

Retraction

Retracted: Preservice Training Strategies and Guarantee Mechanisms for Primary and Secondary School Teachers in the Development of Smart Cities by the Internet of Things

Security and Communication Networks

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This article has been retracted by Hindawi following an investigation undertaken by the publisher [1]. This investigation has uncovered evidence of one or more of the following indicators of systematic manipulation of the publication process:

- (1) Discrepancies in scope
- (2) Discrepancies in the description of the research reported
- (3) Discrepancies between the availability of data and the research described
- (4) Inappropriate citations
- (5) Incoherent, meaningless and/or irrelevant content included in the article
- (6) Peer-review manipulation

The presence of these indicators undermines our confidence in the integrity of the article's content and we cannot, therefore, vouch for its reliability. Please note that this notice is intended solely to alert readers that the content of this article is unreliable. We have not investigated whether authors were aware of or involved in the systematic manipulation of the publication process.

Wiley and Hindawi regrets that the usual quality checks did not identify these issues before publication and have since put additional measures in place to safeguard research integrity.

We wish to credit our own Research Integrity and Research Publishing teams and anonymous and named external researchers and research integrity experts for contributing to this investigation.

The corresponding author, as the representative of all authors, has been given the opportunity to register their agreement or disagreement to this retraction. We have kept a record of any response received.

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- [1] Y. Wang, "Preservice Training Strategies and Guarantee Mechanisms for Primary and Secondary School Teachers in the Development of Smart Cities by the Internet of Things," *Security and Communication Networks*, vol. 2022, Article ID 4699719, 11 pages, 2022.

Research Article

Preservice Training Strategies and Guarantee Mechanisms for Primary and Secondary School Teachers in the Development of Smart Cities by the Internet of Things

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It aims to perfect the preservice training system and improve the teaching quality of primary schools. The research methods are questionnaire survey and interview, and 154 teachers from 16 primary schools under the background of smart city development are used as the research objects. Questionnaires are distributed to them, and the Internet of Things (IoT) technology is used to analyze the adaptation law of primary school teachers' preservice training and to conduct in-depth research on teacher education and training strategies according to the relevant curriculum system. The results manifest that the IoT technology can effectively process the questionnaire data. From the perspective of the smart city, more than 70% of art teachers and physical education (PE) teachers know nothing about their professional level, and nearly 40% of music teachers know little about their professional level of teachers. In addition, more than 50% of the teachers surveyed do not have a clear understanding of their own professional standards, teacher training standards, primary school training strategies, and guarantee mechanisms of the teaching effect. It means that teachers in the progress of smart cities should strengthen the training of professional level and education policy during preservice training. After the evaluation and training system is established according to the ratio of "25.4% of primary school students' growth knowledge +42.7% of professional knowledge +31.9% of teacher education curriculum knowledge", students' learning enthusiasm increased by 23%, and their academic performance increased by 15%. This indicates that the training system can ensure the good learning effect of students. Therefore, the research on preservice training strategies and guarantee mechanisms for primary and secondary school teachers in smart cities by the IoT provides a certain direction for subsequent teacher training.

1. Introduction

With the swift growth of the social economy, the increasingly diverse social environment has put forward higher requirements for the training and development of teachers [1–3]. For current primary education, the core value is to promote the advancement of students' abilities and help students achieve satisfactory academic performance. The rapid expansion of the Internet of Things (IoT) technology has also brought some help to teacher training. With the vigorous growth of practical activities, the theoretical research on students' academic blossom is becoming rich and mature. The connotation of academic performance has changed from learning to the process of students' academic

progress. Academic achievements are reflected from talent specifications and learning achievements, as well as meeting personal needs and having good learning attitudes and habits in the learning process. The development of students needs their efforts and meaningful educational activities. For example, active classroom interaction [4], teacher-student communication [5], and social activities [6] can make their time and energy concentrated on their academic change. Also, scholars gradually realize that teachers' teaching ability plays a key role in students' advancement. Therefore, "teachers' influence" is put forward. Shahraki et al. believed that adults participated in remote education training for the following reasons: intellectual curiosity, achievement of personal goals, achievement of social goals, participation in

social activities, avoidance of other activities or stimuli, compliance with external requirements, adaptation friends, relatives, social pressure, etc. [7]. Wang et al. compiled the “Questionnaire on the Motivation of Teachers to Participate in Training” and used the IoT technology to conduct a survey on 400 primary and secondary school teachers in smart cities. The findings indicated that the primary motivation for teachers to participate in training was a professional improvement, followed by cognitive interest, avoidance of stimuli, and social relations. Teachers of different genders, school stages, teaching ages, and regions have certain differences in motivation to participate in training [8]. Liu et al. (2021) proposed that in the process of cultivating preservice primary school teachers in smart cities, the IoT technology could be used to collect corresponding data and then analyze it, and finally clarified different goals at different stages according to the data results. The first year focuses on the change of ideas, the second year is based on the improvement of professional knowledge, the third year turns to the cultivation of teaching skills or teaching characteristics, and the fourth year is implemented on teaching practice and teaching reflection [9]. First, the existing research mainly starts from the reasons for teachers to participate in distance training and the establishment of goals for different training stages, while this work is based on the construction of smart cities and the IoT technology. Second, the focus of the research is different. This work mainly uses the interview method and the questionnaire survey to discuss, while the existing research uses the literature data method and the comparative analysis method.

