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A Study on the Status of Information Technology Application Ability among Preschool Teachers

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Abstract

As the education sector fully enters the phase of digital development, teachers play a pivotal role in advancing the informatisation of preschool education. This study focuses on analysing the current status of preschool teachers' information technology application ability and the factors influencing it. Referencing the *Standard for Information Technology Application Ability of Primary and Secondary School Teachers (Trial)* and considering the specific characteristics of early childhood education, an assessment system suitable for preschool teachers was established. On this basis, a questionnaire survey was conducted with 555 preschool teachers. The research indicates that while preschool teachers generally meet the qualified standards for information technology application ability, there remains significant room for improvement. The ability of teachers to apply information technology is influenced by factors such as parental status, teaching experience, and professional title. Based on these findings, relevant recommendations are proposed to enhance preschool teachers' information technology application capabilities and promote the development of informatisation in preschool education.

Keywords: Preschool Teachers, Information Technology, Information Technology Application Ability

1. Introduction

With the rapid advancement of network science and communication technology, information technology has permeated every aspect of education and teaching. This rapid development imposes higher standards on kindergarten teachers. In recent years, the State has attached great importance to the construction of education informatisation, issuing a series of policy documents. The basic content of the *Professional Standards for Kindergarten Teachers*, released in 2012, proposed that preschool teachers should possess relevant information knowledge and capabilities. This signifies that preschool teachers are required not only to master professional knowledge and skills in early childhood education but also to be proficient in applying information technology to better organise and implement teaching activities (Chinese Society of Education, 2014) [4]. This provides robust support for the development of informatisation in preschool education. Some researchers argue that "preschool education

informatisation is gradually becoming a trend. Preschool teachers need to possess corresponding information technology application capabilities in all aspects of teaching activities". It is suggested that preschool teachers are not merely the executors of teaching activities but also play a crucial role in the development of education informatisation. Therefore, teachers should pursue continuous learning and focus on self-improvement to better fulfil their responsibilities in the information age and drive the sustainable development of preschool education informatisation (Yang, 2024) [12].

Through research, the authors found that studies on teacher information technology application in China have predominantly focused on higher education institutions and primary and secondary schools, with less attention paid to the kindergarten stage. Relevant empirical studies indicate that Chinese preschool teachers exhibit significant shortcomings in the deep integration of informational educational resources. Consequently, enhancing preschool

teachers' ability to utilise information technology will not only help elevate their professional development level but also improve teaching quality and effectiveness. Improving this capability will promote the widespread popularisation of informatisation at the preschool stage, facilitate the integration of digital means into all aspects of teaching, and forcefully drive the development of preschool education informatisation.

Information technology refers to a collection of technologies that rely on advanced facilities such as computers and networks to collect, process, store, transmit, and practically apply information. It is a comprehensive technology. Some scholars hold the view that information technology encompasses multiple dimensions, primarily consisting of information technology itself, application methods, and techniques. Thus, information technology is a broad term primarily studying the science and technology of information generation, collection, display, transmission, conversion, identification, and practical application. It is also frequently referred to as Information and Communication Technology, or ICT.

In 2014, the Ministry of Education promulgated the *Standard for Information Technology Application Ability of Primary and Secondary School Teachers (Trial)*, which clearly defined this ability as the capacity to use information technology to improve work efficiency, promote students' academic and personal growth, and facilitate professional development (Ministry of Education, 2014) [8]. Teachers' information technology application ability is regarded as a key component in the process of education informatisation. Consequently, teachers' competence in IT application and teaching has become a universally accepted dual-core standard. Li (2020) [7] subdivided the development of teachers' information technology application ability into four main stages: the technical operation stage, the integrated design stage, the fused application stage, and the innovative application stage. Zhu and Yan (2015) [14] hold the view that information technology application ability represents the capacity of teachers, based on a solid foundation of educational theory and practical experience, to skillfully employ modern IT means to assist and support the design, implementation, and evaluation of teaching activities, thereby promoting students' active and deep learning. Scholar Li (2024) [6] believes that "teacher information technology application ability refers to the ability of teachers to apply modern equipment such as computers and multimedia in the education and teaching process according to the needs of students' physical and mental development and teaching requirements, enabling teachers to achieve good teaching results".

