Digitalization and Management Innovation III
A.J. Tallón-Ballesteros (Ed.)

doi:10.3233/FAIA250055

Exploration of Training Practice for Rural Teachers in the New Era Under the Guidance of Core Literacy

Ziqi Wang and Mei Chen[1]
School of Education, Inner Mongolia Normal University, Hohhot, Inner Mongolia, China

Abstract. The introduction of new curriculum standards for various subjects in compulsory education has accelerated the pace of new curriculum reform. How to better cultivate students' core literacy and enhance their ability to solve practical problems in real life has become the primary task that teachers need to solve. However, teachers in rural areas often tend to adopt traditional teacher led teaching methods, and have limited learning opportunities, making it difficult for them to receive guidance from new ideas and technologies from the outside world. Implementing teaching reforms guided by literacy poses certain challenges. To this end, a special training program for rural teachers has been launched in pilot schools, which comprehensively cultivates the teaching content organization ability, learning evaluation integration teaching ability, intelligent technology application ability, classroom data analysis ability, etc. of rural teachers, in order to enhance their professional literacy from multiple aspects, bring new learning methods to rural students, and promote the development of students' literacy.

Keywords. core literacy; teacher training; new standards; integration of learning and assessment

1. Introduction

The release of curriculum standards for various subjects in compulsory education in 2022 emphasizes the cultivation of students' core literacy and their ability to apply knowledge to solve practical problems in real life. The cultivation of core literacy in subjects has become the fundamental task of the new curriculum standards, while emphasizing the focus on learning. It is recommended to carry out project-based learning that integrates subjects. This also puts forward higher requirements for teachers, who need to truly play the role of guides and lead students to gradually develop core literacy.

Guo Shaoqing pointed out that digital technology reconstructs teaching relationships and processes, changes teaching evaluation methods, and effectively promotes core literacy education[1]. In the context of digital transformation in education, teachers should carry out training activities under the guidance of expert teams, focusing on improving their own intelligent technology application ability and classroom data analysis ability, attaching importance to the integration of learning and evaluation in teaching, and improving students' literacy level through the reconstruction and optimization of teaching content.

[1] Corresponding Author, Chen Mei, School of Education, Inner Mongolia Normal University, China; Email: nmchenmei@qq.com

Liu Jingcui and others pointed out that there are three major practical difficulties in school-based training: arbitrariness, passivity, and fragmentation[2]. Yao Gang and others pointed out that there are problems in teacher training at the basic education stage, such as obstacles to joint participation, vague shared vision, and weak shared resources[3]. This requires authoritative teaching experts to carry out systematic top-level design, pay attention to the internal needs of teachers, and under the guidance of theoretical experience from dynamic experts, form a research and training community to help promote the normalized development of training.

At present, China's compulsory education is in a critical stage of moving from basic balance to high-quality balance, and it is urgent to carry out targeted training for rural teachers to promote their professional development[4]. However, in rural areas, teachers lack guidance from new theories and experiences, as well as support from new technologies and tools. It is difficult to collect process data on students' learning in a timely and comprehensive manner, which is not conducive to timely evaluation and feedback on students' learning situation. At the same time, there is a lack of cultivation and evaluation of students' core literacy. Due to the constraints of work pressure and environmental conditions, the learning process of rural teachers is mostly fragmented, mainly conducted through expert lectures, and there are few opportunities for hands-on practice for rural teachers, which is not conducive to their continuous improvement.

To this end, the research team led by the author focuses on the cultivation of students' core literacy in some rural schools in western Inner Mongolia and conducts continuous special training. Through the process of lesson preparation, presentation, polishing, teaching, and reflection, a teaching model with school characteristics is gradually formed to systematically enhance rural teachers' understanding of the new curriculum standards and provide support for teaching reform in rural areas guided by core literacy.

2. Overall Design Plan for Rural Teacher Training Aimed at Cultivating Core Literacy

This training mainly adopts the methods of literature review, questionnaire survey, interview, and case study. Through extensive literature review in the early stage, the training content that is in line with the current situation and development of rural teaching is determined, providing support for the subsequent training. Through a preliminary questionnaire survey of 132 frontline teachers from 8 primary schools in a certain city in Inner Mongolia, it was found that the main types of training activities that teachers are currently participating in include classroom observation (84.38%), communication and discussion (70.31%), and lesson presentation and evaluation (67.19%), with a relatively single type of training activity. Although it also involves activities such as special lectures (40.63%), experience sharing (29.69%), remote training (26.56%), teaching reflection (25%), and visits and inspections (15.63%), it has not yet delved deeply into the actual teaching of teachers, making it difficult for them to achieve significant improvement and gains. Further investigation found that teachers believe that the main reasons for the impact of online training on their participation in interaction are that other members did not actively participate (56.8%), time and energy were insufficient (54.3%), they were not interested in the discussion content (52.9%), online communication was fragmented (46.2%), problems were often not effectively answered (42.7%), and were not related to teaching practice (40.40%).

