Research on the Development of Teachers' Teaching Ability under the Background of the New Era

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Abstract: This article focuses on the development of teachers' teaching abilities in the context of the new era. Public health emergencies have promoted the deep integration of "Internet plus education", brought new challenges to teachers' teaching, and triggered discussions on the improvement of teachers' teaching ability. Through literature review, this paper combs the research on teachers' teaching ability and the relevant achievements of teachers' teaching ability cultivation under the background of "Internet plus", and finds that the existing research provides a theoretical basis for the development of teachers' teaching ability, but still needs to further explore optimization strategies. The new era has put forward new requirements for teachers' teaching, including the modernization of educational concepts, comprehensive information literacy, and lean teaching levels. To enhance the teaching ability of teachers, strategies such as prioritizing the transformation of teacher roles, scientifically cultivating and comprehensively improving teacher quality, creating an environment to optimize technical support, relying on technology to build a network teaching and research system, and incentivizing and regulating the construction of a scientific evaluation mechanism should be adopted, aiming to help teachers adapt to the development needs of education in the new era and improve teaching quality.

Keywords: New era; Teacher's teaching ability; Internet plus education; Improvement of teaching ability

1. Introduction

In recent years, sudden public health emergencies have had a huge impact on the education sector, with the pandemic being the most typical. At that time, to prevent the spread of the epidemic to schools, the State Council issued a notice to delay the start of the spring semester for primary, secondary, and tertiary schools in various regions. At the same time, the Ministry of Education has proposed the measure of "suspending classes

without stopping teaching, suspending classes without stopping learning", which has brought significant development opportunities for online education. The deep integration of the Internet plus education has led to the reform of the education system. In this context, teachers, as key teaching roles, face the practical challenges of technology application. The construction of their new teaching literacy and the improvement of technology application and teaching ability have become important research topics.

2. Literature review

2.1. A review of research on teachers' teaching abilities

The teaching ability of teachers is the most core and important ability in their professional development, which directly affects the quality of their teaching and the learning outcomes of their students. Through a relevant literature search, it can be summarized that current research on the current status of teachers' teaching abilities mainly focuses on the following three aspects.

Firstly, research on the connotation of teachers' teaching ability. For example, Wang Lei et al. constructed a teaching ability system based on teacher teaching tasks and practical work needs, including a first level, second level, and third level indicator system, and established a teaching ability level grading model [1]. Wang Guangming and others believe that the core competencies of teachers include educational and teaching abilities, learning and innovation abilities, and communication and cooperation abilities. These three abilities constitute the direction, motivation, and guarantee of teachers' professional development. Based on the directness of influencing the teaching process, Wang Pei et al. proposed that teachers' educational and teaching abilities consist of two main parts: core ability groups and exogenous ability groups [2–3].

Secondly, research on the current situation and problems of teachers' teaching ability. Based on the 2019 China College Teaching and Learning Survey (CCTL) data, Zhang Jinghua analyzed the main problems in the undergraduate teaching ability of current university teachers: many teachers lack background teaching knowledge and insufficient understanding of students' knowledge base; Failure to prepare lessons seriously and insufficient concern for students' learning difficulties; Lack of emphasis on setting teaching objectives, receiving feedback from students, and assigning and providing feedback on course assignments [4]. Han Jizhen et al. conducted a questionnaire survey on 35 newly hired teachers and 100 students, describing the current situation of their teaching abilities from four aspects: teaching design ability, teaching implementation ability, teaching evaluation and reflection ability, and teaching research ability. They analyzed the reasons for the lack of teaching abilities among newly hired teachers [5].

Thirdly, research on the influencing factors of teachers' teaching ability. This can be roughly divided into two directions: (1) focusing on the influencing factors of teachers' teaching ability itself. Li Chao divided the teaching abilities of university teachers into basic teaching abilities and developmental teaching abilities, and believed that teachers themselves and school teaching conditions were important factors affecting the teaching abilities of university teachers [6]. Wei Xueyan et al. investigated the influencing factors and improvement measures of the teaching ability of young teachers in research-oriented universities and found that factors such as teaching research, teaching preparation, and teaching aspirations all have an impact on teaching ability [7]. (2) Focusing on the research of factors influencing a certain teaching ability. Li Wen et al. conducted a survey and research on the information technology teaching abilities of backbone teachers in primary and secondary schools in a region with weak information technology construction. The results showed that self-efficacy,

skill foundation, school system, training and training, and application atmosphere all had an impact on their abilities [8]. Jia Jiyou et al. found through research that age, teaching experience, and whether they undertake the development and management of school electronic teaching resources are the three main factors affecting the information literacy of surveyed teachers [9].

