Research on the problems and Countermeasures of teachers' Continuing Education from the perspective of educational informatization

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Abstract. Teachers' continuing education is an important link in the development and training of teachers' professional talents in China. Under the background of the COVID-19 epidemic, the wave of educational informatization has provided more opportunities and challenges for teachers' continuing education. This study compares the current situation of teachers' continuing education in China and proposes targeted countermeasures for problems in three areas: training design, training content and form, and training management and evaluation.

Keywords: Education informatization; Continuing education; Teacher training.

1. Introduction

In the new era, education informatization has brought a broader development path for teachers' continuing education and training. With the continuous development of emerging technologies such as artificial intelligence, blockchain and "Internet+", more and more information technology is used in teaching, which provides more opportunities and challenges for teachers' continuing education and training. In the era of education informatization 2.0 [1], teachers' continuing education and training have become more focused on the "innovative integration" of information technology and education, and on the ways and means to effectively improve teachers' teaching and learning with the support of information technology.

During the period of COVID-19, the country adopted the long-term and large-scale online teaching method of " stopping classes without stopping teaching", which reflected the important value of education informatization, but also made teachers' continuing education faces new problems. The action plan for education informatization 2.0 emphasizes on vigorously improving teachers' information literacy and promoting teachers' self adaptation to technological changes [2]. Therefore, how to further improve the continuing education level of teachers under the background of educational informatization has become a hot issue that needs to be studied.

2. Current situation of teachers' continuing education development under the background of educational informatization

Training is an important way for teachers to improve their professional level and enhance their teaching skills. In this study, the concept of teachers' continuing education specifically refers to in-service school teacher training, that is, training for post-service continuing teacher education [3]. Teachers' continuing education is an educational investment activity that improves teachers' teaching and research, professional satisfaction and academic career development through the systematic design, organization, and implementation of training programs. Teacher continuing training is is an important way to promote teachers' professional development and literacy, and is the embodiment of lifelong learning for teachers. Obtaining higher professional skills, professional identity and professional development through post-service training is an important purpose of teacher continuing training [4].

At present, China has formed a five-tier training system of "national training, provincial training, municipal training, county training and school-based training", which basically covers all forms of training for primary and secondary school teachers [5]. In 2010, China began to implement the National Training Program for Primary and Secondary School Teachers (the "National Training

Program"), which is the most typical national initiative in China's teacher professional development practice. It is a large-scale in-service training program for teachers in the central and western regions. "The National Training Program" has contributed to the balanced development of basic education and the fight against poverty in China, and has won the high recognition of the majority of educators, and has had a wide social impact.

On April 13, 2018, China's Ministry of Education released the Education Informatization 2.0 Action Plan. This marks the official arrival of the education informatization 2.0 era in China, represented by emerging information technologies such as big data, artificial intelligence and cloud computing. In such a policy context, diverse informatized teaching media, electronic teaching aids, digital training management programs and networked teacher training platforms can provide a new perspective for the development of teachers' continuing education. Currently, China is aiming to build a new training system that deeply integrates information technology and teacher training, build and promote shared online course resources, focus on hybrid training that combines online and offline, create a teacher online training community, implement the requirements of creating a high-quality professional and innovative teaching force in the new era, improve the level of teacher training, and enhance the quality of teacher training [6].

3. Practical problems of teachers' Continuing Education under the background of educational informatization

In the context of the COVID-19 epidemic and in combination with the requirements of the era of education informatization, teachers' continuing education is mostly conducted online. Online training is a systematic and complex process, including preparation before training, training implementation, tracking after training and other stages. Each stage should cover many participants and a large number of training work. Scientific system design, course development, evaluation process and the efforts of relevant personnel are important factors to ensure the effectiveness of online training [7]. Combined with the national conditions of China, the current teachers' continuing education is mainly faced with the difficulties of training design, training content and form, and training evaluation.

First of all, in terms of training design, some studies have pointed out that the top-level design of teachers' continuing education training projects needs to be optimized [8]. In the five level training process of " The National Training Program ", "Provincial training", "City training", "county training" and "school-based training" stipulated by the state, the curriculum design of each level is independent, and the problem of repeated key contents often occurs. How to connect and develop needs to be explored in depth. Due to the extensive interaction of information, whether at home or abroad, continuous education reform has become the norm, which makes teachers face the need of updating teaching concepts and behaviors. Some major public emergencies, such as the large-scale online learning caused by the covid-19 pandemic, have forced teachers to learn and adapt to online teaching in a short time. However, in the course training of continuing education, we often pay attention to the reform of education content and neglect the corresponding adjustment of the change of training form. Taking school-based and county-based training as an example, a large number of rural teachers are actually unprepared and forced to contact information-based teaching. They are unfamiliar with the whole training and are difficult to integrate quickly. However, the actual situation of rural teachers was not taken into account in the training design, and the lack of training on information-based education technology made rural teachers spend a lot of time on equipment debugging, which greatly reduced the effect of continuing education.

