# Research on Innovation and Practice of School Mode and Operation Mechanism of Open University Under Big Data Environment

Junrong Guo<sup>(✉)</sup>

Hebei Open University, Hebei 050051, China

**Abstract.** Based on the open university model and operation mechanism of the relevant theoretical research. This paper expounds that colleges and universities should give full play to their own advantages, explore innovative new models, serve local economic and social development, and study and plan the development path of Open University from multiple dimensions and perspectives.

**Keywords:** Open University · School running mode · Operation mechanism

## 1 Introduction

The essence of the transformation from radio and Television University to open university is to change from the extensive scale development mode to the connotative quality development mode. The goal of the reform of talent training mode is directly to the teaching quality, and the teaching mode is the core part of the talent training mode, which directly determines whether the training goal can be achieved, and whether the appropriate and effective teaching mode can be selected and constructed, It is of great significance to the quality of personnel training in open universities [1].

The distance teaching mode is changing and developing with the social demand and technological revolution. For example, the Open University in the UK initially focused on students' independent learning, and the learning activities were carried out in the form of classroom groups. With the rapid development of information technology, it began to use course websites, e-mail and computer conferences. After 2005, it mainly adopts the open distance learning mode characterized by virtual learning environment, and uses the integrated online learning environment to support students' learning activities, information collection and all-round management.

At the beginning of its establishment, China's Radio and television university system mainly followed the traditional classroom teaching mode, transmitting and receiving curriculum teaching programs through radio and television. Since 1999, through the implementation of the "pilot project of talent training mode reform and open education of China Central Radio and Television University", radio and Television University has carried out extensive and in-depth practical exploration on teaching organization form, teacher-student interaction mode, learning platform and resources. In the summative

evaluation in 2007, most of the provinces have summed up their own teaching modes, on this basis, the teaching mode of "combination of learning and guidance" with students' self-study as the core has been formed [2–4]. After more than ten years of active exploration, the teaching mode with the core feature of "combination of learning and guidance" emerges in endlessly in the radio and television university system, which has become an important achievement in the reform of the talent training mode of distance open education.

## 2  The Current Situation of Teachers in Large Scale System

### 2.1  Main Development Status in China

For most years, he has devoted himself to the exploration and practice of open and distance education, playing a unique role in promoting educational equity in the autonomous region, and has become the main force of distance higher education. As of September 2012, there were 64 Open Education Majors in 100 teaching centers of RTVU, with more than 70000 students. In order to develop RTVU education with regional and national characteristics, the pilot project of Mongolian Chinese bilingual teaching in open education was launched in 2010, offering undergraduate law, finance and accounting majors. By the autumn of 2012, 183 students were enrolled in open education bilingual teaching, which has become the characteristic of RTVU [5–7]. At present, Inner Mongolia RTVU is making every effort to build an ancient Open University. The separation of teachers and students, as well as the diversity of learning subjects and learning needs in Open University make the exploration and practice of teaching mode, the organization and management of teaching process, the construction and sharing of learning resources extremely complicated, which puts forward higher requirements for the construction of teaching staff. With this problem in mind, the course team takes the full-time and part-time teachers engaged in Distance Open Education in Inner Mongolia Radio and TV university system as the research object to conduct questionnaire survey, interview and collect data, and conduct qualitative and quantitative analysis on the survey data, so as to provide the basis for the construction of teaching team.

### 2.2  All Aspects of the Specific Performance

The number of full-time teachers is insufficient. As of 2011, Inner Mongolia TV University has 680 full-time teachers and 386 part-time and external teachers. Compared with the ever expanding enrollment scale, problems such as insufficient total number of teachers, low teacher-student ratio, poor stability of part-time and external teachers, and insufficient teaching ability of distance education are increasingly prominent, It makes the distance educators question the teaching quality of radio and Television University (the requirement of the Ministry of education for the summative evaluation of the talent training mode reform and open education pilot project of the Central Radio and Television University is 501, which is a structural problem. The unreasonable age structure, more old teachers and less than 6% young teachers under 30 years old affect the sustainable development of TVU education. The structure of professional titles and

