

Research on the Cross-regional Cooperative Development Path of Primary School Mathematics Teachers under the Educational Ecological Reform

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Abstract: With the reform and development of mathematics education, primary school mathematics teachers not only need to have solid mathematical knowledge, but also need to have teaching ability and professional quality. Under the background of educational ecological reform, the professional development of primary school mathematics teachers has become a key element to promote the improvement of teaching quality. However, the current professional development system has its limitations, especially the effective integration of practical knowledge and theoretical knowledge has been challenged. In view of this, this paper focuses on the cross-regional collaborative development path of primary school mathematics teachers under the educational ecological reform.

Keywords: Educational ecological reform; Primary school mathematics teacher; Cross-regional cooperation; Development path

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1. Significance of cross-regional collaborative development of primary school mathematics teachers under the educational ecological reform

Primary school mathematics teachers have the responsibility to impart mathematical knowledge and skills to students and help them build mathematical thinking and problem-solving abilities. Teachers need to design and organize effective teaching activities to develop students' interest and confidence in mathematics. At the same time, math teachers also need to pay attention to students' learning difficulties and provide personalized guidance and support to ensure that every student is able to progress. The cross-regional cooperative development of primary school mathematics teachers under the educational ecological reform is one of the key mechanisms to ensure the quality of education, but the current system has shown serious limitations in many aspects. These constraints not only hinder the development of primary school mathematics teachers, but also indirectly affect the effect of students' learning. As a highly specialized subject, mathematics requires teachers to master deep subject knowledge and specific teaching skills, and the current professional development activities are usually not targeted. Although cross-regional collaborative development programs for primary school mathematics teachers often rely on short seminars or workshops to provide theoretical guidance, these activities rarely ensure that teachers are able to translate their knowledge into continuous improvement in teaching practice. Teachers obtain a lot of information through such activities, but it is often difficult to apply it to specific teaching because of the lack of follow-up support and implementation guidance. The cross-regional cooperative development of primary school mathematics teachers is the basis of

realizing the goal of education reform. Mathematics teachers need to master the mathematics subject knowledge comprehensively, including mathematical concepts, principles and reasoning methods. At the same time, teachers also need to have a good pedagogical foundation and teaching skills, and be able to use different teaching methods and teaching resources to effectively organize and manage the teaching process. In addition, primary school mathematics teachers also need to have good communication skills and team work skills, and be able to communicate and cooperate effectively with students, parents and colleagues.

2. The cross-regional cooperative development path of primary school mathematics teachers under the educational ecological reform

2.1 We will build a trans-regional community of lifelong learning development

The report of the 20th National Congress of the Communist Party of China proposed to promote the digitization of education and build a learning society and a learning country with lifelong learning for all. Lifelong education is an important means for the country to promote the construction of a learning society and a learning country, and an important platform for serving the people's teachers to learn for life. It bears the important responsibility of promoting the all-round development of people. It must proceed from reality, be down-to-earth, distinguish the primary and secondary, grasp the key points, and implement it step by step. Through the signing of cooperation agreements, the establishment of regional coordinated development community, to achieve complementary characteristics, resource sharing, coordinated development. Promote and deepen long-term and stable exchanges and cooperation in mathematics teaching and research between regions, and explore the implementation path of seeking innovation in the stability of mathematics in primary and secondary schools.

2.2 Develop regional interdisciplinary teaching model

Aiming at current education and teaching activities, the new curriculum standard puts forward the requirement of "eliminating disciplinary barriers and achieving integrated development", aiming to better cultivate students' mathematical literacy and promote students' all-round development according to the content of mathematics subjects. As the basic teaching content of mathematics in primary schools, teachers also need to design interdisciplinary teaching content with the awareness and thinking of disciplinary integration. To enhance the richness and interest of mathematics teaching content, so as to fully stimulate students' learning interest and improve learning efficiency, so as to achieve the cultivation of students' core quality and the development of comprehensive mathematical ability. Under the background of the "double reduction" policy, the integrated teaching of mathematics and other subjects such as engineering, music and science in primary schools is explored to promote the cultivation of students' comprehensive literacy. Mathematics teachers are used to designing teaching according to professional subjects, which increases the difficulty of integrating knowledge of other subjects into mathematics teaching. Therefore, Chinese teachers should understand the knowledge of other subjects, and sort out the knowledge blending points between Chinese and other subjects, so as to improve their own knowledge level and comprehensive ability. Teachers' own knowledge reserves must be large enough to better implement interdisciplinary teaching. Therefore, mathematics teachers should sort out the knowledge intersections between Chinese and other subjects and improve their ability of interdisciplinary teaching. When designing interdisciplinary teaching plan, primary school mathematics teachers should not only be familiar with the knowledge crossing point between mathematics and other subjects, but also communicate with teachers of other subjects, but also fully consider students' learning conditions and carry out interdisciplinary teaching reasonably. According to the "people-oriented" teaching principle, students should always be the main body of teaching, teachers should take full account of students' learning situation, and actively construct knowledge links between disciplines to achieve effective interdisciplinary teaching.

