Information and Communication Technology in China:
Connecting 200 Million Children for Better Education

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ABSTRACT

This article provides an overview of the recent development of information and communication technology (ICT) utilized in Chinese elementary and secondary education. Specifically, the article discusses the positive impact ICT has on Chinese education, as well as the existing problems in the application of ICT. The potential for further developing education with ICT in schools is considered. In addition, challenges are discussed, and recommendations are made with regard to providing better education with ICT. The target audience of this article is policy makers, educators, ICT professionals and researchers.

Keywords: Chinese Education, Impact, Information-and-Communications-Technology

INTRODUCTION

If Confucius (551 – 479 BC) is considered the beginning of Chinese education, it has a history of 2,500 years. In Han Dynasty (206 BC – 220 AD) the first civil service examination program was instituted to find common people to fill public positions based on knowledge and ability, not genealogy. This national examination system was used with little variation for nearly 2,000 years through different dynasties, until it was abolished in the last feudal dynasty in 1905. In 1949, the People's Republic of China was established, starting a new page in the development of Chinese education. In 1978 the

Chinese government implemented the policy of reforming and opening up and Chinese education began to develop in a speed that had never been seen before.

As the most populous developing country in the world, China has the highest demand for developing its human capital. While Chinese education has a long history, the gap between education in China and education in developed countries is obvious. In 2005 the Chinese combined gross enrolment ratio of primary, secondary and tertiary schools was 69, compared with the American ratio of 93, the Japanese ratio of 86, and the Canadian ratio of 99 (United Nations, 2007). With regard to secondary education, in 2005 the Chinese gross enrolment ratio of upper secondary education was 50, compared with

the American ratio of 88, the Japanese ratio of 102 and the Canadian ratio of 134 (UNESCO Institute for Statistics, 2007).

In China, grade 1 to grade 6 is elementary education and grade 7 to grade 9 is junior secondary education. Elementary and junior secondary education is compulsory and is referred to as basic education. Formal education from grade 10 to grade 12 is senior secondary education, and it is not compulsory, but most youth graduate from secondary school, or receive some senior secondary education (Ministry of Education, April 2008).

The Chinese economy has changed from a planned economy to mainly a market economy, and all kinds of market-related skills have to be imparted to students in schools, yet the education system is still quite isolated from the market. For three decades (1949 – 1979) almost all Chinese schools were funded and administered by governments at various levels. Today there are international schools operated by Chinese in partnership with foreigners, private schools owned and operated by individuals or organizations, and cooperative schools operated by individuals or organizations in partnership with governments. These schools are different from public schools, which are the vast majority of Chinese schools. Public schools are funded and administered completely by governments.

ICT IN ELEMENTARY AND SECONDARY EDUCATION

The significant social development in China requires that elementary and secondary education be available for all children. It also requires that education be effective and efficient. In making elementary and secondary education available for all and in making it more effective and efficient, ICT can play a greater role. The rapid ICT progress may help the Chinese education system deal with the challenges brought about by the increasing demands to make education available for all and to further improve the education system.

Although China has a vast population, it still lacks sufficient human talent. One of the country's main strategies is to develop such talent by turning its large population into an advantage, changing its economic growth model from a resource-intensive one to a knowledge-intensive one. To develop human talent and build a knowledge-intensive economy, China needs to expand preschool education, improve elementary education and universalize secondary education. In addition, some Chinese learning facilities and teaching methods are out of date (Li, 2007). In renovating learning facilities and updating teaching methods, contemporary ICT will be helpful. The Chinese government is developing satellite and broadband-based distance learning to increase education availability, improve learning effectiveness, reduce operational costs, and provide equitable learning resources for all students.

In 1997, the Ministry of Education started a project of experimental schools for the development of educational technology. Over the years these experimental schools have made progress in building an ICT environment and in promoting the application of ICT in teaching and learning. These schools have made strong efforts to create and improve systems that apply ICT to teaching and provide ICT education to all their students.

With regard to ICT application in schools, eastern regions, particularly urban centers, have an advantage over the central and western regions, since economically eastern regions are more developed, and household income is usually higher in urban centers. In 2003 the Ministry of Education decided to provide distance education facilities to all schools in the rural areas of central and western regions to help make educational ICT available for all rural children. By the end of 2007, 270,000 elementary and junior secondary schools in central and western regions had been equipped with facilities that used contemporary ICT, which allowed them to receive teaching and learning resources through satellite technology provided by China Education Television (CETV). These schools built computer classrooms and most

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