

Chapter 21

Could Educational Technology Replace Traditional Schools in the Future?

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ABSTRACT

This chapter begins by quoting Professor Wilcox noting that little had changed in schooling over the past 500 years. This chapter provides examples of how the world has changed due to globalization and e-learning becoming mainstream, the changing needs and aspirations of the current generation of learners, and the rapid development of new technologies to assist learning. All of the examples quoted suggest that traditional face-to-face schooling will change. The economic and social survival of nations depends on the quality of education of its people, so some form of compulsory schooling will be needed, be it virtual or not.

INTRODUCTION

During a recent presentation, Professor Karen Willcox, Professor of Aeronautics and Astronautics and co-Director of the Centre for Computational Engineering at the Massachusetts Institute of Technology, showed a painting of a university classroom in the Middle Ages with a teacher on a podium at the front of a room lecturing to a group of students, one of whom was asleep. Her next picture was of a twenty first century classroom with a teacher at the front lecturing to students, some of whom appeared to be uninterested. Her point was that little has changed in university classrooms for centuries, yet the affordances of e-learning suggest that university education could change more in the next fifty years than any change in the previous five hundred years.

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BACKGROUND

The scenario portrayed above is also visible in the compulsory schooling sector where the majority of compulsory education still occurs in classrooms with a teacher, but it could be argued that technology-induced change is already occurring. Information and communication technology has penetrated even the most remote schools in developed countries and is infiltrating schools in some of the least developed countries in the world. Futurists have predicted the demise of many brick and mortar universities resulting from the affordances of technology that allow learning to occur anytime, anywhere and in whatever format the learner desires. What of bricks and mortar schools? The growth of virtual education is not limited to adult education, schools are already incorporating virtual education into their educational programmes and some parents are opting for home based virtual education in preference to traditional schooling. Marketing of educational technology has attracted some of the biggest names in business and the education market has become an important component of the world economy, so change is inevitable.

The presence of technology in a classroom should not be seen as an indicator of change in the learning process; the early use of computers in schools was merely replacing teacher instruction with computer instruction, termed programmed learning. In both cases the instruction was top down, based on the view that the teacher or computer programmer was the font of knowledge whose task was to deliver information for the student to memorise. This instructional process can be useful for the delivery of some learning, such as presenting factual information, but the exponential growth of knowledge resulting since the computer revolution began, and the ease of access to that knowledge via technology, makes knowledge transmission possible without the need for a teacher in a classroom. It is easier to keep a computer up to date with the latest knowledge than to keep a teacher up to date. So what is driving changes to the form of schooling as it has traditionally been known?

Changes to Schooling

Globalisation has changed the range of knowledge, skills and dispositions required for a satisfying and productive life. Traditional employment areas such as book-keeping have all but disappeared, new vocations such as mainframe computer engineers were created and then outlived their usefulness, and the world economy has lurched from one crisis to another due to influences beyond the control of any one individual. Soft skills are now needed to compete in a rapidly changing world and education must adapt to meet these changes.

Learners have changed too. The so-called Generation Z students are now in compulsory schooling. There is a debate about the definition of Generation Z. Geck (2006) indicated that the term is used to describe the students who born in or after 1990, Shatto and Erwin (2016) stated that Generation Z follows the Millennials, while Seemiller and Grace (2016) said Generation Z's students were born between 1995 and 2010. According to Seemiller and Grace (2016), Generation Z students are "loyal, thoughtful, compassionate, open-minded, and responsible" (p. 8). Viewed from family perspectives, Seemiller and Grace suggest that the personality characteristics of Generation Z are unique, because Generation Z students are raised by Generation X parents with an emphasis on individual responsibility and independence.

Although the dates that define Generation Z may differ, scholars have reached consensus that the world of Generation Z is shaped by the internet (Bassiouni, & Hackley, 2014). Generation Z are the first generation to spend the whole of their life in a world dominated by social media use. Viewed from

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