

The Development of Teachers Skills in the 21st Century at Primary School in Guilin, China

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Abstract: The objectives of this study are to 1) study the 21st century teacher skills in primary schools in Guilin, China. 2) Provide suggestions for the development of 21st century teacher skills in primary schools in Guilin, China. This study selected a sample group of 217 full-time primary school teachers from Guilin, China, through random sampling. The main research tool used for data collection was the questionnaire. Data analysis covers various statistical measures such as percentages, frequencies, means, and standard deviations. The research results found that: 1. The 21st century teacher skill level of primary school teachers in Guilin, China is at a high level. 2. Analyze the current status of teaching skills in the 21st century based on the following six dimensions: 1) Communication skills 2) Creativity and innovation 3) Information literacy 4) Collaboration 5) Critical thinking 6) Leadership skills. This study proposes guidelines for teacher skill development in the 21st century.

Keywords: Primary School Teachers, 21st century teacher skills, Communication skills, Creativity and innovation, Information literacy, Collaboration, Critical thinking, Leadership skills.

1. Introduction

Under the impact of information technology, artificial intelligence, social media, etc., education is undergoing tremendous changes. With the continuous development of intelligent technology, technologies that can replace artificial intelligence are constantly being produced, which prompts humans to rethink and recognize their own uniqueness. Schools are important places to inherit human civilization and cultivate students' skills. In the 21st century, schools provide richer and more extensive high-quality educational resources, provide society with learning opportunities, output knowledge, create practice and exploration opportunities, and absorb and integrate different resources. Teachers are the most critical role in education reform. The quality of teachers plays a vital role in students' academic performance. Teachers can give students clear and timely feedback; help students establish harmonious interpersonal relationships; teachers have high expectations for students; teachers teach students learning skills and learning strategies and other factors that can help students achieve learning achievements (John Hattie, 2009). In today's society, with the advancement of science and technology and the abundance of resources, people's expectations and demands for teachers are becoming higher and more diverse. Society expects teachers in the 21st century to have a more professional understanding of the content and objects they teach and to create a good learning environment. Teachers are passionate and compassionate, inspiring students to assume personal and social responsibility and embrace multiculturalism; teachers can provide continuous and diverse assessment and feedback; teachers can guide students to adapt to the digital environment and use digital technologies critically; teachers can become students' role models, provide emotional support to students, and make a positive difference in students' lives. In order to meet the requirements of future teachers, teachers need to master more 21st century teacher skills.

Teacher development of 21st century skills is critical to providing students with the knowledge, abilities and mindsets they need to thrive in a changing world. It not only prepares students for the future, but also improves the overall quality of education and the ability of teachers to meet the diverse needs of students.

This study analyzes the current status, existing problems and causes of 21st century skills for primary school teachers. Based on social learning theory, connectivism and the 21st century skills framework, the teacher's skill development is further analyzed and guidelines for the development of teacher skills are proposed.

2. Literature Review

2.1 21st century teacher skills

The concept of 21st century teacher skills, also known as 21st century teaching skills or 21st century education, began to gain prominence in the early 2000s, with educators and researchers recognizing the need to adapt education to the changing needs of the 21st century. Emerging gradually as a result of rapid developments in technology, globalization and changes in the job market. 21st century teacher skills refer to a diverse set of

competencies and competencies that educators need to effectively teach and prepare students for the challenges and opportunities of the modern world. These skills go beyond traditional teaching methods and span a range of technical, pedagogical and interpersonal skills. As 21st century teachers who want to teach students the skills they will need in the future, we need to first apply 21st century skills to teachers' lives, and we need to think critically about our role as educators (Lenora Haranaka, 2018). In the study on understanding the 21st century skills that teachers should possess, teacher competencies include creativity and innovation, critical thinking, problem solving, decision-making skills, learning to learn, information literacy, information and communication technology literacy, connection, collaboration and teamwork, Local and global citizenship, life and career, personal and social responsibility. Teachers' thinking skills, relationship with knowledge, problem-solving abilities and innovative attitudes are considered necessary abilities for teachers to be able to formulate strategies and conduct meaningful learning based on students' situations and learning environments (Arife Gümüş, 2022, p243-267). Teachers in the 21st century need teaching skills, content mastery and the integration of education and technology. Teacher quality determines the quality of education and is related to the future development of a country (Hafsah, 2017).