In this study, "preschool teacher information technology application ability" is defined as: the ability of preschool teachers, during actual teaching and their own professional growth, to efficiently use IT means and various resources to improve the quality and efficiency of educational activities, complete teaching tasks, promote the comprehensive development of young children, and realise the sharing of educational resources to optimise activity outcomes. Referencing the requirements for preschool teachers in the *Standard for Information Technology Application Ability of Primary and Secondary School Teachers (Trial)*, this study requires preschool teachers to use IT to conduct

kindergarten activities across five dimensions: Technical Literacy, Planning and Preparation, Organisation and Management, Assessment and Diagnosis, and Learning and Development. Furthermore, they must be able to combine these with teaching goals and content according to the physical and mental development laws and personalised needs of different children, creating new modes in preschool education and teaching.

2. Research Design

2.1 Participants

This study primarily investigates the information technology application ability of preschool teachers. To ensure the authenticity and typicality of the collected data, after careful consideration, this study mainly selected preschool teachers in Province G as the survey subjects. A total of 555 teachers were selected as the survey sample. The subjects investigated covered factors such as gender, teaching experience, educational background, professional title, parental status, and the nature of the kindergarten, ensuring that the research subjects are representative.

Table 1: Teacher Demographics

Basic Information	Classification	Frequency (N)	Percentage (%)
Gender	Male	15	2.7%
	Female	540	97.3%
Parental Status	No children / Not rearing children	268	48.3%
	Bearing/Rearing 1 child	134	24.1%
	Bearing/Rearing 2 children	137	24.7%
	Bearing/Rearing 3 or more children	16	2.9%
Teaching Experience	1–5 years	310	55.9%
	6–10 years	116	20.9%
	11–15 years	60	10.8%
	16–20 years	32	5.8%
	21–30 years	27	4.9%
	More than 30 years	10	1.8%
Professional Title	Unranked	332	59.8%
	Preschool/Primary Education Level 2 (or below)	165	29.7%
	Preschool/Primary Education Level 1	51	9.2%
	Preschool/Primary Education Senior	5	0.9%
	Middle-Senior or above	2	0.4%

2.2 Research Method

This paper primarily employs the questionnaire method. Based on the survey objectives and research needs, preschool teachers in Province G were selected as the research subjects. A total of 555 questionnaires were recovered. The questionnaire was designed to investigate the status of preschool teachers' information technology application ability, collect relevant data, and further understand the capabilities of preschool teachers in Province G. Finally, the collected data were used to investigate and analyse the current status, existing problems, and causes of these problems.

2.3 Research Instrument

The questionnaire was compiled based on the work of Qu (2018) [9], which utilises the *Standard for Information Technology Application Ability of Primary and Secondary School Teachers* issued by the Ministry of Education as a basis. It also references expert interpretations by Zhu Zhiting and others, the *ICT Measurement Guide in Education*, and the National Self-Evaluation Tool for Information Technology Application Ability of Primary and Secondary School Teachers, combining these with the actual context of this study to create the *Questionnaire on Primary and Secondary School Teachers' Information Technology Application Ability*. In the research process, a Likert five-point scale was used for in-depth analysis of the obtained data. Questions have five options ranging from "Strongly Disagree" to "Strongly Agree", assigned values of 1 to 5 respectively. A higher score indicates a higher degree of conformity with the established requirements.

3. Results and Analysis

The survey was conducted across five aspects: "Technical Literacy, Planning and Preparation, Organisation and Management, Assessment and Diagnosis, and Learning and Development". The analysis aims to understand the status of preschool teachers' information application capabilities.

3.1 Analysis of the Current Status of Preschool Teachers' Information Technology Application Ability

To gain a detailed understanding of the specific levels of preschool teachers' IT application ability, the mean values of the five dimensions were calculated. The mean values were classified into levels: a mean score ≥ 3 and < 4 is "Qualified"; ≥ 4 and < 4.5 is "Good"; and ≥ 4.5 is "Excellent". An analysis of the overall scale for 555 preschool teachers yielded an overall score of 3.9555, indicating that the information technology application ability of preschool teachers in Province G has only reached the "Qualified" level. Therefore, the scale was analysed to understand the existing differences among teachers, resulting in Table 2. As shown in Table 2, the mean for Technical Literacy is the highest at 4.1205. This is followed by Organisation and Management, Planning and Preparation, Learning and Development, and Assessment and Diagnosis. Based on the scoring standards, Assessment and Diagnosis scored the lowest, indicating that preschool teachers' proficiency in this area is lower and that their IT application ability requires further improvement.

