

# Exploring the Impact of the Dual-Teacher Teaching Program on Rural Education Under the Internet + Background

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## Abstract

The dual-teacher teaching model in Guangxi China is a typical case of urban-rural education support model under the Background of Internet+, in which excellent urban teachers provide high-quality teaching resources for rural schools with modern teaching technologies to promote the development of weak rural schools. To explore the effectiveness of dual-teacher teaching, this study surveyed 305 rural teachers who participated in the project. The founding showed that more than 85% of rural teachers believed the dual-teacher teaching program as "excellent", and the overall rating was high. The survey shows that the program helps promote the professional development of rural teachers, accurately helps rural teachers improve their classroom teaching, improves the learning atmosphere and academic level of rural students, and promotes the normalization of school-based training. However, there are still problems that the online resources do not match the versions of rural teaching materials, and the limited hardware conditions in rural schools affect teachers' learning and use of the project's teaching resources. Therefore, it is necessary to gain a deeper understanding of the actual needs of rural schools, maintain the integration of the demonstration resources with the local teaching reform requirements in rural areas, and suggest that the education administration should increase the support for rural schools and improve the schooling conditions in rural schools.

**Keywords:** Dual-Teacher Teaching, Urban-Rural Education, Support Model, Internet.

## Abstract

The Ministry of Education has emphasized in the "National Medium and Long-term Education Reform and Development Plan (2010-2020)" (hereinafter referred to as "the Plan") that it is necessary to promote equity as the basic national education policy, accelerate the reduction of the urban-rural gap, and promote the balanced development of compulsory education as an important priority development project. In recent years, General Secretary Xi Jinping pointed out that "poverty alleviation must help the wisdom". Guangxi is an ethnic province in the southwest of China that combines "old, small, border, mountain, poor", and the disparity between urban and rural education is the main battlefield of poverty eradication in China (Li & Liu, 2018). The key to solve the problem of rural education lies in rural teachers.

Therefore, the Guangxi Dual-Teacher Teaching Project Team is committed to narrowing the education gap between regions by deeply leading teachers in rural project schools through excellent teachers in urban demonstration schools, exploring a new model of urban-rural education support, and providing reference and reference for promoting the development of rural education.

### **Overview of the Implementation of the Dual-teacher Teaching Program**

Dual-teacher teaching is a public-interest, innovative model of urban-rural education support aimed at promoting balanced education, initiated and sponsored by the National Basic Education Resources Sharing Alliance, the Affiliated High School of Renmin University of China, and the YouCheng Foundation (He, 2017). Dual-teacher teaching first began in 2013 as an experiment by the NPC Affiliated High School, in which outstanding teachers from NPC Affiliated High School recorded classroom teaching and transmitted it to rural schools in more than 130 areas in 18 provinces in central and western China in the form of live or recorded remote broadcasts. Since the spring semester of 2016, this experiment has been further developed in 148 rural schools in 14 prefecture-level cities in Guangxi, exploring a new model to coordinate urban-rural educational support and promote the development of rural education (Liang, 2017).

### **The Concept of Dual-teacher Teaching**

Dual-teacher teaching is based on the concept of balanced development of urban and rural education, and is a model of online and offline support for rural teachers (Tang, 2015). The "dual-teacher teaching" model is based on the "Internet+" network platform, with excellent teachers from urban primary and secondary schools taking the first classroom teaching, and rural schools as the second classroom, providing rural schools with high-quality teaching resources in the form of remote live streaming, and rural teachers integrating and using the platform resources to teach (Li et al., 2017). The platform's resources are used for teaching, so that students in rural schools can learn in the classroom under the "urban + rural" dual-teacher model. Specifically, under the guidance of university subject experts, urban teachers record their lectures and upload the recorded videos and corresponding supporting materials, including PPT, teaching design and supporting exercises, to the online platform. Rural teachers in the experimental schools then logged on to the platform to watch the videos or download the resources they needed, and modified the downloaded resources to use them in the context of their students' situation. In this process, rural teachers receive training from excellent urban teachers in a companion manner, and this training occurs on a regular basis throughout the year, making it an efficient and popular Internet+ education support model.