2.2 Skills of Chinese primary school teachers

With the development of the times, China has realized the importance of teacher skills in the 21st century. In January 2018, the Central Committee of the Communist Party of China and the State Council issued the document "Opinions on Comprehensively Deepening the Reform of Teacher Team Construction in the New Era", emphasizing the need to vigorously revitalize teacher education. Continuously improve teachers' professional quality and capabilities. In accordance with the deployment of the "Education Informatization 2.0 Action Plan" and the "Teacher Education Revitalization Action Plan (2018-2022)", the Ministry of Education of China released the "Opinions on Implementing the National Primary and Secondary School Teachers' Information Technology Application Ability Improvement Project 2.0", focusing on teacher skills Cultivation and improvement (Zhou Hao & Li Aixia, 2019).

Some scholars pointed out the problems existing in the current situation of professional teachers' skills: teachers' insufficient research power and lack of innovation consciousness; the learning atmosphere created by the school is not high, resulting in teachers' lack of passion to participate in teaching research and learning; there is a lack of capable role models in the subject, and insufficient efforts to lead teaching and scientific research; Affected by professional title evaluation and performance-based pay, teachers have insufficient motivation to pursue their profession (Zhao Yonghong, 2014). Some researchers believe that the teaching methods and guidance of teachers' skills are lacking, the teaching methods of teaching theory are disconnected from the training of action abilities, the curriculum construction of teachers' direct skills lags behind, and the professional skills level of classroom teachers is not high (Meilikai·Wumaier, 2016). The content of primary school teacher skills training does not meet the requirements of the development of the times, the comprehensive ability training is not in place, and the skills training model is outdated. From the overall current status of teacher skills research by Chinese scholars, the development of teacher skills of Chinese teachers is unbalanced, and teacher skills training is not in place.

2.3 Research on teachers' skill development strategies

Teacher skills development is a key aspect of improving education and student learning outcomes. Many studies have explored various strategies and methods to improve teachers' skills. In his research, Liu Yi proposed relevant strategies to improve teachers' skills: keep pace with the times and update educational concepts; build a complete teacher skills training management system; enrich the teacher skills training content system; build a multi-level three-dimensional curriculum system; build Diversified teaching method system (He Wangbo, 2020). In his research, Li Xin proposed the approach to teacher ability. First, teachers should reflect on, research and practice their own teaching process, master teaching rules, and innovate teaching methods to promote teaching improvement. This is the fundamental way to improve teacher ability (Li Xin, 2022). Wang Yan proposed to build a scientific vocational skills training course system that integrates cultural courses and skills training courses (Wang Yan, 2019). Notably, the field of teacher skills development is constantly evolving, and research in this area continues to provide best practices for educators to meet the needs of the 21st century. Researchers and educators are exploring innovative strategies and methods to improve teacher skills and ultimately improve student outcomes in modern educational settings.

3. Methodology

3.1 The population and Sample Group

The Population

The population includes 500 full-time teachers in primary schools in Guilin, China (excluding school managers and staff).

The Sample Group

The sample group consists of 217 full-time primary school teachers (excluding managers and school administrative staff) in Guilin City.

3.2 Research Instruments

Questionnaire

The questionnaire consists of the following two parts:

Part 1 is a questionnaire about the general situation of the respondents. The survey items in this part of the questionnaire are gender, age, education level, and work experience in educational institutions to study the basic information of the respondents.

Part 2 is a questionnaire on the current situation of primary school teachers' teacher skills in the 21st century. Divided into 6 aspects: 1) Communication 2) Creativity and Innovation 3) Information Literacy 4) Collaboration 5) Critical Thinking 6) Leadership. A 5-level scale question is set to understand the respondent's current status of teacher skills in the 21st century.