academic qualifications is unreasonable [8]. The proportion of senior and deputy senior professional titles is seriously unbalanced. Less than 11% of postgraduates have academic qualifications. It is difficult for disciplines and academic echelons to form. The structure of disciplines and specialties is unreasonable. Grammar teachers account for 396%, finance and Economics teachers account for 21.2%, and science and engineering teachers account for 357%. Statistics show that teachers in various disciplines are basically balanced, but specific to each major is very unbalanced. There is a shortage of teachers in new majors, a surplus of teachers in traditional majors and basic courses, and a more serious problem in science and engineering. 59% of the science and engineering teachers are computer application teachers, and about 3800 civil engineering students are in school. Only 6.4% of the teachers are teachers, which is due to the unbalanced construction of the teaching team in each branch. In many branch schools, there are few professional teachers with a large number of students, and the teaching tasks are undertaken by interdisciplinary or external teachers, which leads to the practical problem of low professional coincidence rate. The coincidence rate of civil engineering is only 12%. Fourth, the teaching ability of modern distance education needs to be improved. Although after more than ten years of teaching practice in open education, the teaching ability of full-time teachers in distance education has been significantly improved, and 60% of them can skillfully use modern educational technology, there are still many problems to be solved [9]. Among the surveyed teachers, only 43% can organize online teaching according to learners' needs, only 31% can independently develop multimedia courseware, and only 12% have presided over distance education research.

## 3 The Significance and Basic Characteristics of Teaching Team Construction

### 3.1 The Significance of Teaching Team Building

To sum up, the teacher-student ratio, structure and ability of teachers in Inner Mongolia Radio and TV university system are not suitable for the construction of Open University. Only by integrating excellent teacher resources of the whole system and building a high-quality teaching team across time, space and organizational boundaries, which integrates learning resource development, teaching organization and management, learning support service and scientific research, can we help the construction of Inner Mongolia Open University. (1) Realize the co construction and sharing of high-quality education resources of the system. Break the boundaries of region and organization, set up a teaching team composed of excellent teachers, technicians and managers of the same specialty at all levels of the system [10]. Through equal communication, unity and cooperation, and complementary skills and knowledge among members, the team members can make common progress and improvement, and promote the co construction and sharing of high-quality teacher resources in the system. (2) To realize the individual professional development of teachers and improve the overall quality of teachers. In the process of completing the task, team members can learn and communicate with other members to achieve personal goals and promote professional development, and promote the improvement of the overall quality of the whole system of teachers through the training of team members. (3) It is necessary to promote teaching reform and practice and

improve teaching quality. Team members based on the network environment of remote cooperation, explore and practice the new teaching mode based on the network environment of autonomous learning, remote support services and face-to-face counseling, effectively solve the main problems in the teaching process, and strive to improve the teaching quality of distance open university education. (4) Build the learning support service system of Open University. The teaching process of Open University is the process of providing diversified learning support services for all kinds of learners at all levels. The learning process of students is the process of receiving and using learning support services [11–15]. A perfect learning support service system needs the support of a high-quality team of teachers.

### 3.2   Basic Characteristics of Teaching Team

There are many definitions of team by scholars at home and abroad. American scholars kazenbach and Smith (1993) define team as a group composed of a few individuals with complementary skills and intended to take responsibility for the common vision, performance goals and methods. Based on the research of related literature at home and abroad, combined with the characteristics of Open University, the author thinks that the teaching team of neijiagu Open University is a multi-ethnic teachers, administrators and technicians with different knowledge and skills, which is based on the professional construction platform, According to the concept of teaching team, the basic characteristics of teaching team are as follows: (1) having clear team objectives and members' responsibilities. Teaching team is a temporary teaching organization based on a certain specialty or a certain course construction task. A high-performance team must ensure that the team goals are consistent with the individual goals of its members. (2) Team organization structure with appropriate scale and reasonable structure. Team members across time and space and organizational boundaries, no hierarchy, complementary knowledge and skills. (3) Based on the network environment, remote division of labor and cooperation. (4) Through the network information technology and other communication technology to communicate and establish a trust relationship. (5) Task driven management [16]. Team leader overall planning, individual members self-management and self-control, mutual management and cooperation within the team.

## 4   Obstacles to the Construction and Development of Teaching Teams

### 4.1   The Influence of Administrative System

First, the team operation mechanism is not perfect. There is no hierarchy among teaching team members, and the task driven team internal management mode increases the difficulty of team management. Third, professional leaders and curriculum responsible teachers have not introduced the competition mechanism, and they are assumed by full-time teachers appointed by the University Department [17]. As shown in Fig. 1. The quality of professional leaders and curriculum responsible teachers is uneven, and even some professional leaders are assumed by interdisciplinary teachers, which also restricts the construction and development of the team to a great extent.
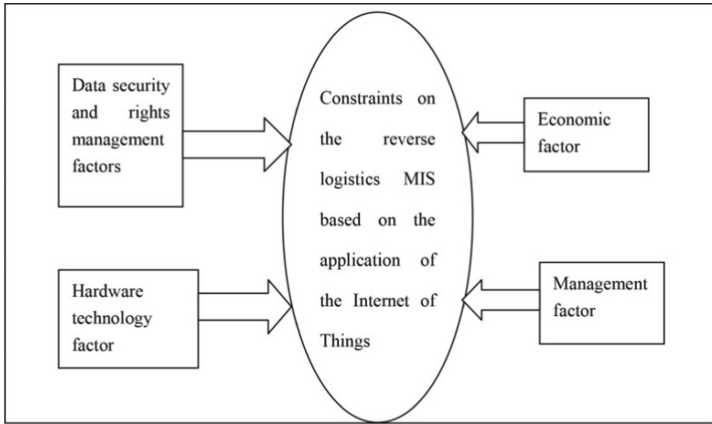
**Fig. 1.** Main influence of administrative system

