Development of Equal Opportunities to Education using ICT : Overview of the Nationwide Project 'Modern Distance Education for Schools in the Rural Areas of China'

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ABSTRACT :

The Ministry of Education in China is concerned to extend the reach of educational opportunities to the whole country, and that all students have equal access to high quality education. To extend opportunities to the rural areas of China, it is necessary to use distance education and technology, since these may be able to provide access at reasonable cost through sharing high quality education resources developed and used in the major cities. Since 2003, the Chinese government has promoted a project 'Modern Distance Education for Schools in the Rural Areas of China', which aims to reduce the gap in education quality between the urban areas and the rural areas - by sharing digital resources through ICT. This Paper gives an overview of the project : its background, the main tasks, achievements, challenges, and trends. We include a literature review, interview findings, and a field case study. Together with discussion of the challenges and the trends, some suggestions are then given for further consideration. This Paper shares some valuable information on how distance education can be used as an effective way to enhance the educational balance in China.

1. INTRODUCTION :

'Education for all' was originally proposed by Confucius as the ideal of education for all societies. It means all students have equal access to high quality education, whoever is poor or rich. However in fact, because of imbalances in economic levels, a gap in education quality has developed between rich urban areas and the poor rural areas across China. For example, by the end of 2006, in rural areas there are 295,052 primary schools and 87,590 teaching centers from 341,600 primary schools in total. The students in primary schools and teaching centers in the rural areas are 107,115,300 (Ministry of Education, 2007). The central government is concerned about this issue while the education in developed areas is being enhanced by economic development. So since 2000, the central government has made enhancing education in rural areas a major priority.

It is well recognized that distance education through technology has the potential to provide access at reasonable cost through sharing the high quality education resources developed and used in the major cities. So the Chinese government has decided to take distance education through information and communication

technologies (ICT) as the main solution to deliver high quality education resources to rural areas, and accordingly in 2003 has launched a nationwide project called 'Modern Distance Education for Schools in the Rural Areas of China', which aims to reduce the gap in education quality between the urban areas and the rural areas - by sharing digital resources through ICT (Ministry of Education, 2003). So far the first phase of the project has been finished and the budget for the first phase on this project was over 10 billion – all of which has come from central or local governments - essentially covering the costs for facilities and digital resources.

The project is the first nationwide action and the highest investment ever initiated by the central government to improve the education quality for K12 schools in rural areas. It is significant that as a strategic decision the project must develop education equity and enhance society harmony.

The long-term goal of the project is to enhance education equity by sharing high quality digital resources through ICT between different areas. The goal of the first stage of the project is to equip every primary and secondary school in rural areas with one of three kinds of ICT solutions by the end of 2007 and to deliver high quality digital resources to all schools in rural areas from hub cities.

2. METHODS :

In this project, three kinds or modes of ICT solutions are employed. The first mode is to link up the rural school computer laboratory with access to the internet, which can then support schools to get digital resources through the internet. The second mode is setting up a satellite receiver with one computer, which can support schools to get digital resources from satellite. The third mode consists of a simple CD-player with one TV set which can support schools to get digital resources from CD.

There are four main tasks in this project as follows. The fist task is to equip every primary and secondary school in rural areas with one of three kinds of ICT solutions.

Every secondary school in the rural areas is to be equipped with one computer laboratory which can have access to the internet. Every primary school in the rural areas is to be equipped with one satellite receiver set. Every teaching center in the rural areas is to be equipped with one CD player set. The second task is to set up a National Center for Digital Education Resources for K12 in Beijing, and develop good quality digital education resources for this project. The third task is to deliver good quality digital education resources by three kinds of ways. The fourth task is to integrate the ICT solutions into teaching and learning, and thus improve the education quality in the rural areas.

3. RESULTS :

By the end of 2007, the overall financial input into the project 'Modern Distance Education for Schools in the Rural Areas of China' is over 1.1 billion RMB (about 170 million US$). The facilities of the third mode, CD player sets, number 402,000 in total. The facilities of the second mode, satellite receiver sets, number 279,000 in total (Chen Xiaoya, 2008). The facilities of the first mode, computer laboratories with access to the internet, number 45,000 in total. This means that now every school in the rural areas of China has got at least one way to receive digital resources from Beijing. A network for distance education has been finished. It is the first ever network which can support distance sharing of digital resources between developed areas and rural areas in China.

By the end of 2007, the digital resources on CD cover all subjects and all knowledge at primary level. The video resources for satellite receivers cover 11 subjects of secondary school and 8 subjects of primary school. The multimedia resources for computer laboratories cover 9 subjects of secondary school and 8 subjects of primary school (Chen Xiaoya, 2008). All teachers in rural areas can now learn the teaching and learning pedagogy adopted by the teachers in the developed areas very conveniently with these facilities.

All facilities and resources have been integrated into teaching and learning in local schools in different degrees and different ways. Shaoqing Guo has categorized the application levels of the facilities into five stages ;- left unused, few used, trial use, effective use, natural use in daily teaching and learning (Guo, 2006). Local governments are playing very important roles in this aspect. Most provinces provide training programmes on how to operate the facilities and organize joint-conferences on how to use the facilities effectively in subject teaching and learning. Some provinces have even developed digital resources for themselves. For example, Hu Bei Province has invited some English teachers from Britain to develop English teaching resources for all K12 grades in primary and secondary school in order to solve the shortage of qualified English teachers in Hu Bei.

The project 'Modern Distance Education for Schools in the Rural Areas of China' is highly valued and warmly welcomed by the teachers and students in rural areas. They summarized the achievements of the project into three changes, three increases and three enhances. The three changes are transfer in philosophy of teaching, transfer in pedagogy of teaching, and transfer in learning styles. The three increases are more information, more sharing between teachers, and more participatory learning activities. The three enhances are enhancing teaching efficiency, enhancing research on teaching, and enhancing learning participation. One principal at a rural primary school summarized these in his comments saying 'with these facilities and digital resources provided by the project, we can get all kind of knowledge and information beyond the big mountains' (Chen Li & Chen Meiling, 2007).