3.3 Data Collection

Questionnaires were distributed to primary school sample groups and 217 pieces of data were collected within the specified time. The researcher collects a predetermined number of questionnaires, checks the accuracy and completeness of the questionnaires, and analyzes the collected data.

3.4 Data Analysis

The researcher checked the accuracy and completeness of the questionnaire instrument and selected valid questionnaires for data analysis. By analyzing the frequency, percentage, mean, and standard deviation in the data, we can further understand the current status of the six variable problems, summarize the pros and cons of the existing problems, and propose guidelines for the development of primary school teacher skills in the 21st century.

4. Results of Analysis

The researchers distributed questionnaires to 217 primary school teachers, and a total of 217 questionnaires were returned, with a recovery rate of 100%.

4.1 Analysis of basic personal information of respondents

The overall data analysis results of the interviewed teachers include gender, age, education level, and work experience. In this study, the researchers conducted data analysis by using frequency distribution and percentages, as shown in Table 4.1.

Table 4.1 Number and percentage of general information about the teachers interviewed.

(n=217)			
project	classify	frequency	Percentage (%)
Gender	male	74	34.10
	female	143	65.90
Age	20-30 years old	80	36.90
	31-40 years old	61	28.10
	41-50 years old	66	30.40
	51-60 years old	10	4.60
	Over 60 years old	0	0.00
Educational qualifications	College degree	13	6.00
	Bachelor's degree	142	65.40
	Master's degree	62	28.60
	Doctoral degree	0	0.00

working years	Less than 5 years	86	39.60
	5 -10 years	60	27.60
	11 -20 years	50	23.00
	More than 20 years	21	9.70

Table 4.1 shows the results of the analysis of the general information data of the respondents. Among them, there are 143 female teachers, accounting for 65.90%, and 74 male teachers, accounting for 34.10%; the majority of teachers are 20-30 years old, with a total of 80, accounting for 36.90%, and the number of teachers over 60 years old is 0, accounting for 0%; Most of the in-service teachers have bachelor's degree (142 persons), accounting for 65.40%, followed by master's degree (62 persons), accounting for 28.60%; the number of teachers with less than 5 years of teaching experience is relatively large, with 86 persons, accounting for 39.60%, and the number of teachers with more than 20 years of teaching experience is relatively small, with 21 persons and accounting for 9.70%.

4.2 Analysis on the Present Situation of Primary School Teachers' Skills in the 21st Century

The primary school teachers who participated in the survey were analyzed from six aspects: communication skills, creativity and innovation, information literacy, collaborative skills, critical thinking and leadership skills. The researchers used the mean and standard deviation for the analysis, and the detailed analysis results are shown in Table 4.2-4.8.

Table 4.2 Statistical table analyzing the current situation of primary school teachers' skills in the 21st century (n=217)

21st century teacher skills	current situation		
	\bar{X}	S.D.	Remark
Communication skills	3.96	0.58	high
creativity and innovation	4.10	0.49	high
Information Literacy	4.01	0.51	high
collaboration	4.00	0.52	high
critical thinking	4.03	0.51	high
leadership skills	3.99	0.53	high
Total	4.02	0.52	high

From the table 4.2 Statistical table analyzing the current situation of primary school teachers' skills in the 21st century. Overall, the average was at a high level (\bar{X} =4.02, S.D.=0.52). When considering each area, it was found that the area with the highest average was creativity and innovation, with the average being at the highest level. (\bar{X} =4.10, S.D.=0.49), followed by critical thinking with a high level mean (\bar{X} =4.03, S.D.=0.51) and Information Literacy with a high level mean (\bar{X} =4.01, S.D.=0.51), respectively, and The side with the lowest mean value is Communication skills, with a high mean level (\bar{X} =3.96, S.D.=0.58).