Since teachers play a key role in the development of students, colleges and universities should take the responsibility to provide the environment to promote teachers’ preservice training and development [10]. An important criterion to evaluate the teacher’s quality is the extent to which students can effectively participate in the classroom activities. Besides, schools should pay attention to the impact of students’ family background, teachers, and their peers on their academic growth [11]. Some studies show that students with different backgrounds have different performances in adapting themselves to the school environment [12, 13].

To sum up, the need for preservice training is analyzed, the influence of teachers of different schools and grades on students’ progress under the smart city is discussed through a questionnaire survey, and corresponding countermeasures are put forward. The innovation lies in revealing the adaptation law of primary school teachers through a questionnaire survey and interviews with 154 teachers in 16 primary schools. It provides a practical reference for the research on the development and training strategies of the primary education curriculum system under the smart city.

2. Recent Related Work

2.1. Research on Preservice Training. Fukkink et al. [10] studied the mixed education method of primary school teachers through preservice training. The interaction skills among a group of Dutch teachers are monitored through

three years of repeated measurement and structured interviews. The results of the linear mixed effect model show that the acquisition of interaction skills during preservice training is impressive. However, the growth rate of their teaching skills is small, so more efforts should be made in the preservice training of teachers. Legrain et al. [14] discussed the teaching modes of preservice training of physical education (PE) teachers and found out whether the PE teachers can innovate new sports activities after short-term preservice training. The pretest/posttest is designed to test the teacher’s sports skills, practical knowledge, and self-efficacy. The results show that the participants have better performance in professional knowledge, practical activities, teaching techniques, and self-efficacy, but there are still significant differences in professional knowledge and sports skills. The scholar Francois [11] studied the relationship between teachers’ preservice training and self-efficacy. The results show that teachers’ preservice training is related to their self-efficacy and abilities, but it has nothing to do with confidence.

Some scholars conducted case studies on preservice training. Reisoğlu and Çebi [15] argued the digital ability of preservice teachers via DigComp and DigCompEdu technologies, and they conducted the training about communication and collaboration, digital content creation and security, and role modeling. The research results show that it is necessary to effectively implement digital ability training so that new teachers can pick up the knowledge and skills to solve digital issues. Moreover, trainers should reasonably organize the training courses to provide new teachers with comprehensive knowledge and diversified activities. Chaulagain et al. [12] studied the implementation of the preservice training plan for nursing staff through mental health intervention. After the existing curriculum is implemented, mhGAP-IG is introduced to explore the preservice training of medical students. The results show that mhGAP-IG improves the management level and mental states of medical students. Gisewhite et al. [16] discussed the communication skills in the preservice training project of teacher education. After the relevant literature is reviewed, teachers’ communication training and common communication obstacles between teachers and parents are analyzed. The research provides a practical reference to how to remove communication obstacles in teachers’ training. O’Brien et al. [17] discussed teachers’ training and proposed to provide a comprehensive education in the school environment. The results show that teachers’ preservice training needs to be further discussed. Strasser et al. [18] revealed the role of language stimulation in preservice teachers’ training by conducting an experiment on 59 children and some students, and the results show that students and teachers who do not participate in preservice training need more opportunities to develop their teaching abilities.

2.2. Research Progress on Training Strategies and Guarantee Mechanism of Primary Education. For training strategies, relevant scholars conducted comparative research

between a control group and an experimental group. Ruiz et al. [19] discussed how a learning strategy affects students' reading ability by analyzing the data of the experimental and the control groups. The results show that the reading awareness of the students is enhanced after training. Although both groups have made progress, the reading comprehension of the experimental group is significantly improved. Cordero and Pedraja [20] explored the impact of financial education and training on Spanish students' financial literacy. The research results show that the financial education plan has an impact only when it is taught as part of other subjects. Li et al. [21] analyzed the problems, needs, and strategies of the development of rural teachers and found that the size of rural teachers is small, the outflow of rural teachers is severe, "teaching and training" are positively connected, and the teaching abilities of rural teachers are poor. So they built a county-level teacher education system and used information technology to study the rationality of rural teacher development in poverty-stricken areas. Pozo Rico et al. [22] experimented on the training of primary school teachers during Corona Virus Disease 2019 (COVID-19) and proposed an empirical learning method to improve the ability of teachers. The results show that it is possible to cultivate teachers' well-being (through stress management and prevention of burnout). Aminov and Mirkhayitova [23] discussed school interactive education and analyzed the education system according to the "education" law, which has great significance to the methodological assistance of young teachers and the improvement of teachers' creativity. Tingzhou et al. [24] expounded on the education service policy under COVID-19, which provides a reference for cultivating comprehensive talents and talent construction. In short, the education reform in the new era has great significance for improving the quality of teachers' education and formulating effective training strategies.

For the guarantee mechanism of educational strategy, Machimbarrena and Garaigordobil [25] studied the phenomenon of teenagers' online bullying in the final stage of primary school education and discussed whether the guarantee mechanism can be implemented through punishment. The results reveal that 20.3% of students are pure victims, 6% are pure bullies, 23.9% are bullies, and 28.9% are bystanders. Rahmania et al. [26] analyzed the internal guarantee system and discussed how to improve the teaching quality in junior middle schools. The results show that the education and training system based on quality planning and implementation plan can promote the implementation of school education. Scholar Li [27] discussed the strategies of establishing a tie between school and family. The results show that home-school cooperation has an important impact on the development of preschool education. Feng et al. [28] discussed the interaction between ideological and political education and campus culture construction and revealed that campus culture can promote the comprehensive development of students.