### **Components of the Dual-teacher Teaching Model**

There are six main components of the dual-teacher teaching model: the dual-teacher project team, university subject experts, outstanding urban subject teachers, Evergreen volunteer experts, rural teachers, and rural classroom students.

The dual-teacher project team is mainly responsible for the project website development management and the overall coordination of the whole project, which plays a very crucial role in the project command and execution process and is the link of the project. Subject experts from universities also assume an important role in the dual-teacher teaching. The team is good at the theoretical and practical guidance of subject teaching, has advanced teaching concepts, is familiar with the educational policies and subject frontiers of subject

teaching, and makes active contributions to improving the teaching quality of the recorded teachers, as well as providing guidance to rural teachers through online and offline. Urban teachers of outstanding subjects are recorded teachers (hereinafter referred to as "recorded teachers"), who have excellent teaching skills and rich teaching experience, and can bring wonderful and college classroom teaching to students. They are responsible for the main tasks of resource production, including the preparation of courseware and teaching design, and also participate in the recording of teaching videos as the main teacher. As the special experts of Guangxi "Double Teacher Project", most of them are retired teachers who used to teach on the stage or are school administrators, and now they want to continue to play their role after retirement. In the program, they mainly visit rural teachers' schools to listen to their confusion and provide targeted guidance. Compared with their counterparts in developed regions, rural teachers have low teaching standards and old teaching methods, but they have frequent contact with students and know their cognitive level and learning habits very well, so they can better control the teaching process. In dual-teacher teaching, rural teachers undertake the teaching tasks of rural classrooms and use dual-teacher resources to deliver lessons. There are four modes of specific use of dual-teacher teaching resources by rural teachers, namely: Mode 1 copying all of them and imitating them completely; Mode 2 partially intercepting them and integrating them; Mode 3 internalizing and upgrading them and designing them independently; Mode 4 flipping the classroom and learning first and teaching later. Among them, most teachers use mode 2, followed by mode 3, while mode 1 and mode 4 are relatively few. Rural classroom students mainly learn. The most important characteristic of rural students is that they are mostly left-behind children, who are simple and kind, but due to the constraints of learning environment and conditions, most of them have poor learning ability and single-mindedness. However, this does not affect their thirst for knowledge. They are highly motivated to learn and want to get out of the world of life to understand the outside world. Dual-teacher teaching can bring fresh learning experience to rural students and make them feel happy to learn.

### Basic Framework and Implementation Process of the "Dual-Teacher Project"

Based on the previous analysis of the concept and constituent elements of the dual-teacher teaching model, the author interprets the basic structure of the dual-teacher teaching model from the model as a whole, and the basic structure of the dual-teacher teaching model is shown in Figure 1-1.