Table 4.3 Statistical table analyzing the current status of communication skills of primary school teachers in the 21st century (n=217)

Communication skills	current situation		
	\bar{X}	S.D.	Level
1. I can effectively convey complex ideas and concepts to students using clear and concise language.	3.95	0.72	high
2. I use a variety of communication methods to engage students with different learning styles and preferences.	3.93	0.95	high
3. I actively encourage open and respectful communication among students in my classroom.	4.24	0.79	high
4. I employ questioning techniques to promote critical thinking and meaningful discussion among my students.	3.96	0.81	high
5. I adapt my communication to effectively reach students from diverse backgrounds and with varying language abilities.	4.01	0.89	high
6. I maintain effective communication with parents or guardians to keep them informed about their child's progress and challenges.	3.97	0.91	high

7. I collaborate with colleagues to share ideas, resources, and strategies for improving teaching practices.	4.03	0.83	high
8. I use various communication channels (verbal, written, digital) to provide timely feedback on student assignments or assessments.	4.06	0.82	high
9. I will take the initiative to participate in the online classroom.	3.79	1.06	high
10. I enjoy learning online and collaborating with other students.	3.69	1.09	high
Total	3.96	0.58	high

From the table 4.3 Statistical table analyzing the current status of communication skills of primary school teachers in the 21st century. Overall, the average was at a high level (\bar{X} =3.96, S.D.=0.58). When considering each area, it was found that the area with the highest average was I actively encourage open and respectful communication among students in my classroom, with the average being at the highest level. (\bar{X} =4.24, S.D.=0.79), followed by I use various communication channels (verbal, written, digital) to provide timely feedback on student assignments or assessments. with a high level mean (\bar{X} =4.06, S.D.=0.82) and I collaborate with colleagues to share ideas, resources, and strategies for improving teaching practices. with a high level mean (\bar{X} =4.03, S.D.=0.83), respectively, and The side with the lowest mean value is I enjoy learning online and collaborating with other students, with a high mean level (\bar{X} =3.69, S.D.=1.09).

Table 4.4 Statistical table analyzing the current situation of creation and innovation of primary school teachers in the 21st century

Creativity and innovation	current situation (n=217)		
	\bar{X}	S.D.	Level
1. I incorporate diverse teaching methods to engage students and stimulate their creativity.	4.09	0.77	high
2. I encourage students to think creatively and explore innovative solutions to problems.	4.22	0.79	high
3. I actively integrate technology and other tools to enhance learning and foster creative thinking.	4.07	0.81	high
4. I provide opportunities for students to explore and experiment with new ideas and concepts. Interests.	4.04	0.82	high
5. I encourage students to challenge conventional wisdom and think beyond the obvious solutions.	4.06	0.8	high
6. I support student-led projects and initiatives that require creative thinking and innovation.	4.12	0.79	high
7. I foster an environment in which students feel comfortable taking risks and expressing their unique ideas.	4.07	0.83	high
8. I incorporate creative assessments and assignments that allow students to showcase their unique skills and perspectives.	4.05	0.79	high
9. I seek out professional development opportunities to enhance my own creativity and innovative teaching practices.	4.13	0.77	high
10. I collaborate with colleagues to brainstorm and develop innovative approaches to teaching and learning.	4.11	0.8	high
Total	4.1	0.49	high

From the table 4.4 Statistical table analyzing the current situation of creation and innovation of primary school teachers in the 21st century. Overall, the average was at a high level (\bar{X} =4.10, S.D.=0.49). When considering each area, it was found that the area with the highest average was I encourage students to think creatively and explore innovative solutions to problems, with the average being at the highest level. (\bar{X} =4.22, S.D.=0.79), followed by I seek out professional development opportunities to enhance my own creativity and innovative teaching practices with a high level mean (\bar{X} =4.13, S.D.=0.77) and I support student-led projects and initiatives that require creative thinking and innovation with a high level mean (\bar{X} =4.12, S.D.=0.79), respectively, and The side with the lowest mean value is I provide opportunities for students to explore and experiment with new ideas and concepts. Interests, with a high mean level (\bar{X} =4.04, S.D.=0.82).