From these results, it is very clear that the project 'Modern Distance Education for Schools in the Rural Areas of China' has been effective in reducing the gap between developed areas and rural areas. The improvements in education quality are significant particularly in the schools with the third-mode computer laboratories facilities (Wang Zhuzhu & Chen Li, 2007).

4. CONCLUSIONS :

Although all schools in rural areas have some ways to get digital resources, the ICT facilities are still insufficient compared with the practical requirements for the subject of computer education. For example, the teaching centers in rural areas with only one CD player has no computer so far. They cannot supply students with the course 'Computer Education'. The primary schools in rural areas with only one computer and satellite receiver have similar although not so severe problems. So at present in the rural areas the facilities and resources in primary and secondary schools mainly serve teachers, instead of students. Even in secondary schools in rural areas one computer laboratory can only provide access for one hour per student every week. When we visited one secondary school in Hainan Province, most students complained they did not have many opportunities to learn in the computer laboratory and their ICT literacy was still poor compared with students in the developed city areas (Chen Li & Chen Meiling, 2007). So the first phase of the project has only provided a bridge to share good quality resources, and is still quite far from supplying good ICT infrastructure for effective applications to the rural areas.

As mentioned above, more and more digital resources are being developed by the National Center for Digital Education Resources for K12, and have reached the primary and secondary schools in rural areas from Beijing already. However the education philosophy for some of these resources is still teacher-centered, which does not support student-centered pedagogy for new curricula. Moreover some resources, which are effective in schools in developed areas, are not suitable for schools in rural areas. It is urgent that some digital resources are localized and improved.

Other research has found that the application levels of facilities from the project depended on the ICT literacy of the teachers in the schools in the rural areas (Shaoqing Guo, 2007). The facilities and resources only in schools with teachers, who have high ICT literacy levels, can be

integrated into teaching and learning very effectively. In fact some teachers in rural areas have never received training in ICT applications, and have not much idea on how to use ICT and digital resources. Therefore the ICT facilities and digital resources in some schools cannot be used very well at present. The teacher is the vital factor for the success of this project. Some teachers are not yet prepared for new technology and new pedagogy. So it is necessary to increase the competence in education technology of the teachers in the rural areas as soon possible.

It is apparent that the project 'Modern Distance Education for Schools in the Rural Areas of China' will be a long-term project, far from only providing facility equipment and good quality resource sharing. The success of the project concerns many other factors, more than technology and resources. For example it is a vital factor for the local schools to keep the facilities working all the time, and for support from local governments to sustain the project. In fact for some schools in very poor conditions, there is no budget for electricity although the facilities and resources are provided by the government freely. So it is necessary for the central government to develop further policies and make new budgets for the sustainable development of the project.

5. SUGGESTIONS :

In order to realize the long-term goal of the project 'Modern Distance Education for Schools in the Rural Areas of China', more facilities and better ICT infrastructure for schools in the rural areas are necessary. Then perhaps sustainable invest on ICT infrastructure will follow. So the central government should provide for new budgets for upgrading the facilities in the second phase and later. Of course this is a major challenge and is not easy task.

The development of resources should suit the practice of education in rural areas. So the National Center for Digital Education Resources for K12 should conduct more research on the needs of schools in the rural

areas concerning digital resources, and improve the evaluation criteria of resources in accordance to the practical needs of the actual schools in the rural areas. For example, students of different ages in the teaching centers in rural areas are mixed into one class. It means teachers working in teaching centers in rural areas have to instruct students in different levels at the same time. But this hardly happens for the teachers in developed areas. So the National Center for Digital Education Resources for K12 should develop suitable resources which can help teachers to improve teaching and learning in the teaching centers in rural areas, instead of resources only suitable schools in developed areas. The curriculum reform is transferring teaching and learning from teacher-centered pedagogy to student-centered pedagogy even in rural areas. However even in the developed areas this is still in the trial stage. The National Center for Digital Education Resources for K12 has to supply resources for student-centered pedagogy to schools in rural areas. So a system including management structure, policy and budget should be developed to ensure the resources to rural areas can be monitored and sustainably improved.

In order that most teachers can learn from digital resources and integrate digital resources into their teaching and learning, the government should make its first priority to be teacher training in the second stage. Distance learning can be employed to be the main training pedagogy, which is suitable for part-time learners with flexibility in time and space. Peer study and local sharing by face-to-face teaching can be blended with distance learning. The training content should be practical and suitable for teachers in rural areas, not only theoretical knowledge. A certificate of training should be part of the qualification as a teacher. The government should pay most money for teacher training and provide scholarships for some teachers in rural area.

It is necessary and very important to develop an assurance system for the future sustainable development of the project 'Modern Distance Education for Schools in

the Rural Areas of China'. An effective assurance system would include a comprehensive plan, a reasonable budget, effective policies, and a strict monitoring system. For the second phase, the government should make a comprehensive plan based on a general evaluation of the first phase and a study of the actual practical needs. The funding should be balanced in a way to cover the hardware, software, teacher training, and maintenance costs. A policy system should include local policy to support rural teachers to use the available resources.

In summary, the project 'Modern Distance Education for Schools in the Rural Areas of China' is significant for education equity in China. It is clear that the project has made many achievements and caused significant influence in improving K12 education in rural areas. However there are still many challenges ahead. In the second phase, the central government should pay attention to teacher training and operational costs, as well as the development of appropriate learning resources suited to the schools in the rural areas.

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