3. Preservice Training and Guarantee Mechanism for Primary School Teachers under the Development of Smart Cities Based on the Internet of Things

3.1. IoT Technology and Smart City. With the continuous progress of science and technology, IoT technology has spread to all walks of life. IoT originated in the media field and is the third revolution in the information technology industry. IoT refers to the connection of any object with the network through information sensing equipment according to the agreed protocol, and the object exchanges and communicates information through the information transmission medium to realize intelligent identification, positioning, tracking, supervision, and other functions. There are several key technologies in the application of IoT: (1) sensor technology; (2) radio frequency identification (RFID); (3) embedded system technology; (4) intelligent technology; (5) nanotechnology, and so on. There are many application fields of IoT technology, and the specific results are displayed in Figure 1.

The architecture of IoT is mainly divided into the bottom layer, the middle layer, and the application layer. The bottom layer is the perception layer that realizes the perception function, the middle layer is used for data transmission, and the upper layer is the application layer, including middleware supported by applications such as resource management and various applications provided to end users, as indicated in Figure 2.

The main function of the perception layer is to realize the terminal perception of the IoT. The RFID technology mentioned in the above chapter is a vital part of this layer. The network layer is mainly an intermediate link, connecting the perception layer with the application layer. The basic premise of the realization of this layer is the need for a dedicated network with higher bearing capacity. The application layer is mainly divided into two parts: the support service layer and the user service layer. The main function of the support service layer is to collect, analyze, and transform data. The user service layer mainly provides various services, such as transportation, environmental monitoring, and smart home.

The smart city stands for the use of advanced information technology and related innovative concepts to integrate various operating systems and service lines in the city, to improve the living standards of residents and the efficiency of resource utilization in society. The smart city is an indispensable and important part of the process of social evolution in China. People often need to adopt the most advanced IoT technology during the process of construction, that is, to effectively connect the Internet with all things, use the cloud computer as the core calculator, and use big data technology to combine modern scientific and technological means with traditional craftsmanship and to achieve high-end construction of the new urban. Different from the traditional construction method, the smart city itself has a high level of informatization and intelligence, which can



FIGURE 1: Application fields of IoT technology.

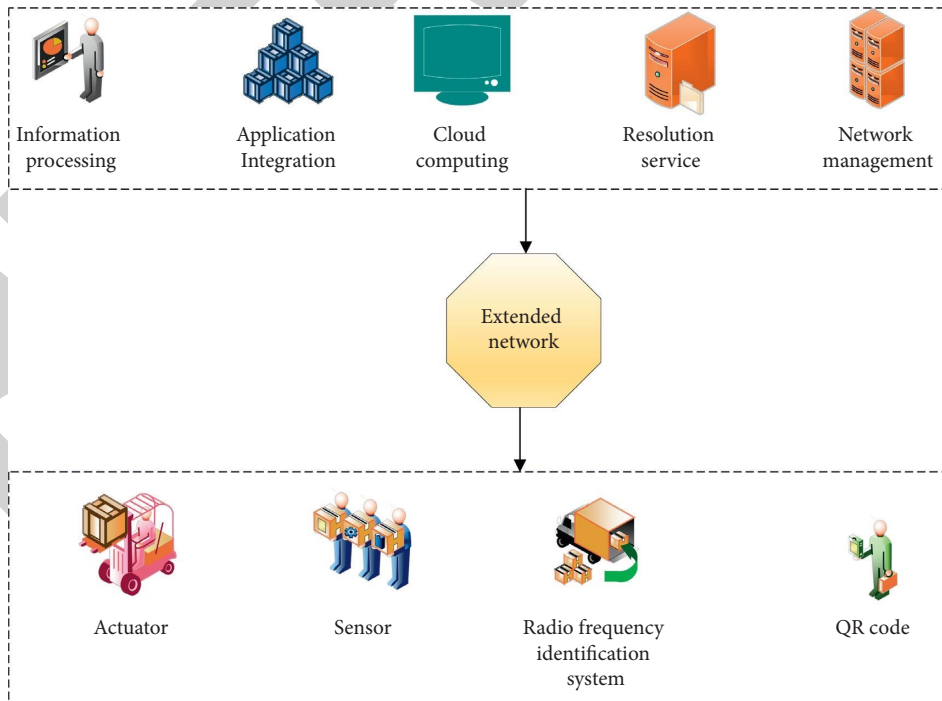


FIGURE 2: Architecture diagram of IoT technology.

meet the current development needs of daily work of Chinese citizens and play a great role in promoting the long-term development of Chinese society. However, from the current point of view, the construction results of smart cities in China are unsatisfactory, which is caused by the lack of an effective supervision model in the process of construction. With the successful introduction of relevant laws and policies, people’s attention to smart city management is also increasing, and information technology and city data are combined. The purpose is to fundamentally improve the quality of smart cities, so that the final characteristic of cities can effectively meet the needs of the current Chinese society.

3.2. Demand Analysis of Teachers’ Preservice Training. Teachers’ professional levels directly affect the growth of students [29]. At present, normal education is in the transition period from postnormal to teacher education. With the diversification of society, the training of teachers is becoming inevitable. Under the implementation of the new curriculum reform, teachers’ education reform becomes the key to realizing the teaching objectives. Primary school teachers are essential in the development of primary education. After the preservice training, the comprehensive quality of primary school teachers is improved, and the training objectives of teachers are realized, ensuring the high-quality implementation of training strategies. Teachers’ preservice skill training is shown in Figure 3.