4.5 Statistical table analyzing the status quo of information literacy for primary school teachers in the 21st century

Information Literacy	current situation		
	\bar{X}	S.D.	Level
1. I guide students in evaluating the credibility and relevance of online information sources.	3.92	0.84	high
2. I help students develop effective research skills and strategies for finding reliable information.	3.97	0.83	high
3. I emphasize the importance of proper citation and avoiding plagiarism in student work.	4.23	0.76	high
4. I integrate information literacy skills into my lessons to ensure students are well-prepared to navigate a digital world.	4.01	0.83	high
5. I encourage students to critically assess and compare various sources of information before concluding.	4.06	0.85	high
6. I teach students how to use databases, online libraries, and other digital resources effectively for research purposes.	3.93	0.99	high
7. I create assignments that require students to engage in in-depth research and analysis of credible sources.	3.93	0.86	high
8. I demonstrate and model effective information literacy practices during my own research and teaching activities.	4.01	0.76	high
9. I actively seek out opportunities for professional development to enhance my information literacy skills.	4.11	0.75	high
10. I collaborate with other educators to develop strategies for integrating information literacy across the curriculum.	3.98	0.82	high
total	4.01	0.51	high

From the table 4.5 Statistical table analyzing the status quo of information literacy for primary school teachers in the 21st century. Overall, the average was at a high level ($\bar{X}=4.01$, S.D.=0.51). When considering each area, it was found that the area with the highest average was I emphasize the importance of proper citation and avoiding plagiarism in student work, with the average being at the highest level. ($\bar{X}=4.23$, S.D.=0.76), followed by I actively seek out opportunities for professional development to enhance my information literacy skills with a high level mean ($\bar{X}=4.11$, S.D.=0.75) and I encourage students to critically assess and compare various sources of information before concluding with a high level mean ($\bar{X}=4.06$, S.D.=0.83), respectively, and The side with the lowest mean value is I guide students in evaluating the credibility and relevance of online information sources, with a high mean level ($\bar{X}=3.92$, S.D.=0.84).

Table 4.6 Statistical table analyzing the status quo of primary school teachers' collaboration skills in the 21st century

collaboration	current situation		
	\bar{X}	S.D.	Level
1. I encourage students to work together in groups and practice effective teamwork.	4.28	0.77	high
2. I actively collaborate with fellow teachers to develop interdisciplinary projects and initiatives.	3.97	0.93	high
3. I am skilled at identifying and leveraging the strengths of individuals within a team.	3.89	0.91	high
4. I contribute to productive team discussions during staff meetings or professional development sessions.	3.9	0.86	high
5. I actively seek opportunities to collaborate with colleagues to enhance my teaching practices.	4.04	0.78	high
6. I engage in collaborative planning to develop lesson plans that integrate various subject areas.	3.93	0.81	high
7. I collaborate with other educators to create cross-curricular activities that engage students.	4	0.88	high
8. I model collaborative behavior by actively seeking input and	4.03	0.8	high

feedback from colleagues.			
9. I am skilled at managing conflicts and finding constructive resolutions within a team setting.	3.88	0.93	high
10. I actively seek professional development opportunities to enhance my collaboration skills.	4.09	0.79	high
Total	4	0.52	high

From the table 4.6 Statistical table analyzing the status quo of primary school teachers' collaboration skills in the 21st century. Overall, the average was at a high level ($\bar{X}=4.00$, S.D.=0.52). When considering each area, it was found that the area with the highest average was I encourage students to work together in groups and practice effective teamwork, with the average being at the highest level. ($\bar{X}=4.28$, S.D.=0.77), followed by I actively seek professional development opportunities to enhance my collaboration skills. with a high level mean ($\bar{X}=4.09$, S.D.=0.79) and I actively seek opportunities to collaborate with colleagues to enhance my teaching practices. with a high level mean ($\bar{X}=4.04$, S.D.=0.78), respectively, and The side with the lowest mean value is I am skilled at managing conflicts and finding constructive resolutions within a team setting, with a high mean level ($\bar{X}=3.88$, S.D.=0.93).