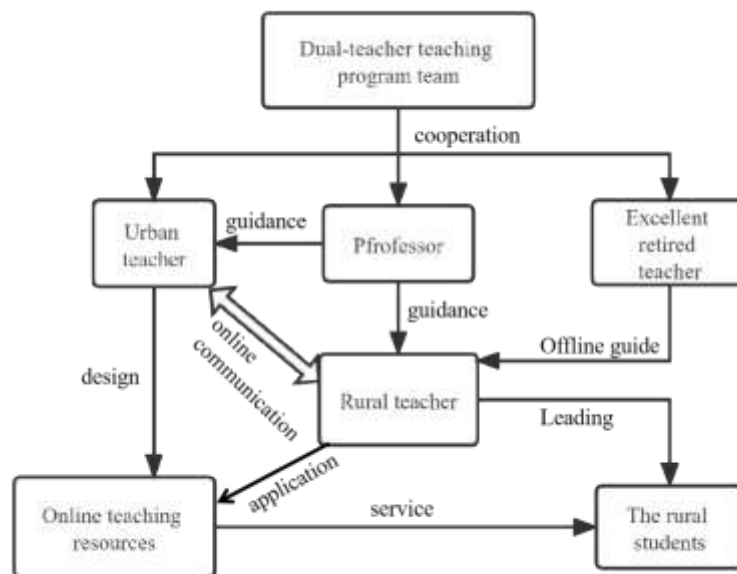


Figure 1-1. The basic structure of the dual-teacher teaching model

The "two-teacher teaching" model is a joint effort of the two-teacher project team, university subject matter experts, classroom teachers, rural teachers, and Evergreen volunteer experts. According to the sequence of each link. The author divided the implementation process of the dual-teacher teaching model into three stages: resource preparation, resource application, and feedback and guidance. The project team selects excellent subject teachers from the high-quality recording schools recommended by the municipal education bureaus as the recording teachers, the dual-teacher project team forms a team of subject experts from universities to guide them, the recording schools form a recording team to carry out the recording, and the experimental schools form a team of experimental teachers. The teachers record the classroom teaching process and upload the video and related teaching design, PPT and other resources to the project network platform. The experimental teachers watch the teaching videos and learn the teaching strategies of the teachers through the project network platform, or use the teaching resources in the platform directly, so as to improve the teaching efficiency and class teaching quality, and finally improve the quality of rural education and promote the balanced development of education. The development of education. The specific implementation process is shown in Figure 1-2, which shows the implementation process of the dual-teacher teaching program.

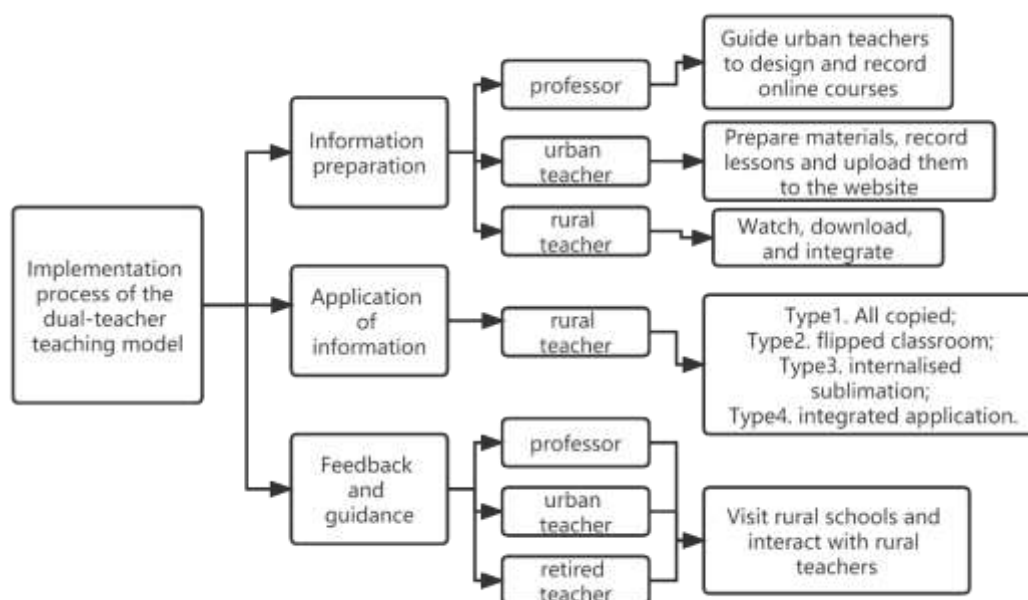


Figure 1-2. Implementation process of the dual-teacher teaching model

### Effectiveness of the implementation of the dual-teacher teaching program

In this paper, a survey study was conducted from rural teachers who participated in the pilot project, and 305 teachers from 66 primary and secondary schools (33 middle schools and 33 elementary school) in seven cities of Guangxi were sampled for questionnaire survey, and the results showed that the dual-teacher teaching program had improved rural teachers' professional development, classroom teaching improvement, students' academic level and school-based training ability. This was demonstrated by the following points.