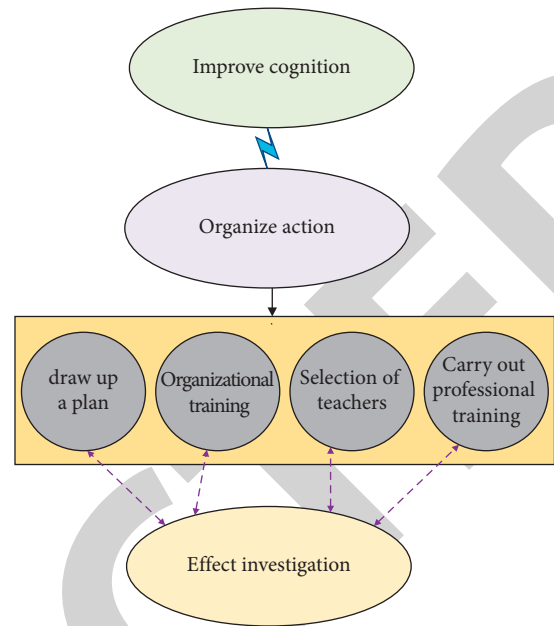


FIGURE 3: Framework of teachers’ preservice skill training.

3.3. Research Framework and Hypothesis. The focus is on the impact of the current preservice training of primary school teachers on students’ learning effects, training strategies, and guarantee mechanisms. Based on the research results, a four-dimensional academic development evaluation system is constructed from teaching strategies [30], teaching methods [31], practical guidance [32], and after-school interaction between teachers and students [33] according to the characteristics of the education. The research hypothesis is that teachers’ teaching strategies, teaching methods, practical guidance, and after-school teacher-student interaction have a crucial impact on the academic development of students. The framework for teachers’ professional progress and students’ achievements is displayed in Figure 4.

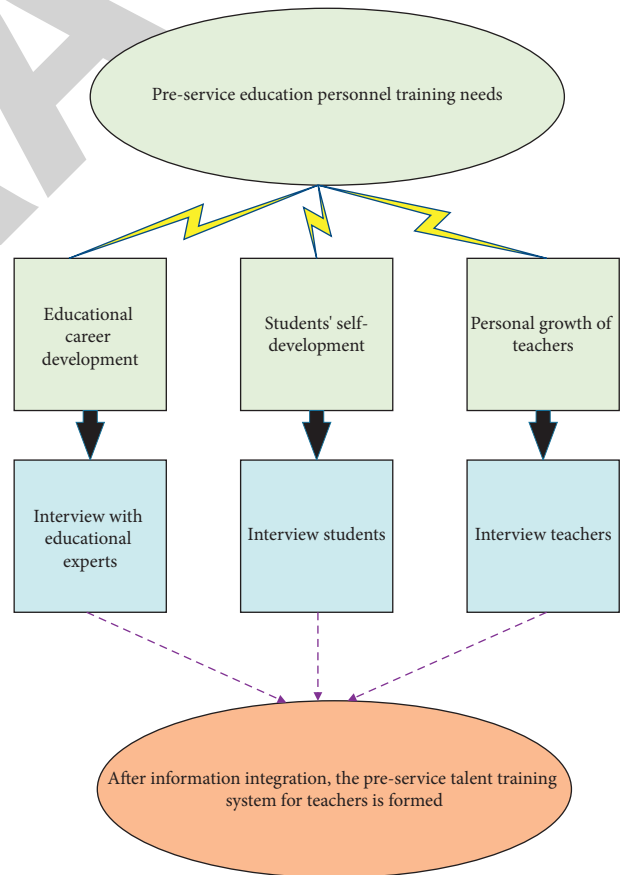


FIGURE 4: Research framework of teachers’ professional progress and students’ achievements.

3.4. Students’ Achievements and Teachers’ Training Strategies. According to the scores of various factors of academic development, the students are divided into high-level promotion group (high group, 4–5 points), medium-level promotion group (middle group, 3 points), and low-level promotion group (low group, 1–2 points). Table 1 shows that more than 85% of students mentioned that they have made progress in their academic performance, and only about 15% of students make few achievements, indicating that the improvement of teachers’ level can promote students’ academic development.

3.5. Differences in Students’ Performance Development in Different Schools and Grades. There are obvious differences in the improvement levels of students’ academic

development in different types of primary schools. Table 1 shows that teachers’ levels and students’ academic performance are positively correlated. The students in state-owned

TABLE 1: Improvement levels of students' academic development in different grades and subjects.

Academic development		Teaching ability (%)			Improvement of students' academic performance (%)		
		Low	Medium	High	Low	Medium	High
School types	State-owned schools	8.02	27.64	64.35	7.25	26.07	66.68
	International schools	7.8	35.22	56.97	6.6	29.07	64.33
	Private schools	11.25	37	51.75	11.8	33.8	54.4
Subjects	Chinese	4.94	4.94	69.44	2.72	26.17	71.11
	Math	9.25	9.25	62.04	7.47	27.12	65.41
	English	9.1	29.1	61.79	13.08	35.65	41.12

primary schools which implement the class division mode have made the greatest achievements, followed by the international primary schools adopting the interclass teaching method, and the private primary school students make the fewest academic achievements. The middle school students in private primary schools have the highest scores, the class division mode is adopted moderately there, and the scores of the students in public primary schools rank second. The size of students with the lowest scores is small in public primary schools and large in private primary schools.