To truly solve the existing practical problems of rural teachers and promote the participation of all members. Throughout the entire training process, information technology teaching experts provide technical guidance and teaching theory experience support, frontline teaching masters provide high-quality case introductions and practical experience guidance, rural teachers generate characteristic cases based on the school's characteristics and class student situation and drive the overall implementation of the school. Information technology teaching and research personnel coordinate the time of various activities, organize teachers to participate in training activities, and extract the school's characteristic teaching mode. Group dynamics experts pay attention to the participation of members at different stages in order to adjust the training content and focus on a timely manner and promote active participation from all parties.

As the core issue of training is to enhance the core literacy cultivation ability of rural teachers, it is divided into teaching goal design, smart classroom mode, and teaching design process as branch issues, allowing rural teachers to experience the implementation process of teaching design guided by core literacy in their learning and improve their professional literacy. The overall design plan for rural teacher training aimed at cultivating core literacy is shown in Figure 1.

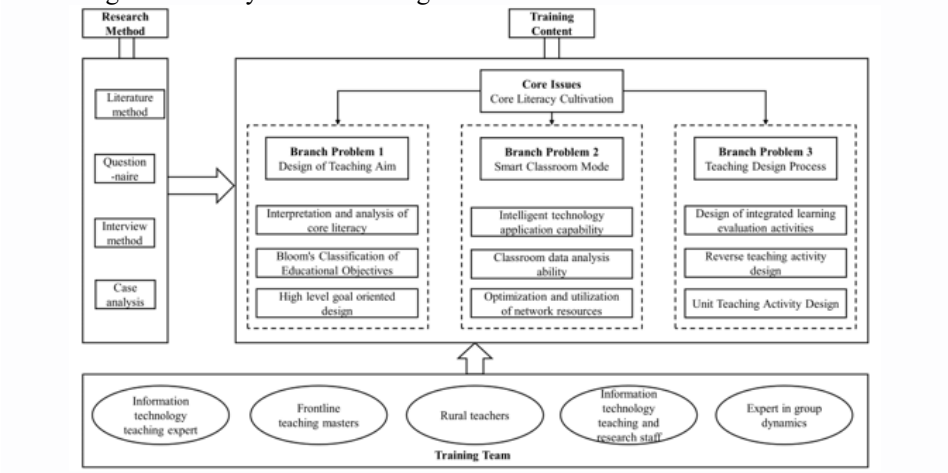

Figure 1. Overall design plan for rural teacher training aimed at cultivating core literacy

2.1. Branch Problem 1 Design of Teaching Aim

Reasonable teaching objective design is the key to whether a class can be efficiently completed. The promulgation of the new curriculum standards has clarified the core literacy of each subject. Only by truly defining the purpose of cultivating core literacy and skillfully integrating them into teaching objectives can we truly promote students' development. Taking primary school Chinese language teaching as an example, the "Compulsory Education Chinese Language Curriculum Standards (2022 Edition)" points out that the core literacy of Chinese language subject is cultural confidence, language application, thinking ability, and aesthetic creation. Therefore, in the teaching of Chinese language classes, it is important to focus on improving students' language expression ability, enabling them to independently organize the structure of articles, while also enabling them to discover and create beauty, and enhancing their sense of cultural identity. Conducting specialized training on the interpretation and analysis of core

literacy for rural teachers can help them further understand the connotation of subject core literacy and begin to try to integrate core literacy into teaching objectives, achieving the transformation of competency-oriented teaching.

After integrating core literacy into teaching objectives, it is also necessary to pay attention to the hierarchical classification of objectives. Bloom divides students' cognitive processes into six dimensions: memory, understanding, application, analysis, evaluation, and creation. In actual teaching, teachers often focus on cultivating these two low-level goals, memory and understanding, and lack the cultivation of higher-level goals. Through the guidance of the book "Bloom's taxonomy of educational goals", teachers can shift the focus of teaching to the cultivation of high-level goals, which is conducive to triggering students' higher-level thinking and continuously strengthening their own abilities. And based on the SOLO classification evaluation, we focus on addressing issues related to the hierarchical structure and abstract extension level, in order to enhance students' ability to integrate, deepen, and expand.

Guided by high-level goals and relying on core literacy, we aim to assist rural teachers in innovating their teaching goal design, making it more in line with the requirements of student development and breaking free from the limitations of exam-oriented education.

