

# Chapter I

## New Paradigm of Learning and Teaching in a Networked Environment: Implications for ICT Literacy

**Yin Cheong Cheng**

*Hong Kong Institute of Education, Hong Kong*

### **ABSTRACT**

*This chapter introduces a new paradigm of learning and teaching that aims to develop students' contextualized multiple intelligence (CMI) and create unlimited opportunity for students' lifelong independent learning through a triplization process including individualization, localization, and globalization in teaching and learning. In particular, the chapter illustrates how students' self-learning can be motivated, sustained, and highly enhanced in an individually, locally, and globally networked human and ICT environment. Different from the traditional emphasis on delivery of knowledge and skills in planned curriculum, the new paradigm pursues the extensive application of ICT and enhancement of teachers and students' ICT literacy in building up a networked environment for students' individualized, localized, and globalized learning and CMI development. It is hoped that students equipped with the necessary ICT literacy can become borderless learners with unlimited opportunities for learning and development in a networked environment.*

### **INTRODUCTION**

In the new millennium, challenges such as rapid globalization, the tremendous impacts of information technology, international transformation towards knowledge-driven economy, strong demands for societal developments, and inter-

national and regional competitions have driven numerous educational changes in different parts of the world (Cheng & Townsend, 2000). Policymakers and educators in each country have to think how to reform education for preparing their young leaders to more effectively cope with the challenges in the new era.

In such a challenging context, paradigm shift in education becomes necessary in the new millennium. Adapted from the key theories in my previous work (Cheng, 2000), this chapter aims to illustrate how education at the K-12 level should be transformed from a traditional site-bounded paradigm towards a new paradigm including globalization, localization, and individualization in education with the support of information and communication technology (ICT) and international networking. In particular, the chapter also elaborates how unlimited opportunities for teaching and learning can be created in an individually, locally, and globally networked environment, what paradigm shift should be necessary in applying ICT in education, and what implications for literacy in technology will be at the K-12 level. It is hoped that the proposed new paradigm of education in a networked environment will provide innovative ideas and possibilities for enhancing the effectiveness of K-12 education in different parts of the world to meet the challenges of the future.

## **TRIPLIZATION IN EDUCATION**

Rapid globalization is one of the most salient aspects of the new millennium, particularly since the fast development of information technology in the last two decades (Brown, 1999). Inevitably, how education should be responsive to the trends and challenges of globalization has become a major concern in policy making in these years (Ayyar, 1996; Brown & Lauder, 1996; Green, 1999; Henry, Lingard, Rizvi, & Taylor, 1999; Jones, 1999; Pratt & Poole, 2000; Curriculum Development Council, 1999). Cheng (2000) argued that not only globalization but also localization and individualization are necessary in ongoing educational reforms. All of these processes as a whole can be taken as a *triplization process* (i.e., triple + izations) that

can be used to consider educational reforms and formulate the new pedagogic methods and environment necessary to implement education at the K-12 level.

## **PARADIGM SHIFT IN LEARNING**

With the concepts of triplization, a paradigm shift in K-12 education can be initiated from *the traditional site-bounded paradigm* to *the new triplization paradigm of education* (see Table 1).

### **Traditional Paradigm of Site-Bounded Learning**

In traditional thinking, students' learning is part of the reproduction and perpetuation process of the existing knowledge and manpower structure to sustain developments of the society, particularly in the social and economic aspects (Cheng, Ng, & Mok, 2002; Blackledge & Hunt, 1985; Hinchliffe, 1987; McMahon, 1987). Education is perceived as a process for students, and their learning is being "reproduced" to meet the needs of manpower structure in the society.

### **Reproduced Learning**

In traditional K-12 education, students are the followers of their teachers. They go through standard programs of education, in which students are taught in the same way and same pace even though their ability may be different. Individualized programs seem to be unfeasible. The learning process is characterized by absorbing certain types of knowledge: students are followers of their teachers, and they absorb knowledge from their teachers. Learning is a disciplinary, receiving, and socializing process such that close supervision and control on the

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