Table 2: Data Analysis of Dimensions

Dimension	N	Mean	Standard Deviation (SD)
Technical Literacy	555	4.1205	0.55902
Planning and Preparation	555	3.8748	0.58935
Organisation and Management	555	3.9733	0.55526
Assessment and Diagnosis	555	3.8414	0.65136
Learning and Development	555	3.8627	0.64374
Overall	555	3.9555	0.51154

3.2 Analysis of Differences in Preschool Teachers' Information Technology Application Ability

To explore the differences in IT application ability among preschool teachers in Province G, SPSS 27.0 software was

used to conduct Independent Samples T-tests, One-way ANOVA, and correlation analyses. The study examined the five dimensions of preschool teachers' information technology application ability to analyse differences deeply. The core purpose of this study is to uncover key factors influencing preschool teachers' IT application ability, identify potential problems and strengths, and further promote the comprehensive development of the quality of the preschool teacher workforce.

3.2.1 Analysis of Gender Differences

Data processing via SPSS 27.0 was conducted to analyse the difference between gender and preschool teachers' IT application ability. As shown in the results in Table 3, the mean score for male preschool teachers in IT application ability is 3.899, while for female preschool teachers it is 3.957. It can be seen that the overall means for male and female preschool teachers are similar, and the *p*-values are all greater than 0.05, indicating no significant difference in information technology application ability based on gender.

Table 3: Analysis of Gender Differences

Dimension	Male	Female	T	p
Technical Literacy	4.038 ±0.395	4.123 ±0.563	-0.578	0.563
Planning and Preparation	3.867 ±0.421	3.875 ±0.594	-0.054	0.957
Organisation and Management	3.787 ±0.515	3.979 ±0.556	-1.321	0.187
Assessment and Diagnosis	3.817 ±0.504	3.842 ±0.655	-0.149	0.881
Learning and Development	3.907 ±0.489	3.862 ±0.648	0.268	0.789
Overall	3.899 ±0.384	3.957 ±0.515	-0.436	0.663

3.2.2 Analysis of Differences by Parental Status

Data processing via SPSS 27.0 was conducted to analyse the difference between parental status and preschool teachers' IT application ability. From the difference analysis in Table 4, it is known that teachers bearing or rearing three or more children performed best overall, with their scores reaching the "Good" standard level. This was followed by those bearing or rearing two children, one child, and those not bearing or rearing children, in decreasing order of scores. From the perspective of each dimension, the *p*-value for Technical Literacy is 0.133, which is greater than 0.05; thus, parental status shows no significance in Technical Literacy. However, in the four dimensions of Planning and Preparation, Organisation and Management, Assessment and Diagnosis, and Learning and Development, the *p*-values are all less than 0.05, indicating significant differences.

Table 4: Analysis of Differences by Parental Status

Dimension	No Children	1 Child	2 Children	3+ Children	F	p
Technical Literacy	4.12 ±0.543	4.116 ±0.56	4.089 ±0.584	4.438 ±0.548	1.875	0.133
Planning & Preparation	3.828 ±0.593	3.892 ±0.605	3.903 ±0.558	4.266 ±0.544	3.078	0.027
Organisation & Management	3.908 ±0.529	4.016 ±0.526	4.01 ±0.605	4.388 ±0.582	4.762	0.003
Assessment & Diagnosis	3.768 ±0.618	3.864 ±0.671	3.9 ±0.664	4.391 ±0.664	5.483	0.001
Learning & Development	3.788 ±0.633	3.891 ±0.677	3.933 ±0.616	4.275 ±0.584	4.085	0.007
Overall	3.908 ±0.491	3.975 ±0.518	3.982 ±0.526	4.36 ±0.524	4.362	0.005

