiated levels for different teachers. Teachers' growth can be divided into four stages: novice, adaptation, maturity, and expert, with unique challenges at each stage. Kindergarten teacher education and training should integrate theory with practice, considering regional needs and levels of kindergarten education reform and development. Training content should reflect regional characteristics, arranged according to cognitive development laws, enabling spiral ascent, gradual refinement, and repeated iterations for optimized teacher development (Liu & Zhang, 2009).

Recommendations

1. Closely deploying integrated theoretical knowledge with practical operation to ensure that participating teachers can deeply comprehend and effectively apply the theoretical knowledge in practical operation. Meanwhile, actively encourage teachers to continuously accumulate valuable experience through practice, discover and solve problems in practical operation, thus deepening their mastery and understanding of the training content is a must. In addition, emphasizing the importance of timely reflection and summarization by teachers, refining and elevating practical experience to form practical teaching insights with practical guiding significance, and providing strong support for future educational and teaching work should be supported.

2. With the rapid development of technology, the innovation of educational technology has brought unprecedented opportunities and challenges to teaching activities. Therefore, we actively introduce and integrate cutting-edge new technologies and tools to provide teachers with richer and more convenient teaching resources and methods, assisting them in better addressing various challenges in current teaching and further improving teaching quality and effectiveness. Meanwhile, the introduction of new technologies not only enhances teachers' teaching abilities but also effectively stimulates students' interest and enthusiasm for learning. For example, with the aid of intelligent teaching platforms, teachers can implement personalized teaching plans and provide precise guidance tailored to the characteristics and needs of different students; while students can engage more actively in classroom activities through interactive learning methods, enhancing learning outcomes. The introduction of new technologies also needs to fully consider its adaptability and sustainability. When selecting new technologies and tools, we need to thoroughly analyze whether they meet the actual needs of education and teaching, whether they can be effectively integrated with existing teaching resources, and whether they can provide long-term stable support for teaching work. In addition, we should strengthen teachers' technical training to ensure that they can proficiently master and effectively utilize these new technologies and tools.

3. Training should establish suitable platforms to promote in-depth collaborative learning and exchange among teachers, continuously enhancing teaching levels and educational innovation capabilities. To achieve this, we should develop a scientific and effective mechanism for collaborative learning, clarify the role positioning of teachers in

training, and promote deep interaction among teachers. Through the establishment of thematic discussion groups, teachers can engage in in-depth discussions on common educational issues and share their teaching experiences and insights. Meanwhile, we should organize teaching observation activities, allowing teachers to observe and evaluate each other, thereby identifying their shortcomings and absorbing the strengths of others. In addition, we should fully utilize modern technological means, such as online education platforms, social media, etc., to provide teachers with more convenient communication channels. Through these platforms, teachers can communicate, share teaching resources, discuss teaching issues anytime and anywhere, and achieve resource-sharing and complementary advantages.

4. The training process should highly value and committed to enhancing teachers' professional competence. This includes cultivating various knowledge and skills such as learning educational theories, mastering teaching methods, and the ability to design curriculum. Additionally, we particularly emphasize teachers' professional ethics to ensure that teachers can adhere to the original intention of education and actively fulfill their educational responsibilities in educational practice. Learning educational theories is the foundation for improving teachers' professional competence. Through systematic study of educational theory, psychology, and other related theories, teachers can deepen their understanding of the essence and laws of education, providing solid theoretical support for teaching practice. Mastering teaching methods is equally important. Teachers should actively learn and master diverse teaching methods to meet the learning needs of different students. Through practical exploration, continuously optimizing teaching methods to improve teaching effectiveness. In terms of curriculum design, teachers should have the ability to independently design courses. This includes clarifying course objectives, analyzing student needs in depth, and selecting teaching content and methods reasonably. Through well-designed courses, students' learning interests can be stimulated, and their comprehensive abilities can be cultivated.

5. Cultivate teachers' innovative awareness and abilities. In the rapidly changing educational environment, teachers should have the spirit of exploring new educational concepts and teaching methods to adapt to the development of the times and the needs of students. Providing sufficient opportunities for teachers to practice innovation, encourage them to try and apply novel teaching methods and strategies should be enhanced. At the

same time, we should establish a scientific evaluation mechanism to timely evaluate and provide feedback on teachers' innovative practices to promote continuous improvement and enhance teaching levels. Teachers' individual differences and develop personalized training plans based on factors such as their professional background, teaching experience, and interests, to meet the growth needs of different teachers should be considered. Through personalized training plans, we can better leverage the strengths of each teacher, promote their professional growth and development.

6. Emphasize cultivating teachers' reflective abilities. Reflection is an important way for teachers' professional growth. Through reflection and summarization, teachers can continuously improve their teaching methods and strategies, enhance teaching effectiveness, and lay a solid foundation for students' comprehensive development. Therefore, we should guide teachers to actively engage in reflection and summarization, transforming practical experience into valuable teaching wisdom. Teachers engaging in educational innovation and practical exploration comprehensively and from multiple perspectives, provide them with sufficient opportunities and platforms, promote their professional growth and development, and contribute to enhancing the quality of education and teaching should promote.

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