Fourthly, research on the development and cultivation of teachers' teaching abilities. Based on empirical research, Tang Yewei and others have proposed development strategies for precise training of information technology teaching abilities for primary and secondary school teachers based on the concept of human centered services [10]. Chen Baohua believes that the development of teaching abilities for teachers in private undergraduate universities in the context of industry education integration should focus on cultivating teachers' practical abilities, applied research abilities, and practical teaching skills [11]. Zhao Huichen et al. proposed research suggestions for improving the teaching ability of maker teachers from the perspectives of demand analysis, structural models, improvement strategies, and evaluation methods in response to the current situation and causes of maker teacher teaching ability [12].

Overall, the teaching ability of teachers, as an extremely important component of their professional competence, has always received attention from the academic community. The previous basic theoretical research has further deepened people's understanding of the connotation and nature of teaching ability, and the subsequent exploration of influencing factors is conducive to promoting the development of teaching ability and improving the cultivation mechanism.

2.2. A summary of the cultivation of teachers' teaching ability in the context of "Internet plus"

The arrival of the "Internet plus" era has expedited a series of educational reforms, and the information-based teaching ability will also become the most important professional quality and core competitiveness of contemporary teachers. Through relevant literature search, it can be concluded that the current research on teachers' teaching ability in the context of "Internet plus" mainly focuses on the following three aspects:

Firstly, research on the integration of teachers' information technology teaching abilities. For example, Zhang Zhe et al. evaluated the information technology teaching ability of pre-service teachers in a certain university based on the TPACK theoretical model and found that the teachers' ability to integrate information technology teaching was relatively low [13]. Huang Chunguo believes that using blended learning models can effectively improve teachers' information technology teaching abilities and promote their professional development [14]. Wu et al. conducted empirical research on the information technology and curriculum integration ability of pre-service teachers in Shanghai's municipal universities, providing the relevant basis for improving the quality of pre-service teacher training and adjusting training programs [15].

Secondly, research on the current situation and problems of teachers' information technology teaching ability. Based on the research conducted by Li Tianlong and others on the current situation of information technology teaching among young teachers in universities in Xi'an, the problems in the development of information technology teaching ability among young teachers in universities have been proposed, including the lack of policy support and guarantee mechanisms at the national level, biased performance evaluation systems and incentive measures in universities, widespread problems in the construction of information technology teaching resources and environment in universities, and insufficient development beliefs and internal motivation of young teachers [16].

Thirdly, research on the influencing factors of teachers' information technology teaching ability. Zhao Chengling et al. constructed a model of personal influencing factors of vocational college teachers in information-based teaching, with vocational college teachers as the research object [17]. After investigation, Zhu Yan proposed that the main influencing factors on the development of information technology teaching ability of primary and secondary school teachers include government factors, school factors, teacher factors, and student factors [18]. Yang Ning et al. concluded through interviews with 149 exemplary interns from a normal university that five influencing factors, including teacher role models, disciplinary cultural constraints, adaptation to school culture, participation in teaching practice, and transfer of course learning, collectively contribute to the development of students' information technology teaching abilities [19].

Fourthly, research on teacher information technology education and training, as well as teacher professional development training. Zhang Lin et al. used three teacher education colleges in the Netherlands as a case study to investigate the model and effectiveness of integrating disciplines to cultivate teacher education students' information technology teaching abilities in the Netherlands [20]. Jiang Lin et al. proposed an analytical framework for the transfer of information technology teaching ability training for university teachers [21]. Wang Ru used the training of regional teachers' information technology teaching ability as an example to explore strategies for improving the effectiveness of teacher training and enhancing teachers' educational and teaching abilities [22].

Overall, educational reform in the context of the information age has had an impact on traditional teaching and has put forward higher requirements for teachers' teaching abilities. How to leverage existing advantages, eliminate the impact of unfavorable factors on teachers' teaching abilities, and propose improvement suggestions and optimization strategies remains a focus of attention in today's academic community.

3. New requirements for teachers teaching in the context of the new era

Under the impact of sudden public health emergencies, the normal teaching order of schools has been disrupted, and online teaching has become an important form of teaching. According to relevant research, teachers face many difficulties in conducting online teaching, such as limitations in network environment and hardware equipment and uneven online teaching abilities. Nowadays, in the context of normalized education, it is of great practical significance to consider the new requirements for teachers' teaching abilities in the new era.

3.1. Modernization of educational philosophy

In the context of the new era, teachers should possess advanced teaching concepts, eliminate old ideas, and embrace new changes. In the teaching process, modern teaching methods should be used as much as possible, information acquisition channels should be strengthened, new teaching aids should be added, and careful consideration should be given to how to combine new concepts with teaching practice to maximize technological advantages.