3.2.3 Analysis of Differences by Teaching Experience

Data processing via SPSS 27.0 was conducted to analyse the difference between teaching experience and preschool teachers' IT application ability. As shown in Table 5, teachers with more than 30 years of experience have the highest mean value, while teachers with 1–5 years have the lowest mean value. Regarding the IT application ability of preschool teachers with different teaching experience, the *p*-

value for Technical Literacy is 0.229, and for Planning and Preparation, it is 0.176; both are greater than 0.05. Therefore, teaching experience has no significance in the two dimensions of Technical Literacy and Planning and Preparation. However, the *p*-value for Organisation and Management is 0.02, for Assessment and Diagnosis is 0.014, and for Learning and Development is 0.03; all are less than 0.05, indicating significant differences.

Table 5: Analysis of Differences by Teaching Experience

Dimension	1-5 Years	6-10 Years	11-15 Years	16-20 Years	21-30 Years	30+ Years	F	P
Technical Literacy	4.071±0.548	4.153±0.519	4.221±0.671	4.205±0.609	4.159±0.525	4.314±0.446	1.382	0.229
Planning & Preparation	3.822±0.575	3.905±0.533	3.95±0.682	3.945±0.712	4±0.643	4.15±0.337	1.538	0.176
Organisation & Management	3.919±0.529	3.96±0.573	4.09±0.563	4.075±0.668	4.133±0.566	4.34±0.453	2.704	0.02
Assessment & Diagnosis	3.763±0.628	3.944±0.62	3.983±0.696	3.742±0.75	4.019±0.71	4.075±0.657	2.899	0.014
Learning & Development	3.808±0.611	3.9±0.631	3.967±0.689	3.75±0.792	4.089±0.722	4.26±0.534	2.501	0.03
Overall	3.899±0.482	3.991±0.488	4.063±0.595	3.973±0.62	4.092±0.555	4.244±0.432	2.46	0.032

3.2.4 Analysis of Differences by Professional Title

Data processing via SPSS 27.0 was conducted to analyse the difference of professional title on preschool teachers' IT application ability. From the analysis in Table 6, it is found that preschool teachers with "Middle-Senior or below" titles have the highest mean value, while "Unranked" preschool teachers have the lowest mean value. Regarding the IT capability of preschool teachers with different titles, the *p*-value for Planning and Preparation is 0.412, for Assessment

and Diagnosis is 0.273, and for Learning and Development is 0.229; all are greater than 0.05. Therefore, professional title shows no significance in the three dimensions of Planning and Preparation, Assessment and Diagnosis, and Learning and Development. However, in the two dimensions of Technical Literacy and Organisation and Management, the *p*-values are both less than 0.05, indicating significant differences.

Table 6: Analysis of Differences by Professional Title

Dimension	Unranked	Level 2 or below	Level 1	Senior	Middle-Senior or below*	F	P
Technical Literacy	4.064±0.549	4.186±0.562	4.269±0.594	4.086±0.359	4.429±0.606	2.509	0.041
Planning & Preparation	3.849±0.567	3.879±0.589	4±0.733	4±0.354	4.25±0.354	0.99	0.412
Organisation & Management	3.905±0.545	4.046±0.55	4.153±0.597	4.12±0.39	4.3±0.424	3.61	0.006
Assessment & Diagnosis	3.813±0.627	3.873±0.66	3.887±0.767	3.85±0.652	4.75±0.354	1.289	0.273
Learning & Development	3.837±0.608	3.857±0.658	4±0.81	4.12±0.39	4.5±0.707	1.412	0.229
Overall	3.912±0.485	3.993±0.522	4.088±0.624	4.048±0.379	4.44±0.509	2.175	0.071