Teachers of different subjects also have obvious differences in the improvement levels of students' academic development. The overall academic development of students in mathematics is the best, and the improvement rate is the highest, followed by the subject of English. The improvement of students' performance in Chinese is not obvious. Among the students with medium grades, students' mathematics levels still have room for improvement. The process of teachers' preservice training is expressed in Figure 5.

3.6. Questionnaire Survey and Model Design

3.6.1. Purpose and Method of the Questionnaire Survey. The purpose of the questionnaire survey is to know about the current situation of classroom teaching of new teachers. The current cognition and understanding of teachers and students on teachers' education standards and training strategies are analyzed by questionnaires and data statistics. The design steps of the survey are as follows: (1) through the questionnaire survey data, the current situation of education and training strategies is analyzed based on primary school teachers' preservice training; (2) according to the survey data and relevant literature, the data are analyzed, and their regularity and commonality are found out, providing more data and materials for targeted suggestions and proving the objective inevitability of teachers' preservice training.

3.6.2. Questionnaire Design. In view of the teacher education strategy and guarantee mechanism, a questionnaire survey is carried out. It is conducted on an online platform, and the research subjects are mainly new primary school teachers. The teachers and educational administration staff of the schools are contacted to assist in distributing and collecting the questionnaires so that the effective recovery rate is ensured. 154 questionnaires are distributed, and 142 valid questionnaires are obtained, with a recovery rate of

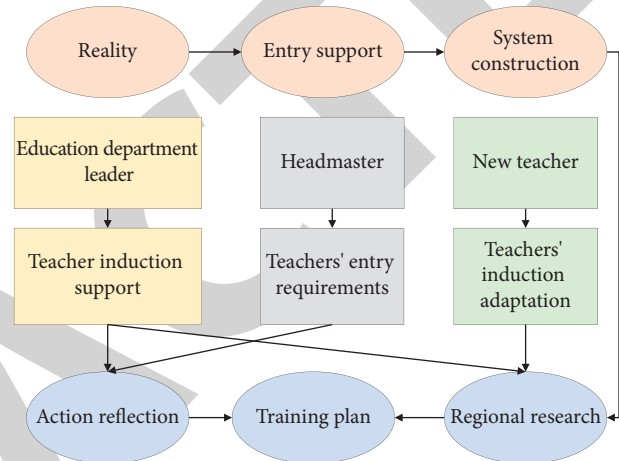


FIGURE 5: Process of teachers' preservice training.

92.2%. SPSS 19.0 is used to analyze and sort out the collected questionnaires. Data analysis and processing are exhibited in Figure 6.

3.6.3. Reliability and Validity Test of the Questionnaire.

The questionnaire survey is conducted on the 154 new primary school teachers from 16 primary schools in Ankang City, Shaanxi Province. Through regular tracking and observation, the adaptation law of new primary school teachers is revealed. Each part of the questionnaire consists of several key items, and the five-level scoring standard is used for scoring the variables. The sample data are analyzed by SPSS19 0 statistical software, and the reliability and validity of the questionnaire are tested. Cronbach $\alpha > 0.7$, and item correlation coefficient >0.3 , revised item-total correlation >0.5 , Ave >0.5 , and Pearson >0.7 , which shows that the reliability and validity of the questionnaire are good. Among them, the teacher training strategy covers three options, namely "taking into account the different learning foundations of students", "being able to follow and master the latest teaching content", and "introducing the background of relevant disciplines", and the reliability (Cronbach's α) of the dimension is 0.899. The teaching method is designed according to the characteristics of primary school students, such as "interaction through questions and exercises in class", "discussion of learning content", and "preview before class or review after class", and the reliability (Cronbach's α) of the dimension is 0.873. After-class support includes study and life,

