Chapter 3

School on the Cloud: Paradigm Shifts and Educational Changes

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ABSTRACT

In order for the educational system to meet its future needs, several requirements must be fulfilled. There is a need to be an efficient and effective teaching and learning operating system, an appropriate to the future conditions teaching environment, an acceptable set of methodological tools and, because of these, a suitable classroom environment. These requirements represent the major components of the education paradigm been in effect every time, which, in the last few years, has shifted from the Individual/Traditional, to the Group/Progressive, and finally to the Community/School on the Cloud paradigm. In addition, changes in the components of each paradigm have resulted in changes in the corresponding school model, from the Traditional, to the Progressive and finally to the School on the Cloud model. The goal of this chapter is to present and evaluate all these shifts, which are of paramount importance to future teaching and learning.

INTRODUCTION

A major concern of education has always been the future of teaching and learning and, as a result, it has to address educational issues related to the future (Fullan & Langworthy, 2014). Yet, despite the rapid changes and the increasing complexity of today’s world and mainly its projection of the future, which creates new challenges and imposes new demands, the education system has not responded properly. As Wellman (2015) has written, “At this point we appear to have a 19th Century curriculum, 20th Century buildings and organizations and 21st Century students facing an undefined future”. Therefore, the education system needs to concentrate on addressing the changes that the future will bring, by changing the ways teaching and learning are conducted, by considering these changes.

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It should be self-evident that in order to understand the issues that underline the future of the teaching and learning system, there is a need to understand the major areas affecting it as well as the intricate interdependencies and interactions between them. Therefore, the logical step to take is to examine the shifts that took place in the teaching and learning system as well as to understand the basic issues related to the changes of the educational system and its future. These are examined next.

PARADIGM SHIFTS

At the onset, it should be pointed out that the advent of ICT technology, in the form of Cloud Computing, has opened new educational thresholds to get and utilize data, information and knowledge on an individual, group and education community level, and mainly to teach and learn them in our schools. As a result, the way we view and apply education has altered, following changes introduced to the education system, representing what Kuhn (1962) has called paradigm shifts. A brief presentation of these shifts follows (a more detailed examination can be found in Koutsopoulos & Kotsanis (2014).

Individual or Traditional Paradigm

The first and long-lasting paradigm was the Individual or Traditional one, which has been characterized by face-to-face or individual teaching and learning, where the teacher, in a mono-disciplinary way, was instructing 20, 30 or even 40 students at once. These students were passive listeners. However, the actual educational process was taking place on an individual basis, since each child was learning alone and seeking solutions to problems, which unfortunately they did not identify or considered as important or meaningful.

Group or Progressive Paradigm

The first shift in education led to the Group or Progressive paradigm, which is still operating and characterized by a multidisciplinary educational environment. It provides students with collective learning experiences resulting from various forms of learning relationships, which are the result of interactions between learners and content, learners and learners and learners and teachers. In other words, it provides in-group teaching and learning (Anderson, 2003; Godwin & Kaplan, 2008, Kalantzis & Cope, 2010).

Community or School on the Cloud Paradigm

The second shift is taking place now. The previous paradigms can no longer be widely applied (Jonassen & Yueh, 1998; Koutsopoulos & Kotsanis, 2014). It is suggested that an integrated approach, requiring the participation of all educational factors and stakeholders is necessary, representing the Community or School on the Cloud paradigm. This paradigm simultaneously takes into account cultural, pedagogical, technical/technological, administrative, social and political factors in a holistic approach, an integral part of which are the basic education stakeholders (i.e., students, teachers and school administrators).