4. Discussion

4.1 Overall Status of Preschool Teachers' Information Technology Application Ability

Through in-depth analysis of the questionnaire survey, it is concluded that the information technology application ability of preschool teachers in Province G is generally at a qualified level, but the overall level still needs improvement. In terms of the five dimensions, the highest score is in the Technical Literacy dimension, indicating that teachers can realise the active role and application value of information technology in the stage of child development and teaching practice. The lowest score is in the Assessment and Diagnosis dimension. Although preschool teachers use information technology to record children's learning and development and consciously use digital methods to evaluate teaching schemes, their ability to utilise informational evaluation tools and use online resources to create practice tools for children is weak, which may lead to a certain degree of subjectivity in the evaluation process. In the dimension of Planning and Preparation, in teaching practice, preschool teachers possess the ability to carry out instructional design using information technology based on teaching objectives; however, the effectiveness, time taken, and proficiency in design are insufficient. This indicates that the ways preschool teachers utilise IT means in their daily

work are monotonous, and their ability to use IT to cope with dynamic changes in teaching activities needs to be improved. Regarding the dimension of Organisation and Management, preschool teachers are able to adjust teaching strategies in a timely manner according to the children's specific audio-visual conditions; however, when facing sudden IT failures, the teaching plan is affected, necessitating strengthened training in this regard. In the dimension of Learning and Development, most preschool teachers are able to discover the importance of using IT in the era of informatised education and have the consciousness to actively develop their own informatisation level and apply it in daily practice. They can use various informational tools to obtain relevant materials, but in terms of resource sharing, they rarely engage in active sharing and discussion, which is unfavourable for the widespread development of informatisation.

4.2 Status of Preschool Teachers' Information Technology Application Ability Under Different Variables

There is no difference in information technology application ability among preschool teachers of different genders. Through the research in Table 3, it is found that there is no significant difference between the various dimensions of

preschool teachers' IT application ability and gender. This result is consistent with the findings of Tang (2023) [10]. Given that female kindergarten teachers account for over 95%, this proves that the preschool teacher group is predominantly female; in the future, the strength of the male preschool teacher workforce can be strengthened.

Preschool teachers with different parental statuses show differences in IT application ability in Planning and Preparation, Organisation and Management, Assessment and Diagnosis, and Learning and Development. Through the research in Table 4, it is found that the IT application ability of teachers bearing or rearing three or more children scores higher overall than that of teachers bearing or rearing two children or fewer. The IT application ability level of preschool teachers who have not borne/reared children or have borne/reared one child is relatively low. Compared with teachers who have not borne/reared children, teachers who have families and are rearing children need stronger multitasking and time management skills in addition to their work. They also require more technical help in their tasks, such as online education and health management, which can lead them to use and master information technology more frequently. At the same time, they may also come into contact with more technical tools and shared resources through communication with other parents and educators.

Preschool teachers with different teaching experience show significant differences in IT application ability in Organisation and Management, Assessment and Diagnosis, and Learning and Development. Through the research in Table 5, it is found that the overall score of teachers with more than 30 years of experience is higher than that of those with less than 30 years, and preschool teachers with 1–5 years of experience have the lowest overall score. This result is consistent with the findings of Li (2024) [6]. Relative to new preschool teachers, preschool teachers with longer teaching experience have higher IT application ability. On one hand, teachers with long teaching experience have been honed by years of educational and teaching practice and have accumulated rich experience in their daily work. These experiences not only deepen preschool teachers' understanding of the essence of preschool education but also make them realise the key role of information technology in preschool education and teaching. In their work, through multiple channels such as self-study, in-kindergarten training, and participation in various teaching seminars, they have gradually mastered a series of IT operation skills. Whether it is basic office software application or professional preschool education teaching software operation, they can use them relatively proficiently, and their IT application ability has been substantially improved. On the other hand, for preschool teachers with shorter teaching experience, having just entered the kindergarten, there is much work to familiarise themselves with. Facing the wide variety of IT equipment in the kindergarten, they may feel unfamiliar. Kindergarten equipment includes multimedia teaching equipment, intelligent teaching management systems, etc. Due to a lack of sufficient understanding and opportunities for practical operation, they are prone to various problems during operation and use, thereby limiting their ability to effectively integrate information technology into teaching activities. For example, in classroom teaching, teachers with short teaching

experience may cause unsmooth teaching processes due to unskilled operation of projectors, electronic whiteboards, and other equipment, affecting teaching effectiveness.