## 4.2 The Influence of Team Members' Cultural Differences

The difference of working environment and scientific research direction adds to the complexity and diversity of communication within the team. It is difficult to establish and maintain the team trust relationship. Teachers at all levels lack effective communication and cooperation. First, teachers at different levels have vague role positioning, unclear division of labor, and all teachers are doing repetitive work, Second, most teachers are lack of team work experience, lack of cooperation and communication among teachers in the system, even teachers of the same course seldom communicate with each other, and the headquarters does not provide professional guidance and training for grass-roots teachers [18]. The survey data shows that in the past two years, only 36% of the branch school and teaching point teachers have participated in the systematic teaching seminar and secondary training, only 32% are satisfied with the teaching and research meeting organized by the University Department, only 26% often communicate with the superior professional head or curriculum responsible teacher, and less than 339% have received the guidance of the superior professional head or curriculum responsible teacher.

## 4.3 Enhance the Understanding, Strengthen the Construction and Management of Teaching Team

A special organization should be set up in the headquarters of Open University. Take full charge of team building and management, supervise and guide team building regularly or irregularly to coordinate with the construction of Open University. The second is the system construction. According to the characteristics of the teaching team, formulate corresponding rules and regulations, standardize the team application, approval and acceptance procedures. According to the needs of specialty and curriculum construction, the current situation of teaching staff and the situation of students, scientific planning of team building should not be carried out in a rush. Third, reform the administrative mechanism. Establish a team leader responsibility system with unified responsibilities and rights, set up a special fund for team building, give full support to people, finance and

materials, and help team leaders solve the difficulties and problems in their work. Fourth, improve the team leader selection mechanism. Introduce competition mechanism, select team leaders within the scope of the system, and effectively allocate teachers with strong professional ability, organizational management and communication skills to the team leaders [19]. Fifth, improve the management mechanism of learning guidance teachers. The teaching team will be used as the whole system of the subject guidance teachers resources, and the guidance teachers will be deployed in the regional radio and TV university system to provide students with hierarchical and diversified guidance, assistance and promotion services.

## 5    The Development of Community Education in China

Although the rise and development of community education in China has a short history, it has made great contributions to improve the quality of life of community residents and enrich their spiritual and cultural life. After nearly 30 years of development, it has gradually formed a new type of community education with the development orientation and characteristics of "all staff, whole process and all-round". The status of community education in the whole education system has been constantly strengthened, and the relationship between community education and regional economic and social development is becoming closer and closer. Therefore, it is of great significance to accelerate the development of community education to build our country into a learning society. This chapter mainly reflects the development pace of Guangxi community education from the development process of community education in China, observes the development characteristics of Guangxi community education through the basic characteristics of community education in China, and analyzes the development form and direction of Guangxi community education by summarizing the experience of developing community education in developed areas in China [20, 21].

The depth of field can be defined as the distance between the depth planes of the back and front edges:

$$DOF_{geom} = 2\frac{l^2}{g \times p}p_d \tag{1}$$

The optical imaging model of lens can be used to analyze the imaging optical path of camera lens:

$$\frac{1}{f_c} = \frac{1}{g_c} + \frac{1}{L_c} \tag{2}$$

The integrated imaging display mode can be divided into real mode, virtual mode and focus mode, and the display process also meets the Gauss imaging principle:

$$\frac{1}{f_2} = \frac{1}{g_2} + \frac{1}{l_2} \tag{3}$$

# 6   General Situation of Community Education in China

## 6.1   The Basic Characteristics of Community Education in China

Community education, which integrates education with management, service and cultural activities, is a breakthrough, expansion and extension of single school education. The role of community education in the community is constantly highlighted, such as the opening of educational resources and sharing with residents, holding various cultural activities to improve the knowledge literacy of community residents, etc. At the same time, community education plays a role in promoting and guiding the formation of residents' values in community development. Therefore, the basic characteristics of Chinese community education can be summarized as follows:

One is human nature, which means that the fundamental value orientation of Chinese community education is to promote people's all-round development. This requires that community education should take "people-oriented" as the starting point and foothold. The second is comprehensiveness, which means that the educational activities and contents of community education cover a wide range. The third is all staff, which can be summarized as community education for all members of the community. The main objects of community education are vulnerable groups, the disabled, the elderly and migrant workers in the community. Due to the change of social structure, community education is more and more widely concerned. With the aggravation of population aging in China, the elderly has become an important object of community education. The floating population has also become a large group of community education objects, so we should improve their cultural quality and professional skills to make them qualified citizens. Enterprise reform has led to more and more laid-off workers need to change jobs, coupled with the influx of new labor force into the human market, community education should play a role, adjust the psychology of the unemployed, strengthen their skills training, and enhance employment competitiveness [22]. As the community education circles say, one of the purposes of community education is to "improve the quality of life of community members and promote the life development of community members the fourth is diversity, which means that the composition of community members is complex and changeable, so the content and form of community education should have the characteristics of diversity.

## 6.2   The Basic Management System of Community Education in China

The management system of community education is the guarantee of the stable development of community education and a kind of government behavior. System is usually defined as the general term or systematization of fundamental management system, mode, method and form, such as institution setting, subordinate relationship and authority division in organization system. Community education management system is a comprehensive and systematic education management system composed of community development power, interest subject, power structure, operation mechanism and supervision mechanism. At present, the management system of community education in China basically takes the form of Street (town) Community Education Committee. Because of the participation of administrative officials, such organizations have both authority

and universality, which is one of the biggest characteristics of our community education management system.

Model is a rational and simplified form to reproduce the existing facts. In the process of the development of community education in China, four basic modes of community education management have been gradually formed. One is the street centered regional community education management mode, which is usually a community education organization mode with the district government or streets as the main body and all sectors of society participating in the management [23]. The second is the interactive community education management mode between school and community, which requires two-way communication between school and community.

## 7   System Simulation

The research on the innovation of Open University Based on big data mainly focuses on the optimization of its curriculum, because in all the optimization process, the selection of curriculum is an integration and optimization process of the whole system. In the big data environment, we optimized 12 courses, as shown in Figs. 2 and 3. In these 12 courses, we mainly focus on which courses must be opened, which courses are open, which courses are old and old [24]. From these aspects, we can use students to integrate into society faster in innovation. Innovative mechanism, innovative curriculum system and innovative system are the future of Open University.
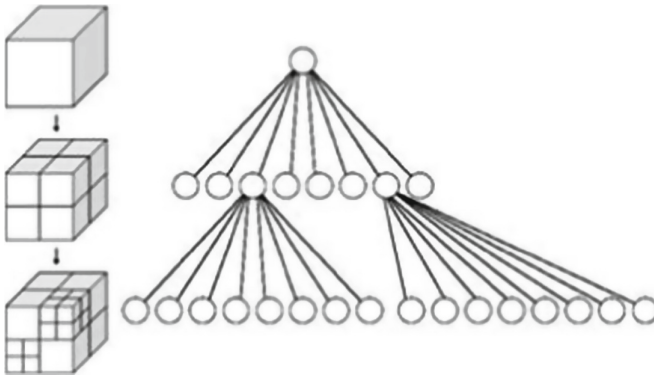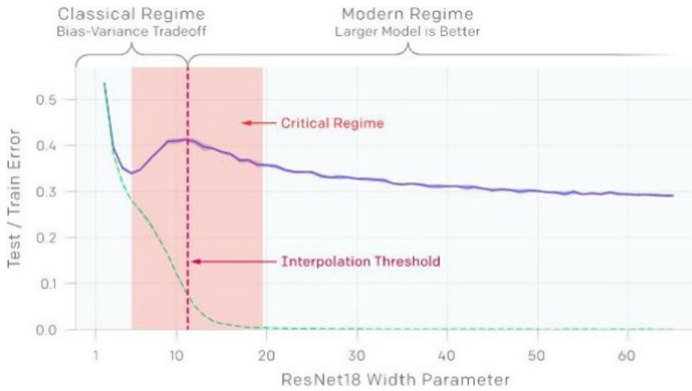


**Fig. 2.** Curriculum Optimization

**Fig. 3.** Optimization Results

## 8 Conclusion

The teaching and learning of distance education are in the state of "quasi permanent separation". How to adopt the appropriate training mode, fully consider the learning characteristics of learners, actively play the role of teachers and platforms in guiding the learning of distance learners, and realize the talent training goal of distance open education has become an important reform content of the transformation from radio and Television University to open university.

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