3.2. Comprehensive information literacy

The trend of online education has once again raised the requirements for teachers' information literacy. Teachers should have the ability to use basic equipment (such as computers), collect and process information, and identify and screen information. Strengthen teachers' information awareness, cultivate their information ethics,

enrich their information knowledge, and enhance their information abilities.

3.3. Lean teaching level

While improving teachers' information literacy, educators must not turn the cart before the horse and ignore the most basic teaching skills. In the context of the new era, teaching is no longer simply following the textbook but using technological equipment to improve the teaching level. Handle the relationship between teaching content, multimedia teaching environment, and students well, improve teaching level, and enhance teaching efficiency.

4. Strategies for enhancing teachers' teaching abilities in the new era

4.1. Putting ideas first, realizing the transformation of teachers' roles

The arrival of the new era not only breaks the original educational ecology but also challenges the traditional role of teachers. Teachers are no longer pure "knowledge transmitters", and "guides" are the path of teacher role transformation that conforms to the background of the times. Ideas influence practice, and role positioning influences role performance. Teachers should adjust their own state in a timely manner and actively accept emerging educational concepts. To make teachers fully aware of the important impact of technology on education and teaching, if they do not seize this historical opportunity, they will be eliminated by the times. At the same time, teachers should also experience the convenience that technology brings to education and teaching, fundamentally solving some teachers' fear and resistance to technology and facing challenges with a more positive attitude. Enable teachers to truly discover the application value of new educational technologies, actively master new technologies and knowledge, consciously and voluntarily apply educational technologies, and truly achieve role transformation.

4.2. Scientific cultivation and comprehensive improvement of teacher quality

Firstly, different colleges and universities should comprehensively consider and adopt group discussions based on their own teaching and teacher situations and scientifically and reasonably formulate teacher competency development plans while ensuring rationality. Secondly, attention should be paid to the individual differences of teachers, and a modular training system should be formed according to the needs of different levels. Teachers who encounter difficulties in use should receive on-demand training, emphasizing the combination of training and application to ensure the effectiveness of training, to ensure that teachers with different differences can better adapt to the new environment of technology education.

4.3. Create an environment and optimize technical conditions to support

To provide a suitable environment for teachers to enhance their abilities. On the one hand, starting from the physical environment, the architecture is conducive to creating a good environment for preschool teachers to improve work efficiency and quality. It selects and introduces more intelligent equipment systems and provides educational software resources that match them. On the other hand, creating a harmonious and harmonious communication atmosphere and emphasizing the cultivation of collaborative efforts among the teacher team. Regularly conducting teaching and research exchange activities, fully exchanging experiences and insights based on teaching practice, and promoting collaboration, sharing, dialogue, and reflection among team members can enhance the learning of relevant technologies and teaching experience through exchange. Practical and feasible improvement plans can be proposed for problems that arise, and collective wisdom can be leveraged.

4.4. Relying on technology to build a network teaching and research system

With the popularization of mobile Internet technology and intelligent terminal equipment, new research resources such as online open courses, micro courses, and live classes are emerging. During the epidemic, online learning has become the main form of curriculum teaching in schools of all levels and types. Although the current rapid situation of the epidemic has eased and normal teaching activities have gradually resumed, technology can still maximize its educational value. Frontline teachers can promptly record difficult problems and reflections in teaching through multimedia methods such as video and audio and upload them to the online space for guidance or sharing and communication. At the same time, educators should make good use of online learning space resources, organize frontline teachers to actively build and apply personal online learning spaces, and establish a diversified improvement system for online and offline integrated online teaching capabilities.

4.5. Encourage regulation and establish a scientific evaluation mechanism

Gilbert Sachs proposed that assessment can identify an individual's strengths and weaknesses to improve their behavior, among other things. Individuals can be arranged into the most suitable plan to increase their likelihood of success. Individuals can also be assigned tasks of different levels or categories [23]. Therefore, the construction of a scientific and reasonable teacher ability evaluation mechanism, especially the evaluation mechanism for information-based teaching ability, is particularly important. The education department can learn from similar qualification certification examination processes, widely solicit opinions from well-known experts, scholars, frontline teachers, etc., develop a scientific evaluation system, and establish a reasonable evaluation mechanism. In addition, the application of information technology teaching ability can be moderately associated with awards and evaluations, motivating teachers to actively learn new teaching aids and truly apply them to teaching activities.

Disclosure statement

The authors declare no conflict of interest.

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