### Promote the Professional Development of Rural Teachers

Rural teachers highly agree with the dual-teacher teaching model. Rural teachers use the activities of teaching and research groups as the main form to analyze, integrate and apply

the resources, and effectively promote the improvement of classroom teaching. Many teachers reflected that using the examples provided by the dual-teacher teaching program was extremely helpful to improve their teaching design and classroom teaching. Among the 305 subject teachers who participated in the research, 86.75% of them gave excellent grade to the overall project experiment, and believed that the project provided good reference and reference for rural teachers' teaching activity design and teaching context creation through synchronization of teaching contents, teaching process and resource sharing. The survey data showed that 93.75% of the teachers thought the project helped their professional development a lot; 86.25% of the experimental teachers thought their teaching ability had been improved in the project experiment. During the implementation of the project, rural teachers believed that all 12 specific teaching skills had been improved to varying degrees, with the top four ranked as explanation skills, introduction skills, questioning skills, and classroom organization skills. These four skills can be directly imitated and transferred from the demonstrations of good urban teachers. In conclusion, the dual-teacher teaching program plays a very important role in promoting the professional development of rural teachers.

### **Accurate support for rural teachers' classroom teaching improvement**

**From "imitation" to "improvement", dual-teacher teaching provides an excellent model and systematic accompaniment for rural teachers to continuously improve classroom teaching**

The pilot schools have all improved their classroom teaching to varying degrees under the demonstration and leadership of the regular classrooms of the master teachers in the urban schools. Rural teachers imitate the master teachers' classrooms and learn from the improvements to achieve daily, accompanying, systematic and exemplary classroom teaching demonstration and guidance. According to the data of rural teachers' use of dual-teacher resources, only 5.63% of rural teachers implemented teaching by showing the whole teaching video, 61.88% of teachers implemented teaching by imitating after watching the video, 48.75% of teachers designed teaching after referring to the lesson plan, and 52.5% of teachers modified their classroom materials and used them. This fully indicates that the experimental teachers abandoned the original copy and gradually changed to selective use of dual-teacher teaching resources after learning, digesting and assimilating, and then gradually realized digesting and understanding and pushing out new ideas.

**From "self-reflection" to "learning community" construction, the problem of lack of regular guidance for rural teachers' classroom improvement was initially solved.**

66.8% of the teachers said that no expert leaders from outside the school had carried out guidance at school before the implementation of the dual-teacher teaching program. After the project was implemented, 43.9% of the teachers received specific guidance from different mentoring teams outside the school. These different instructional teams consisted of three specific parts: first, the project counties selected nearly 300 county-level team members in five disciplines, including elementary school language, to receive training and participate in school-based instruction and sending teaching to the countryside; second, a team of retired teachers from Nanning, Guangxi, through multiple rounds of touring school-based instructional activities; and third, subject experts from colleges and universities provided timely instruction to rural teachers through various forms of sending teaching to the countryside, cell phone live streaming and online training Classroom improvement. Through continuous interaction and support, rural teachers are effectively helped to solve problems

encountered in classroom teaching improvement, and a rural teacher support system based on teacher classroom improvement has taken shape.

### **The learning atmosphere and academic level of rural students have improved somewhat Dual-teacher teaching opens up the horizons of students and improves their motivation and concentration**

The students in the experimental classes were very interested in this new teaching format after participating in dual-teacher teaching. The questionnaire data showed that 80% of the teachers believed that the teaching resources of dual-teacher teaching applied to the classroom had stimulated students' interest in learning; 78.75% of the teachers believed that it had broadened students' horizons. Students were very active in the classroom, and few students wandered throughout the classroom. Students' learning ability as a whole improved, with more active thinking, more diligent learning, and a stronger desire for knowledge. In the on-site interviews, the rural experimental teachers pointed out that intercepting video teaching created a new form of teaching and learning in which urban and rural students interacted and communicated across geographic areas, and classroom activities were richer. By observing and imitating the learning behaviors in the video resources, rural students made significant changes in their learning styles, such as taking notes and interacting with each other. A good learning style has been formed among students in the classroom, their understanding of problems is getting deeper and more comprehensive, teachers and students are cooperating more and more tacitly, their sense of teamwork and innovation ability are increasing, and most students have gradually experienced the superiority of dual-teacher teaching.