Preschool teachers with different professional titles show differences in IT application ability in Technical Literacy and Organisation and Management. Through the research in Table 6, it is found that the IT application ability of preschool teachers with "Middle-Senior or below" titles is higher than the scores of "Preschool (Primary) Senior" and "Preschool (Primary) Level 1", with unranked preschool teachers scoring the lowest. Relative to preschool teachers of other titles, preschool teachers with middle-senior titles have more learning and teaching experience, such as participating in professional development training programmes. At the same time, teachers with high titles usually serve as the leadership layer and can more easily obtain resources and support provided by the school, including the configuration of advanced equipment, computers, software, and online platforms. Long-term teaching practice enables them to use the huge potential of information technology in optimising the teaching process and improving teaching effectiveness. It can be seen that preschool teachers with middle-senior titles have better IT application ability; they will include IT means in teaching activity design to better attract children's attention and stimulate children's learning interest. Furthermore, they continuously attempt and explore in practice, gradually mastering the application skills of various IT tools in teaching. Meanwhile, teachers with middle-senior titles usually find it easier to obtain more high-quality training resources. In order to exert their leading role in the teaching field, kindergartens will prioritise arranging for them to participate in various high-level IT training activities. These trainings include frontier educational technology concepts, the latest teaching software applications, and innovative teaching method integration, allowing middle-senior title teachers to upgrade their knowledge systems and access and master advanced IT application skills.

5. Recommendations

5.1 Improve Preschool Teachers' Informatisation Teaching Assessment

Through the analysis of the dimensions of preschool teachers' IT application ability, it was found that preschool teachers scored lowest in the Assessment and Diagnosis dimension. Preschool teachers should improve the combination of information technology and teaching assessment. Firstly, kindergartens should provide teachers with special training and seminars to help them master tools and methods for informatisation teaching assessment. Information technology experts can be requested to provide guidance and share best practices and innovative methods. The Digital Village Development Action Plan (2022-2025) document explicitly points out that relying on existing various educational resource platforms, functional applications integrating teacher capability assessment, precise pushing of learning resources, and tracking and feedback of learning effects should be developed, to gather high-quality learning resources in layers and categories (Cyberspace Administration of China, 2024). Kindergarten leaders should also perfect evaluation and incentive systems as a guarantee. When recruiting preschool teachers,

kindergartens can make informatisation teaching one of the assessment indicators, adding informatisation teaching to the screening conditions. For incumbent preschool teachers, informatisation teaching or proficient application of IT can be used as annual assessment indicators. Furthermore, preschool teachers should be guided to use informatisation teaching in open classes, and specialised informatisation teaching research groups can be established to encourage preschool teachers to use IT in teaching (Zhang, 2020) [13]. They must also learn to utilise IT tools to conduct data analysis on children, find problems existing in children's development, and solve them in a targeted manner to achieve individualised education (Li, 2024) [6]. Therefore, preschool teachers using informatisation for teaching assessment can combine various educational resources and choose appropriate technical means. At the same time, kindergartens can require teachers to perfect the evaluation system, making informatisation teaching assessment a requirement, guiding preschool teachers to carry out effective evaluation practices, and making evaluation ability an important assessment indicator for professional development and promotion to motivate preschool teachers to participate actively. Kindergartens can also develop and provide rich evaluation resources, evaluation standards, guidelines, and case analyses to help teachers better understand and apply informatisation assessment.

5.2 Enhance the Integration of Information Technology into Preschool Teachers' Lives

For preschool teachers with different parental statuses, the methods of support should vary. Kindergartens should formulate relevant methods for improving IT application ability according to the different parental characteristics of preschool teachers. Specifically for preschool teachers who are not rearing/bearing children, firstly, it is necessary to organise all-staff training on education informatisation to improve teachers' technical literacy, enabling them to master the latest computer technology and proficiently use modern communication equipment. Teachers should be able to correctly handle the relationship between educational IT and teaching content, possessing capabilities such as making PPT courseware and micro-videos (Chen, 2024) [2, 3]. Currently, traditional teaching forms can no longer meet the learning and development needs of children; preschool teachers should adopt diversified informatisation teaching means to better achieve teaching purposes (Chen & Song, 2024) [2, 3]. To improve the awareness and skill level of all teachers in applying network education resources, schools should create examples of applying network education resources in educational practice and sort out and widely promote successful informatisation teaching experiences in real-time. Therefore, in the process of preschool education moving towards informatisation, preschool teachers should integrate more with information technology in their lives, which is the core driving force promoting this development trend. When facing various different informatisation teaching equipment and software, preschool teachers should uphold an attitude of active exploration, boldly operate them, and have the courage to try new teaching methods and tool applications. However, currently, some preschool teachers choose to reduce the use of informatisation teaching resources due to fear of operational errors and a