Table 4.7 Statistical table analyzing the current situation of critical thinking of primary school teachers in the 21st century

critical thinking	current situation (n=217)		
	\bar{X}	S.D.	Level
1. I am proficient in identifying complex problems in my teaching context.	3.81	0.82	high
2. I can analyze problems from multiple perspectives to find effective solutions.	3.99	0.84	high
3. I encourage my students to question and critically evaluate information.	4.06	0.78	high
4. I can identify biases and assumptions in educational materials and adapt them accordingly.	3.87	0.82	high
5. I encourage my students to think creatively and generate innovative ideas.	4.16	0.77	high
6. I involve students in decision-making processes within the classroom.	3.99	0.92	high
7. I can make well-informed decisions about my teaching methods and curriculum.	3.99	0.79	high
8. I regularly reflect on my teaching practices to identify areas for improvement.	4.13	0.81	high
9. I encourage my students to reflect on their learning experiences and make connections to real-life situations.	4.15	0.78	high
10. I foster critical thinking skills in my students by encouraging them to analyze, evaluate, and synthesize information.	4.13	0.8	high
total	4.03	0.51	high

From the table 4.7 Statistical table analyzing the current situation of critical thinking of primary school teachers in the 21st century. Overall, the average was at a high level ($\bar{X}=4.03$, S.D.=0.51). When considering each area, it was found that the area with the highest average was I encourage my students to think creatively and generate innovative ideas., with the average being at the highest level. ($\bar{X}=4.16$, S.D.=0.77), followed by I encourage my students to reflect on their learning experiences and make connections to real-life situations. with a high level mean ($\bar{X}=4.15$, S.D.=0.78) and I foster critical thinking skills in my students by encouraging them to analyze, evaluate, and synthesize information. with a high level mean ($\bar{X}=4.13$, S.D.=0.80), respectively, and The side with the lowest mean value is I am proficient in identifying complex problems in my teaching context., with a high mean level ($\bar{X}=3.81$, S.D.=0.82).

Table 4.8 Statistical table analyzing the current status of primary school teachers' leadership skills in the 21st century

leadership skills	current situation (n=217)		
	\bar{X}	S.D.	Level
1. I effectively lead or participate in interdisciplinary teaching teams or projects.	3.82	0.93	high
2. I actively seek opportunities to collaborate with other teachers to enhance student learning.	4.06	0.89	high
3. I am skilled at conveying complex ideas and information to both students and colleagues.	3.83	0.89	high
4. I inspire and motivate my students to set high goals and work toward them.	4.12	0.76	high
5. I actively support and encourage leadership development among my students.	4.12	0.78	high
6. I actively engage with the local community to connect classroom learning to real-world issues and foster leadership skills in my students.	3.87	0.85	high
7. I provide opportunities for students to develop leadership skills through class projects, clubs, or extracurricular activities.	3.97	0.83	high
8. I encourage my students to take initiative and demonstrate leadership within the classroom.	4.13	0.83	high
9. I consistently seek opportunities for professional development to enhance my leadership skills.	4.03	0.99	high
10. I remain resilient in the face of challenges, using them as opportunities to learn and grow as a leader.	4.03	0.85	high
Total	3.99	0.53	high

From the table 4.8 Statistical table analyzing the current status of primary school teachers' leadership skills in the 21st century. Overall, the average was at a high level (\bar{X} =3.99, S.D.=0.53). When considering each area, it was found that the area with the highest average was I encourage my students to take initiative and demonstrate leadership within the classroom, with the average being at the highest level. (\bar{X} =4.13, S.D.=0.83), followed by I inspire and motivate my students to set high goals and work toward them. with a high level mean (\bar{X} =4.12, S.D.=0.76) and I actively support and encourage leadership development among my students. with a high level mean (\bar{X} =4.12, S.D.=0.78), respectively, and The side with the lowest mean value is I effectively lead or participate in interdisciplinary teaching teams or projects., with a high mean level (\bar{X} =3.82, S.D.=0.93).

4.3 Results of Data Analysis

Through the analysis of questionnaire data, the researchers found that the current 21st century teaching skills of primary school teachers in Guilin are generally at a high level. However, a closer look at the data on 21st Century Skills for primary school teachers found that communication skills had the lowest average scores, suggesting teachers are relatively less proficient in this area. To provide a concise summary of the data analysis results regarding the current status of each skill, the following details are provided:

Communication skills: At present, primary school teachers mainly rely on face-to-face communication and rarely use new media to communicate or teach.