Secondly, the content and form of training still need to be further improved. On the one hand, in terms of training content, there are some problems in " The National Training Program ", such as non specialization of project content design and weak theoretical foundation [9]. On the other hand, the change of training mode forces the change of training form. At present, online training is mainly in the form of "point-to-point" classroom teaching. In the training process, students often passively accept knowledge and lack initiative. Teachers are often constrained by the online teaching form and

focus on theoretical learning [10]. The probability of actual operation courses is low. In fact, education informatization 2.0 has changed the traditional physical learning environment, and the material boundary between school, classroom, family and society in the traditional learning environment has been broken. Teachers are no longer satisfied with learning knowledge in the classroom. They are eager to construct knowledge through digital learning space. However, the current teacher continuing education training database has not been fully formed, which makes the needs of teachers in the process of continuing education greater than the support they can provide. Not only that, in the output of the final training results, there are often problems that the output results are despised and the results are less developed and utilized. The results often become a formal result proof, but they can not be really applied in teaching, and can not be shared and further developed.

In addition, there are many problems in training evaluation. As an important means to measure the training effect, evaluation has the functions of diagnosis, encouragement, regulation and feedback [11]. In order to minimize the problems such as different standards and value conflicts in the evaluation process, it is necessary to determine the corresponding guiding standards and value guidelines before engaging in teacher education evaluation activities. However, at present, due to the lack of effective system guarantee mechanism, there are some problems in the process of training evaluation, such as outdated evaluation content, single evaluation method, improper application of evaluation mode and lack of feedback. These problems directly affect the professional development of teachers.

4. The Countermeasures of teachers' Continuing Education under the background of educational informatization

In response to the various problems facing teacher training in the current process of education informatization in China, this study proposes countermeasures as follows.

First of all, a more targeted training design should be developed based on the needs of the training targets, with the government taking the lead in exploring a collaborative linkage training model with integrated design for counties, institutions, and teachers. Before setting the overall plan for training, in-depth research should be conducted to clarify the goals, content, form, time, institutions, and the development of assessment criteria for training effectiveness of in-service teacher training. In the formulation process, special attention should be paid to the educational needs of teachers. For some teachers, the improvement of the new version of the curriculum standards at the compulsory education stage, the promulgation of the core quality of Chinese students' development, and the development of education evaluation reform have a profound impact on the education industry. These hot topics are urgently needed to understand. For some teachers, the primary dilemma is how to quickly realize resource docking, understand the information support that can be obtained, and know what learning resources can be obtained. In this regard, the use of pre questionnaire surveys and fixed-point interviews can make it easier for education departments and schools below the provincial level to grasp the key points of teacher training at various stages, promote the training to be more effective, and truly improve the efficiency of teacher training.

Second, the content of education should be enriched and the form of education should be expanded. The background of education informatization provides a broader platform for training. Training should take teachers who receive continuing education as the main body, closely integrate with teachers' teaching reality, and encourage teachers to conduct results-oriented curriculum exploration with independent combing. Education informatization not only promotes the change of education and training media, but also should promote the training of teachers' continuing education to become an ecosystem of self-renewal and self-development potential [12]. In this process, continuing education should use different new forms of learning, such as micro class, Mu class, flipped class, mixed learning, etc., to carry the function of collecting and sorting learning resources and the function of data recording in the learning process. In the process of teachers' participation in training, it should provide the formulation for their learning activities, so as to promote the training quality of teachers'

continuing education. Based on the high freedom of information training in time and space and the massive resources in learning content, on the one hand, teachers can choose more flexible learning time and place; on the other hand, teachers can be liberated from the original fixed learning content and flexibly arrange the learning content according to their actual teaching needs, so that teachers have sufficient space for learning and exploration.

Third, the concept of developmental evaluation should be established. Results are important, and the process evaluation of training is equally important. For the evaluation of Chinese teachers' continuing education, the quality evaluation of evidence-based training needs to be optimized, and the quality evaluation system of continuing education training needs to be established and improved. In China, it is necessary to establish an evidence-based evaluation standard system of teacher education quality and improve the necessary standardization and scientificity.The implementation of training credit management and the establishment of a credit bank are good ways of process evaluation. In the form of credit system, teachers break down the training tasks and complete the goals in a targeted manner according to the evaluation requirements, which can help teachers to better enhance their professional development. In the training, teachers' subjective evaluation should be emphasized to give them a sense of access; training evaluation steps should be improved, evaluation responsibility mechanisms should be implemented, and evaluation information management should be strengthened. Let the evaluation serve as the basic data support for the next training development in order to promote the continuous development of teachers' continuing education and training for the better.

5. Conclusion

For the field of education, it has obviously become an urgent task to build a teacher team with comprehensive quality under the current policy support. This study concludes that the main problems of teachers' continuing education under the perspective of education informatization include: independent training design at all levels and poor articulation; weak theoretical foundation of training content and single training form; and unsound education evaluation system. In response to the above problems, this paper proposes three practical and relevant countermeasures for solving them: to explore a synergistic linkage training model with integrated design of counties, institutions and teachers under the leadership of the government according to the needs of the training targets; to enrich the educational contents and expand the educational forms; to improve the evaluation system and focus on developmental evaluation, etc.

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