2.2. Branch Problem 2 Smart Classroom Mode

With the rapid development of artificial intelligence technology, various teaching techniques have emerged. This training is based on the Jiaokewang platform, which explains the usage norms of the Jiaokewang platform for rural teachers, realizes online resource expansion and interactive writing, and allows students to evaluate each other and learn from each other's strengths on the platform. In addition to uploading resources and evaluating students, teachers can also observe the student answer data generated by the platform, understand the students' process learning situation through question accuracy, typing time and word count, discussion participation, etc., infer the achievement of teaching goals, and indicate the direction for the next teaching step.

In addition, teachers can also observe the design of other courses on the platform, select the most suitable plan for class students for optimization, and promote the occurrence of high-quality teaching through shared wisdom.

2.3. Branch Problem 3 Teaching Design Process

To achieve objective and comprehensive evaluation of students and promote learning through evaluation, the support of the concept of integrating learning and evaluation is needed. The integration of learning and evaluation is a new evaluation concept based on the digital world of education, which integrates the learning and diagnostic aspects of comprehensive evaluation and emphasizes the promotion of students' active development in various ways[5]. Teachers are required to make good use of various data generated by technology in the learning process of students, provide positive and constructive evaluations in a timely manner, guide students to evaluate other classmates through evaluation criteria, encourage parents to participate in the interactive exhibition and evaluation of students' creative homework, and maintain students' curiosity and thirst for knowledge.

Reverse teaching design first requires teachers to determine goals and evidence of achievement, and design teaching activities based on the goals and evidence, in order to

judge the distance between students' existing experience and goals[6], fully play the diagnostic role of evaluation, and improve teaching in a timely manner. By pre-evaluating, the directional design of teaching activities for rural teachers is enhanced, facilitating the smooth achievement of goals.

The design of unit teaching activities needs to focus on six elements: the theme and class hours of the large unit, learning objectives, evaluation tasks, learning process, homework and testing, and post learning reflection, under the core element of nurturing people goal system[7]. Through the design of the overall teaching of the unit, it cultivates the high-level thinking and organizational ability of rural teachers, making teaching more systematic.

3. Training Process for Rural Teachers Focused on Cultivating Core Literacy

After determining the training content, it is also necessary to determine the specific process of the training to provide a space for communication and development for rural teachers. The training process for rural teachers aimed at cultivating core literacy mainly consists of self-directed lesson preparation, online lesson presentation, collaborative lesson grinding, and teaching reflection supported by technology, as shown in Figure 2. Rural teachers conduct lectures based on teaching cloud platforms, collect teaching data, and engage in communication and interaction with training teams through online training platforms; The expert team proposed targeted improvement plans based on the teaching effectiveness of rural teachers' lectures and the analysis of teaching data recorded in the classroom.

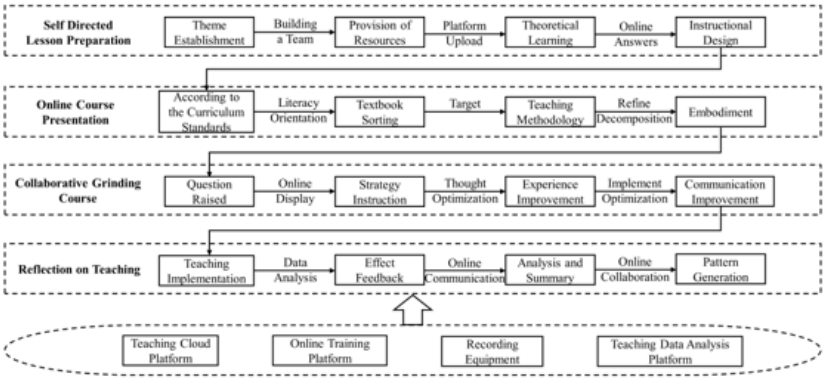

Figure 2. Training process for rural teachers focused on cultivating core literacy

3.1. Self-Directed Lesson Preparation

Firstly, the information technology teaching expert team establishes the training theme, and rural teachers select suitable teaching themes based on their own teaching situation, build a teaching cooperation circle, and facilitate communication, interaction, and resource sharing among teachers. After the information technology teaching experts upload the necessary resources for this training topic, rural teachers can carry out theoretical learning based on the resources. Any problems that arise during the learning process can be answered online by the information technology teaching expert team,

which facilitates the smooth progress of theoretical learning and collaborates to generate the initial version of the teaching design.

3.2. Online Course Presentation

After the completion of the teaching design, rural teachers will give lectures online to clarify their own design ideas. Lesson presentation requires rural teachers to start from the curriculum standards, sort out the content of textbooks based on the core competencies required for each age group, determine teaching objectives based on the actual learning situation of students in the class, set up independent exploration and cooperative discussion activities at different levels, and refine and decompose them into specific implementation plans. Corresponding learning resources will be published to students through online interactive platforms.

