

Chapter 1

Information and Communication Technology in Chinese Education With Its Progress and Challenges

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ABSTRACT

This chapter provides an overview of the current development of information and communication technology (ICT) utilized in education in China. Specifically, the chapter describes and discusses how ICT has been used in Chinese elementary and secondary education, as well as the existing challenges in ICT applications. The chapter also examines ICT's application in higher education, particularly how it has transformed Chinese higher education with online provision, and the issues that must be dealt with. The author discusses the potential for further developing education with ICT. In addition, based on the Chinese and international literature the author has reviewed the chapter and made recommendations with regards to providing better education utilizing ICT.

INTRODUCTION

The purpose of this chapter is to provide an overview of the development of information and communication technology (ICT) utilized in education in China. In comparison with English literature on ICT in developed countries, literature on ICT applied in Chinese education is quite limited. This chapter will fill a gap in the world literature on ICT utilization in education. In addition to the literature reviewed, this chapter discusses the potential for further developing Chinese education with ICT.

In July 2018 China Internet Network Information Center reported that by the end of June 2018, 802 million Chinese had used the Internet, which was about 57.7 percent of the population, with an increase of 3.8 percent over the end of 2017 (China Internet Network Information Center, 2018). China is the country with the most Internet users in the world, which means today Chinese use information and com-

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munication technology (ICT) more extensively in their life, including in education. With increasingly sophisticated ICT, it is easier for Chinese learners to receive education than before. However, when compared with the United States where about 84.2 percent of the population use the Internet regularly (Miniwatts Marketing Group, 2018), the gap is still great.

While proportionately Chinese are behind people in developed countries in using the Internet, the increase in the number of users in the first half of 2018 is approximately 3.8 percent (China Internet Network Information Centre, 2018), higher than that in most developed countries. As more Chinese go online, the Internet has grown in importance as a venue for education. Chinese economy has been developing faster than in developed countries, Chinese are more involved in international affairs, and China has been contributing the most to the United Nations peace keeping troops. Chinese educators' awareness of internationalization has increased, and the interaction between Chinese educators and international colleagues has also been increasing. China is the only country among Economic and Social Commission of Asia and Pacific members that has extended its commitments to liberalize access in all five subsectors of educational services (Raychaudhuri & De, 2007).

The Chinese economy is the second largest in the world, next only to that of the United States, but the Chinese population is approximately four times that of the US. In 2018 the Chinese expected years of schooling was 13.8, compared with 16.5 of the US (United Nations Development Programme, 2018). The gap in expected education attainment between China and the US is obvious. There are over 260 million students in Chinese schools (Chen, 2017). The demand for education in China is huge and the potential of the education market is great. It is impossible for the traditional means of education to fulfill this important task on its own if China hopes to catch up with developed countries within a short period of time. Within China, because of development disparities, the gap in education attainment between densely populated eastern regions and sparsely populated western regions is wide with western regions being behind.

In China, formal education from grade 1 to grade 9 is compulsory, which is referred to as basic education, and 94 percent of the children in the relevant age group are in school. Education from grade 10 to grade 12 is not compulsory, but 88 percent of the relevant age group is enrolled in grades 10 to 12 in 2018 (Ministry of Education, July 19, 2018). Since China opened to the world in 1978, more youth receive higher education. However, in 2018 the Chinese higher education participation rate is approximately 46 percent (Ministry of Education, July 19, 2018), still lower than that in developed countries. In addition, there are concerns about the quality of Chinese higher education (Du & Zhou, 2018). To catch up economically with developed countries, Chinese need to catch up educationally, when utilizing ICT in education will be helpful.

ICT in Elementary and Secondary Education

Rapid social development in China requires the continuous advancement of its education system, where ICT application has been increasing. Progress in education ICT helps the Chinese education system deal with challenges brought by fast economic and social change and the increasing demand that education be available for all. It has been pointed out that there are problems in the Chinese elementary and secondary education system, and the system needs a comprehensive reform, particularly a reform in its curriculum. With the advancement of education ICT, including cloud computing, the application of multi-media computers and the Internet is increasing in classrooms, which is conducive to a comprehensive curriculum reform.

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