2.3 Strengthen the construction of mathematics teachers in primary schools

In order to improve the quality of mathematics teaching in primary schools under the educational ecological reform, it is necessary to strengthen the construction of teachers. Education departments can establish and improve the recruitment and evaluation mechanism for teachers, and attract and select teachers with excellent mathematical literacy and teaching ability. It can strengthen the professional development and incentive mechanism of teachers and encourage teachers to continuously improve their teaching level and professional ability. At the same time, teacher training and guidance can be strengthened to provide teachers with continuous professional development opportunities and support. It is possible to establish a mechanism for the construction of teachers' ethics, strengthen the cultivation of teachers' professional ethics and teaching concepts, and improve teachers' sense of responsibility and quality of education. In short, strengthening the construction of primary school mathematics teachers is the key to improve the cross-regional collaborative development of mathematics teachers. Through strengthening the construction of primary school mathematics teachers, upgrading teaching skills, broadening training resources, introducing new teaching methods and technologies and

strengthening the construction of teachers, the problems of insufficient professional knowledge, weak teaching skills and insufficient training resources of primary school mathematics teachers can be gradually solved, and the quality and effect of primary school mathematics teaching can be improved. At the same time, it also needs the joint efforts and support of the education department, teachers and relevant departments to provide a good environment and conditions for the professional development of primary school mathematics teachers and further promote the improvement and development of primary school mathematics teaching. Only in this way can we meet the diversified learning needs of students, cultivate their mathematical literacy and problem-solving ability, and lay a solid mathematical foundation for the future development of primary school students.

2.4 Pay attention to the fun of teaching design, increase teachers' teaching thinking

In the current primary school mathematics teaching design, because the mathematics curriculum is relatively rigorous, teachers should make interesting design according to the age characteristics of students, in order to truly mobilize the educational atmosphere of mathematics classroom and truly reflect the teaching thinking of teachers. Therefore, teachers can have a comprehensive and systematic cognition of teaching content according to their own teaching style, and carry out education and teaching by innovating and integrating relevant contents in teaching. The teaching order of the textbook can be disrupted, because the order of the textbook arrangement may not be the most suitable for the students in the class. Therefore, teachers can use their own knowledge network construction creatively to design some teaching content to promote the progress and development of students. Teachers can quickly display teaching content through electronic courseware and reduce the time of blackboard writing; At the same time, through the network resources can get more teaching materials and materials, enrich the classroom content. The UMU Education platform can provide personalized learning support for each student. Students can use online resources and mathematical software to study and explore independently according to their own learning needs and progress. This kind of personalized learning is helpful to cultivate students' independent learning ability and innovative spirit. Multimedia technology provides a more convenient channel for teacher-student interaction. Teachers can communicate with students in real time through the interactive teaching platform, understand the learning situation of students and give timely guidance. This kind of interaction helps to close the relationship between teachers and students and improve the learning effect of students. UMU education platform has many advantages and application value in primary school mathematics classroom. It can improve students' learning interest and enthusiasm, enhance students' understanding ability, improve teachers' teaching efficiency, promote personalized learning and enhance teacher-student interaction. In order to better play the role of UMU education platform in mathematics teaching, teachers need to constantly update their own teaching ideas and methods, improve their own information literacy and technology application ability; Schools also need to provide the necessary technical support and training opportunities to enable teachers to better use the UMU education platform to improve the quality and effectiveness of teaching.

3. Closing remarks

The cross-regional cooperative development of primary school mathematics teachers under the educational ecological reform is a long-term and continuous process, which requires systematic training and education, personal self-improvement and professional communication. Cross-regional cooperative development ability can improve the professional level and development potential of primary school mathematics teachers. This study provides a useful reference and inspiration for the professional development of primary school mathematics teachers, and for improving the teaching quality of primary school mathematics teachers and students' mathematical literacy.

References:

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