3.3. Collaborative Grinding Course

Rural teachers actively present their team's problems and confusions in the form of lists or tables during the design process, in order for information technology teaching experts and frontline teaching masters to provide strategies and experience assistance. Information technology teaching experts mainly evaluate and guide the rationality of activity settings and core literacy orientation of rural teachers, focusing on the theoretical level. Frontline teaching masters focus on evaluating and guiding the teaching process design and time control of rural teachers, imparting experience to rural teachers at the practical level, enabling them to continuously optimize teaching through communication.

3.4. Reflection on Teaching

After online discussions, rural teachers can make self-adjustments based on the discussion content to make their teaching more suitable for the students in the class. Then, they can officially start teaching and pay attention to the implementation of new concepts and strategies learned, as well as the collection of teaching data during the teaching process. After class, summarize and reflect on the visual charts generated, clarify the differences between the teaching of this lesson and previous teaching, summarize the benefits and impacts of improving teaching design on students, and reflect on the problems that exist in the teaching process, providing feedback on teaching effectiveness. Through online communication, analyze and summarize the advantages and disadvantages of this implementation, and jointly generate the final teaching model for rural teachers to carry out regular teaching improvement implementation. The differences before and after improving teaching are shown in Table 1.

Table 1. Table of Differences Before and After Improving Teaching

Difference points	Old version teaching	New version of teaching
Teaching objectives	Three-dimensional target	Core literacy
Teaching method	Emphasis on teacher instruction	Carry out more independent exploration and exchange seminar activities, focusing on student subjectivity
Teaching evaluation	Teacher evaluation	Teacher student joint evaluation
Teaching tools	Multimedia courseware	Multimedia courseware, online interactive website

4. Conclusion

As of now, the author's team has conducted a 3-year special training program in two districts and counties in western Inner Mongolia Autonomous Region, with over 300 rural teachers participating in the training. More than 80% of the teachers participated in the entire training process and wrote a complete case study of smart teaching design guided by core literacy; More than half of the teachers are proficient in interpreting and applying student data generated by the platform, cultivating students' core subject literacy in teaching activities, constantly observing and reflecting on their own teaching, and continuously improving their teaching design abilities; More than 40 teachers are able to write high-quality teaching cases, generate their own unique teaching models, and share teaching experience in various activities in the county and district, providing a demonstration role for other rural teachers.

In the future development process of training, the team will continue to focus on research to truly understand the needs of rural teachers, while also paying attention to data ethics, protecting the privacy of teachers and students in pilot schools, continuously cooperating with rural schools, exploring unique teaching models that are truly applicable to rural areas, and empowering the development of rural education.

Acknowledgments

A Path Study on the Effectiveness of Online Training for Primary and Secondary School Rural Teachers Assisted by Universities, Key Project of the 2022 Higher Education Science Research Plan of the Chinese Higher Education Association (22JS0308).

Exploring the Integration of Primary School Chinese Language Learning and Evaluation in Teaching to Enhance Students' National Language Application Ability under the Background of Digital Transformation, supported by the Inner Mongolia Normal University Graduate Research and Innovation Fund (TY20240003).

References

[1] Guo Shaoqing, Lin Fengmin, Yu Qingqing et al. Exploration of Digital Empowerment for Teacher Professional Development Practice. Research on Electronic Education, 2023, 44 (07): 96-106

[2] Liu Jingcui, Zhao Fujiang. Transformation and Innovation of School based Training for Primary and Secondary School Class Teachers: A Practical Study Based on the Workshop of Primary and Secondary School Class Teachers. Education Academic Monthly, 2023 (04): 70-75+98

[3] Yao Gang, Xu Xuefu. The Practical Difficulties and Relief Strategies of Silver Age Teachers Assisting Basic Education Teachers in Teaching and Research: Based on the Perspective of Practice Community Theory. Hubei Social Sciences, 2023, (11): 144-151

[4] Zhang Liguo, Lin Climbing, Liang Kaihua, et al. Network Training for County Urban and Rural Teachers under the Background of Digital Transformation: Patterns, Challenges, and Solutions. Research on Electronic Education, 2024, 45 (07): 90-95+104

[5] Zhang Sheng, Wang Xue, Qi Yuan. Artificial Intelligence Empowered Education Evaluation: New Concept and Core Elements of "Integration of Learning and Evaluation". China Distance Education, 2021 (02): 1-8+16+76

[6] Zhao Ping, Tian Jun. Construction and Empirical Study of Reverse Teaching Design Mode for Precision Teaching: Taking High School Mathematics as an Example. China Electronic Education, 2022 (02): 98-105

[7] Lei Hao, Li Xue. Design and Implementation of Literacy based Large Unit Teaching. Global Education Outlook, 2022, 51 (05): 49-59