Creativity and innovation: Primary school teachers have limited opportunities to cultivate students' innovative awareness. Current assessment and assignment models do not facilitate the presentation of students' unique skills and perspectives. As a result, students' creative thinking remains underdeveloped, and their novel ideas rarely find practical application in academic pursuits.

Information literacy skills: The current information literacy level of primary school teachers needs to be improved. Improve information utilization skills, master the knowledge of evaluating the credibility and relevance of online information sources, and develop the ability to guide students in the correct use of information technology.

Collaboration: Elementary teachers currently show hesitancy to trust team environments and tend to avoid conflict. They have difficulty engaging in direct and constructive ideological debate when making decisions. Furthermore, their limited participation and reluctance to actively express their opinions hindered their effective participation in group discussions.

Critical thinking: At present, primary school teachers are too obedient to authority, have difficulty thinking independently, and sometimes ignore their own judgment and analysis. This hinders their ability to accurately assess, evaluate and reflect on issues and information. In addition, there is a lack of self-reflection in classroom teaching, and certain issues are often ignored. Students have few opportunities to solve practical problems.

Leadership skills: Primary teachers have limited subject awareness due to a lack of relevant professional development opportunities. Many teachers feel unprepared to take on leadership roles and their expertise and leadership potential remain underappreciated. As a result, teachers face barriers when assuming leadership responsibilities in educational contexts.

5. Conclusion

The research results found that the current situation of Guilin's primary school teachers' 21st century teacher skills is generally at a high level. Based on the research results, the six aspects involved in this study were ranked from high to low. It was found that the highest level was creativity and innovation, followed by critical thinking, and communication skills were the lowest. Based on the problems existing in each aspect, suggestions for skill development are made:

Communication skills: Teachers should enhance communication skills and give priority to the learning and practice of professional skills. It is critical for educators to recognize the diversity of their students and foster positive teacher-student relationships. In addition, teachers should improve their proficiency in new technologies, adopt diverse teaching methods and materials, and emphasize multiple communication methods in teaching activities.

Creativity and Innovation: Emphasizes that teachers should embrace lifelong learning and create a classroom environment that encourages and appreciates creativity. In addition, teachers should correctly understand innovative education, enhance communication skills, and actively look for innovation opportunities.

Information Literacy: Educators need to properly understand information education and improve information literacy skills. In addition, teachers should integrate information literacy into the curriculum and teach students research skills, critical source analysis, and effective presentation of research findings.

Collaboration: Create a positive collaborative environment and encourage educators to recognize the unique strengths and expertise of colleagues and students. Furthermore, it highlights the importance of utilizing collaborative inquiry methods in practice.

Critical Thinking: Educators should cultivate skepticism and be willing to question their own assumptions and educational materials. Teachers should improve their ability to synthesize information and effectively resolve problems and conflicts. In addition, teachers are encouraged to self-reflect and continually improve their critical thinking skills.

Leadership Skills: Teachers are encouraged to recognize their leadership potential and believe in their ability to grow as leaders. In addition, it advocates improving teachers' cooperation abilities, cultivating community awareness, and promoting teachers' professional development.

Recommendations

Based on the research results on teacher skills development in the 21st century, suggestions are put forward from three aspects: teachers, schools and educational institutions, and government departments. The details are as follows:

Teachers: Maintain a lifelong learning mentality and actively participate in continuous learning and professional development. Regularly reflect on teaching practice and student outcomes. Enhance communication skills including active listening, clarity and empathy. Develop proficiency in educational technology. Limited consideration is given to critical thinking in the classroom, and creativity and innovation in the classroom are encouraged.

Schools and educational institutions: Provide resources and training opportunities for teachers. Create a positive learning environment and promote diversity and inclusion in the school environment. Improve the evaluation mechanism and reward mechanism.

Government departments: Increase education funding and rationally allocate educational resources. Invest in teacher training programs that focus on 21st century teaching skills. Develop policies and initiatives to address educational inequalities and ensure equal access to quality education for all students. Develop policies and initiatives to address educational inequalities and ensure equal access to quality education for all students.

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