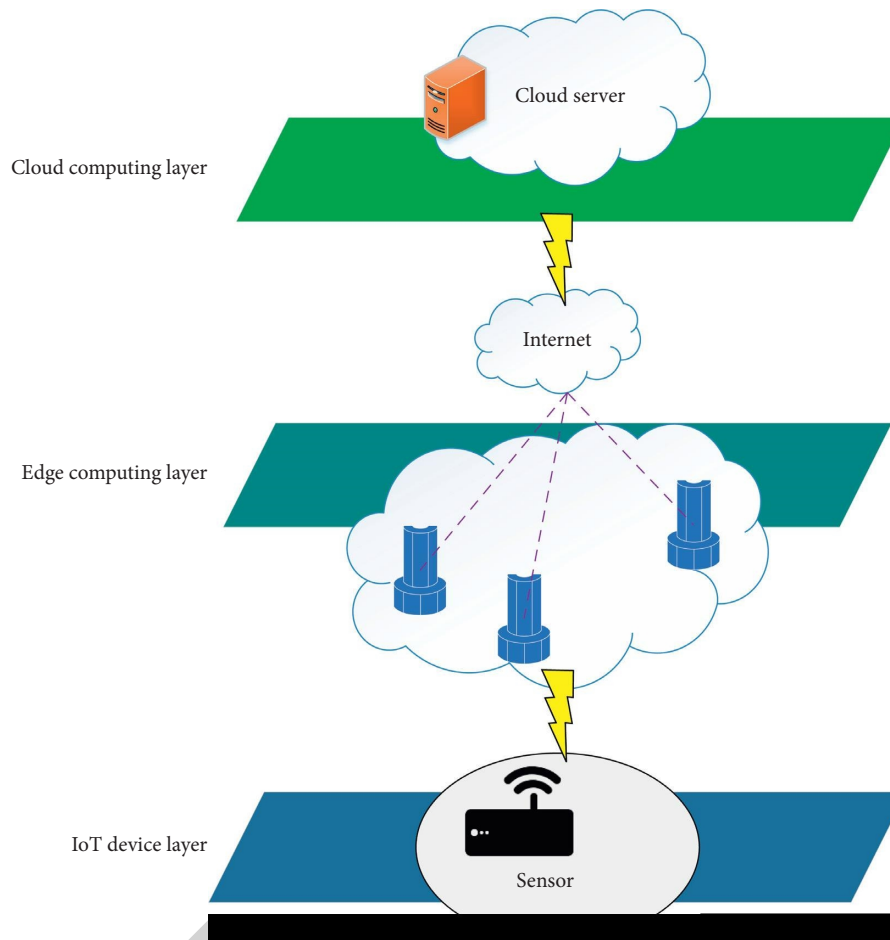


FIGURE 6: Data analysis and processing using SPSS 19.0 software.

and they are “entertainment and relaxation with students,” “communicating with students about their life and emotional problems,” “encouraging students to continue learning and progress,” and “promoting students’ thinking about what they have learned.” The reliability (Cronbach’s α) of the dimension is 0.899.

In addition, practical guidance includes “on-campus practical guidance” and “off-campus practical guidance”. The reliability (Cronbach’s α) is 0.752. In-school support includes moral and life help, supplemented by academic help, including “providing support for students’ learning”, “providing help for students’ moral and personality development”, “understanding students’ needs,” and “knowing students’ names.” The reliability (Cronbach’s α) of the dimension is 0.937. Social development factors include “learning ability,” “ability to find and solve problems,” “innovation ability,” “self-management ability,” and “personal self-confidence,” and the reliability (Cronbach’s α) of the dimension is 0.901.

4. Results and Discussion

4.1. Research Results of Teachers’ Training Strategies. The role of new teachers is investigated and evaluated in the certification procedure and certification survey results, as shown

in Figures 7 and 8. Also, the understanding of teachers in different subjects on teachers’ professional standards and different teachers’ standards is evaluated. The results are illustrated in Figures 9 and 10.

In Figure 7, 36.4% of teachers in smart cities agree with the performance evaluation method of teachers’ teaching skills certification, 32.1% of teachers are neutral, 50% of teachers believe that the evaluation system of classroom teaching quality is good, and nearly 35% of people think it is perfect, and less than 5% of teachers feel that it is not suitable for evaluating teachers’ teaching skills certification. For the evaluation of student performance, about 30% of teachers deem that the evaluation system is perfect, 45% of teachers hold that it is feasible, and less than 3% of teachers consider that the evaluation effect is poor.

Figure 8 shows that more than 70% of teachers said that the anonymous evaluation system is more appropriate for teachers’ teaching certification, which is about 5.4% higher than that of real-name certification. The support rates of online certification and on-site certification are low, only 10% and 25%, respectively. This shows that anonymous evaluation is favored by most new teachers.

Figure 9 shows that more than 70% of art teachers and PE teachers have no idea about their professional standards

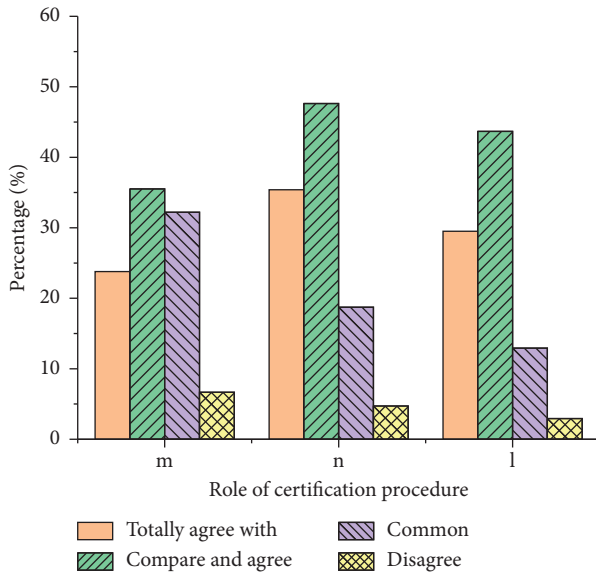


FIGURE 7: Evaluation of the roles of new teachers on the certification procedure in formulating the training strategy (m) performance evaluation; (n) classroom effect evaluation; (l) students' academic achievement evaluation.