### **Dual-teacher teaching effectively enhances students' academic performance**

The classes taught by teachers participating in the dual-teacher teaching program are referred to here as experimental classes, and the other classes in the pilot project schools are non-experimental classes. The cross-sectional comparison of the academic levels of the experimental classes and the non-experimental classes, and the longitudinal comparison of the academic levels of the experimental classes both indicate that dual-teacher teaching promotes the stable development of students' academic performance and effectively enhances the improvement of students' academic levels. The questionnaires show that the academic performance of students in the experimental classes has improved more significantly. For example, in Dui Li Central School in FuSui County, ChongZuo, Guangxi, after two semesters of project experiments, the average score of the experimental class in the final exam exceeded that of the non-experimental class by 10-20 points, and the excellence rate was 92.1%, exceeding that of the non-experimental class by 43.8%; the passing rate and excellence rate of the final exam of the two experimental classes in the sixth elementary school in PingGuo County, BaiSe City, ranked among the top of the grade, and the average score was more than 10 points higher; Qinzhou City Sixth experimental classes of the first and second semester end of the city's general examination, the results of 32 consecutive rising, accounting for 61.5%.

### **Promote the normalization of school-based training**

The lack of teaching case resources in rural schools, the small difference in teaching levels among colleagues, and the slow pace of updating teaching concepts and methods. Dual-teacher teaching resources not only provide rural teachers with systematic, full-scale



and easy-to-use classroom teaching resources, but also urban instructors show advanced teaching concepts and novel teaching methods, so that subject teaching and research activities in rural schools can cross school restrictions, break the restriction that teaching observation and teaching and research activities are only for classroom teaching in our school and region, and substitute excellent project resources as cases to carry out. This enriches the object and content of the study and enhances the connotation of the teaching and research, plus subject experts visit the schools to guide and tour the schools for diagnosis, which can effectively integrate the work track and help normalize school-based teaching and research in rural schools.

### **Suggestions for deepening urban and rural support**

#### **Integration of exemplary resources provided by project resources with local teaching reform requirements**

Field research shows that some rural teachers hope that the demonstration resources can provide more content for training students' learning styles, or have more general education courses entered. The project team can subdivide the types in the follow-up work, add different demonstrations of the same teaching content, and also adopt a graded demonstration to present demonstrations, so as to provide more options for rural teachers to improve their classroom models.

#### **It is recommended that the education administration increase support for rural schools and improve the conditions of rural schools**

During the research, teachers repeatedly mentioned that due to the hardware conditions of rural schools, the learning and use of exemplary teaching resources were affected, and suggested that the education administration should increase support for rural schools, improve the conditions of rural schools, and effectively enhance the conditions of information technology.

In conclusion, the implementation of "Internet +" rural education "dual-teacher teaching" mode is a new path to solve the problems of backward rural education and urban-rural education imbalance, which enables online teachers and offline teachers to effectively cooperate with each other through the shortcut of the Internet, and updates the implementation of the dual-teacher teaching model is a new path to solve the problems of backward rural education and balanced urban and rural education. How to make the dual-teacher teaching program play a greater role needs to be studied in depth. In the future, we should expand the scope of the study and do a good job of researching relevant schools in order to solve the problems of using "dual-teacher teaching" in different regions in a targeted manner.

This study had practical implications for promoting teaching and learning reform, especially in the context of the Internet in rural areas. By analyzing the case studies of rural teaching reform, this study explores the benefits and challenges brought by the dual-teacher program from the perspectives of rural teachers and students, and provides new ideas and models for rural school teaching reform. At the same time, this study reflects to a certain extent the actual implementation of the "dual-teacher teaching" model through the study of the "dual-teacher teaching" model, and shows the advantages of the "dual-teacher teaching" model for teaching reform in rural schools. It provides a model for other rural areas to carry out information-based teaching practices according to their own conditions, which is



conducive to promoting the equity of educational resources, improving the construction of teachers in other weak areas, and further improving the quality of current rural education.

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