lack of confidence in their own operational abilities. Teachers who have not borne/reared children, due to having relatively ample time, should utilise their spare time to participate in online and offline IT training courses to enhance their technical literacy and application capabilities. Teachers who are bearing/rearing one child can use fragmented time to learn, reducing time costs, and can also jointly explore home-school communication platforms, using IT for home-kindergarten co-nurturing while improving their own technical level. It is also possible to invite preschool teachers who are rearing three or more children and have strong technical application abilities to hold sharing sessions and lectures to enhance the awareness and knowledge of other teachers. They can also act as "mentors" for IT within the kindergarten, consolidating their own skills through sharing while also driving the development of the teacher team in the kindergarten. This lets teachers understand that practice is the sole criterion for testing truth. Through continuous practical attempts and learning accumulation, preschool teachers will deeply realise the importance of education informatisation, actively change inherent concepts, and proficiently master the functional characteristics of various informatisation teaching equipment and software in frequent practical operations. Thus, they can cleverly integrate information technology into every link of the children's daily teaching activities, from the smart interactive introduction in morning activities to multimedia demonstrations in classroom teaching, comprehensively improving teaching quality and efficiency and creating a higher quality educational environment for children's growth and development.

5.3 Strengthen Opportunities for New Teachers to Learn Informatisation

Regarding teaching experience, for new preschool teachers, their information technology foundation is weak and their teaching experience is insufficient, but their willingness to learn is strong. Kindergartens should provide new teachers with many learning opportunities. Schools should establish examples of applying network education resources in the educational process and promptly summarise and promote successful informatisation teaching experiences to improve the awareness and skill level of all teachers in applying network education resources (Wen, 2022) [11]. Organise teachers to participate in intra-kindergarten training regarding IT introduction, learn multimedia equipment, and provide cases and demonstrations. Let new teachers observe more informatisation teaching demonstration classes by senior teachers, learning how to naturally integrate information technology into teaching, and explore the integration of information technology in the five major domains of the kindergarten curriculum. For teachers with high teaching experience, their exemplary role can be exerted to promote opportunities for new teachers to learn IT from multiple aspects and fields. Different tools can also be equipped for preschool teachers at different stages so that all teachers can develop.

5.4 Provide a Good Informatisation Teaching Environment

Addressing preschool teachers with different professional titles, kindergartens should provide unranked preschool

teachers with the same equipment conditions as teachers of other ranks, enhancing support in hardware and software for information technology. The effectiveness of preschool teachers implementing informatisation education and teaching is closely related to the status of teaching equipment equipped by the kindergarten. To improve preschool teachers' IT ability, kindergartens should provide perfect equipment and facilities. Since the kindergarten is the main carrier of education and teaching activities, it is necessary to build a perfect and advanced informatisation teaching environment to provide teachers with solid hardware and software support. Kindergartens must adhere to being guided by actual teaching needs; while equipping and updating teaching equipment where conditions permit, they must also maintain existing equipment to realise maximum resource utilisation rates (Zhang, 2020) [13]. A good information cultural environment is a strong stimulus for the generation and development of teacher informatisation leadership. Schools with better information culture construction also have better informatisation teaching application among their teacher groups (Lang, 2024) [5]. Therefore, where conditions permit, kindergartens should not only strictly update online informatisation teaching tools in a timely manner but also strengthen the maintenance and management of existing equipment, such as computers, tablets, smart whiteboards, and projectors, ensuring that the invested equipment is sufficient in quantity and has good performance and operational value. They can also provide diversified teaching software and apps, support online learning and resource sharing, and actively advocate for preschool teachers to devote themselves to the research and innovative practice of informatisation teaching. By fully utilising the multiple functions of IT platforms and carrying out informatisation learning activities in an orderly manner, the infinite potential of IT in the field of preschool education can be excavated. From subtle cultural influence to actual condition support, this will allow the overall information technology application ability of preschool teachers to obtain further development and improvement.

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