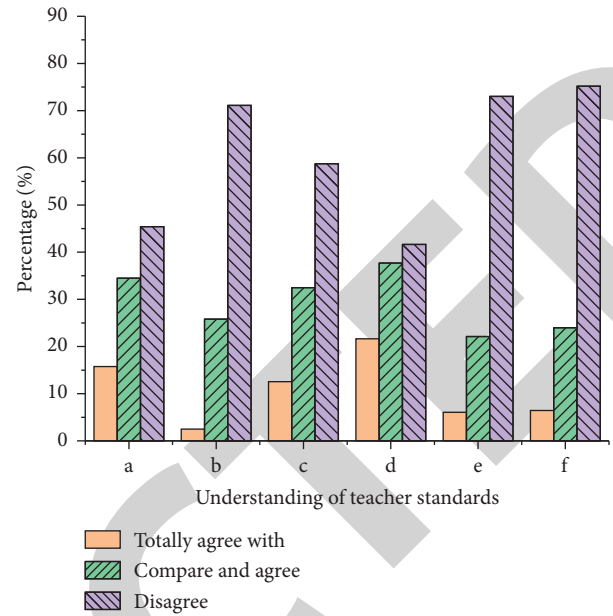


FIGURE 9: Teachers' understanding of teachers' professional standards in different subjects (a) Chinese teachers; (b) mathematics teachers; (c) English teachers; (d) music teachers; (e) art teachers; (f) PE teachers.

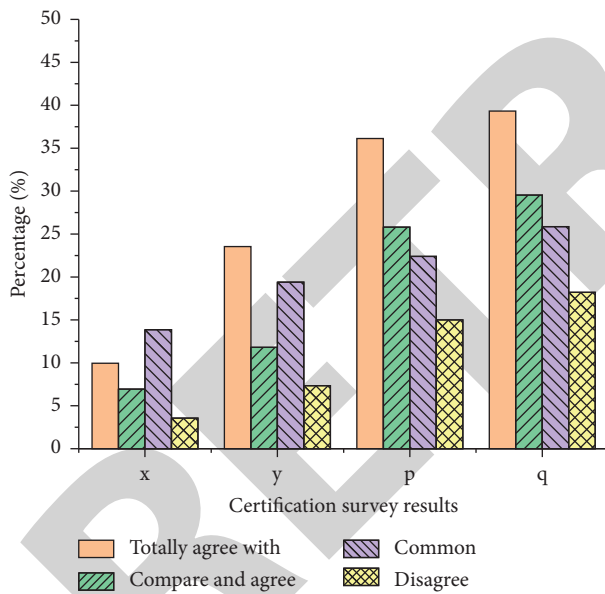


FIGURE 8: New teachers' evaluation of the certification procedures in the training (x) online certification; (y) material and on-site certification; (p) real-name certification; (q) anonymous review.

of the subjects. In contrast, nearly 40% of music teachers know little about teachers' professional standards. However, the teachers of Chinese, mathematics, and English, are not familiar with their professional standards, and 45%, 72%, and 60% of the teachers in these subjects have no idea of their professional standards. Therefore, teachers' professional standards should be strengthened in teachers' pre-service training.

Figure 10 shows that more than 50% of the teachers surveyed do not have a clear understanding of their

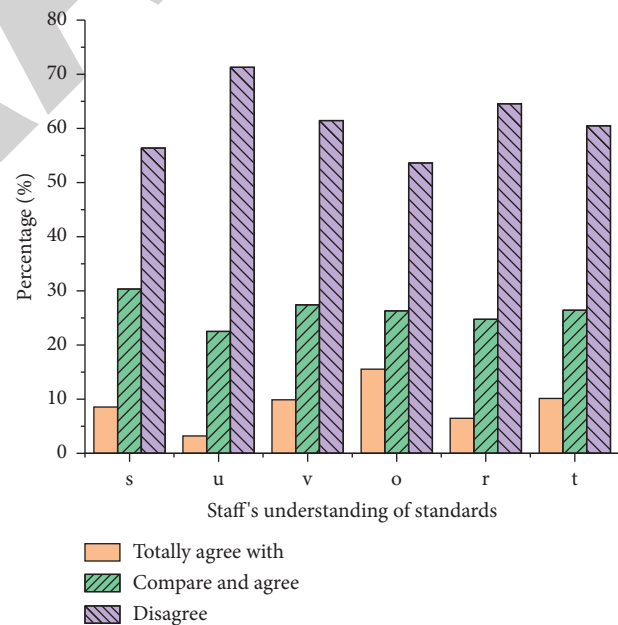


FIGURE 10: Primary school teachers' cognition of different teacher training standards (s) preschool teachers' standards; (u) technical school teachers' standards; (v) professional teachers' standards; (o) teachers' training standards; (r) primary school teachers' training strategies; (t) teaching effect guarantee mechanism.

professional standards, teachers' training standards, primary school training strategies, teaching effect guarantee mechanism, and other training standards. This shows that most teachers have low policy awareness, which needs to be focused on in the preservice training.

4.2. *Research Results of Teachers' Education Guarantee Mechanism.* The understandings of different teachers about foreign teachers' professional standards and the needs of different types of teachers are investigated to explore the effect of teachers' training on students' academic performance. The results are demonstrated in Figures 11 and 12.

Figure 11 illustrates that Chinese teachers and mathematics teachers have no awareness of the professional standards of foreign teachers in the same discipline, while English, music, and art teachers have significantly higher awareness of the professional standards of foreign teachers. More than 40% of music teachers and more than 35% of art teachers are familiar with the professional standards of foreign teachers, which shows that Chinese and mathematics teachers' awareness of professional standards needs to be enhanced through training.

Figure 12 shows that most teachers think it is necessary to refer to foreign teachers' standards. Teachers of Chinese, mathematics, and English have a great supportive attitude towards the necessity of referring to foreign teacher standards. More than 22.5% of Chinese teachers and more than 25% of English teachers believe that foreign teachers' standards should be included to optimize teachers' training strategies. 30% of mathematics teachers think the professional standards of foreign teachers should be absorbed, but still 42.5% of them are opponents. More mathematics teachers believe that there is no necessity to formulate training policies for new mathematics teachers with the reference to foreign teachers' standards.

5. Discussion

First, to improve the training level of primary school teachers, the method of questionnaire survey is adopted. Under the background of the construction of smart cities, 154 teachers are taken as the research object, and questionnaires are distributed to them. Second, the IoT technology is applied to the preservice training of primary school teachers, and its adaptation law is analyzed. Finally, according to the relevant curriculum system, it conducts in-depth research on teacher education and training strategies. In terms of how to improve the quality of teacher training, Zaw et al. (2021) believed that problems in training should be analyzed through the use of human resources, large-scale management, overall management, and quality management systems. Corresponding decisions can be found to solve the existing problems, thereby ensuring the continuous improvement of training quality [34]. Le and Pham (2021) pointed out that the college regularly organizes seminars through the use of industry associations to actively and closely integrate with the industry (most of which are relatively fixed organizations voluntarily formed by enterprises and technical colleges), allowing enterprises and colleges to exchange opinions and suggestions on the development of human resources. This can actively help the college to regularly update the teaching content, enrich the knowledge system of teachers, and closely connect the textbook content with the actual operation of the enterprise. Teachers are

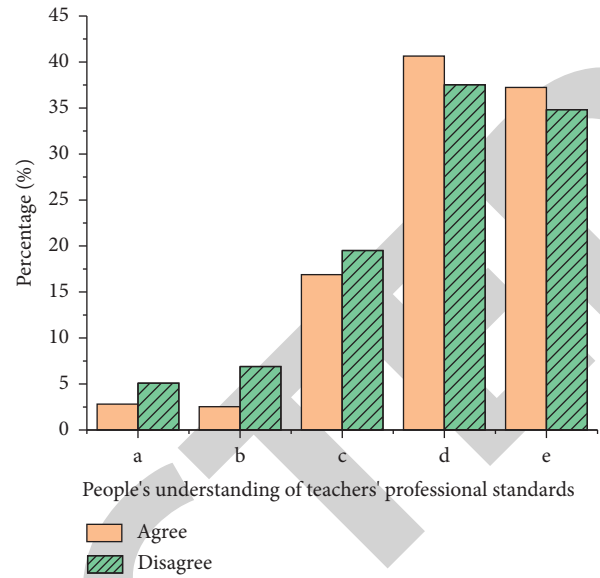


FIGURE 11: Understandings of different teachers about foreign teachers' professional standards (a) Chinese teachers; (b) mathematics teachers; (c) English teachers; (d) music teachers; (e) art teachers.

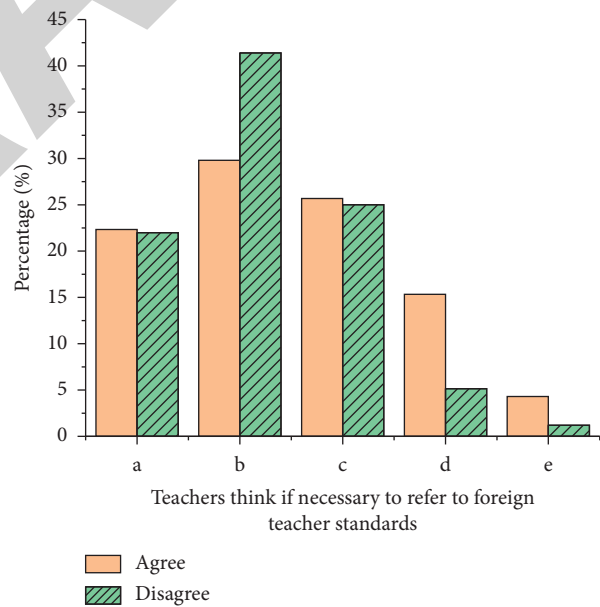


FIGURE 12: Teachers' opinions on the necessities of referring to the teachers' standards in foreign countries (a) Chinese teachers; (b) mathematics teachers; (c) English teachers; (d) music teachers; (e) art teachers.

exposed to practical operations, and their hands-on ability is further improved, so that they can better help them complete teaching [35]. The two scholars put forward their own ideas on improving teacher training, and the core idea is to cooperate with other departments or institutions. This coincides with the research goal. The difference is that this research draws conclusions by analyzing the data and provides certain data support.

6. Conclusion

It is necessary to optimize and reform the construction of teaching staff continuously, so that teachers' teaching quality and teaching abilities can be improved, arousing students' learning interest and improving their learning effects. Based on the preservice training of primary school teachers, the preservice training needs, students' achievement progress, and teachers' training strategies are investigated by a questionnaire survey, and students' achievement development in different schools and grades is discussed. The results show that the teachers' training strategies based on performance evaluation, classroom effect evaluation, and students' academic achievement evaluation system are recognized by most teachers, and more than 50% of teachers feel that the teaching and training strategy is feasible. The research has important practical significance for improving teachers' teaching quality and promoting students' academic growth. However, there are still some shortcomings. For example, the teaching quality is evaluated just from students' academic achievements, which is one-sided. Therefore, teachers' assessment and postservice education should be added to comprehensively test the training effect of teachers in the follow-up study.

Data Availability

The data used to support the findings of this study are included within the article.

Conflicts of Interest

The authors declare that they have no conflicts of interest.

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