Chapter 44
Blended Learning and Technological Development in Teaching and Learning

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ABSTRACT

This chapter examines blended learning and technological development in teaching and learning. This study is based around the suggestion that technological development can emerge in Nigeria when an enabling environment and other necessary facilities for blended learning are made available in different institutions for teaching and learning. This chapter addresses the following topics: net generation and use of technology outside of schools, the digital environment, computer use and blended learning in schools, well-constructed digital environments, teaching and blended learning, the shift from teaching to learning, student-centered methods, theories supporting the new view of the learning process, play way method, group instructional methods, Vygotsky's socio-cultural theory, Skinner's theory of learning, Jean Piaget, Jerome Bruner, problem-based learning, anchored instruction, distributed cognition, cognition flexibility theory, cognitive apprenticeship, situated learning, self-regulated learning, and entry behaviour/residual knowledge.

INTRODUCTION

Blended technology-aided learning, as distinct from learning about technology, has the capacity to transform learning environments in ways that are still difficult for most educators to imagine (Ololube, 2011). Although children in today's schools have only known the digital world, many adults continue to experience great difficulty using basic computer functions such as email, search engines, and presentation software (Ololube, 2009). For the first time in human history, the young are thus more confident with and fluent in the dominant technologies of the day, than the adults charged to teach them.

Blended learning is regarded as a new concept in developing countries like Nigeria, although it is a concept that will greatly facilitate programme development in technology. Ausburn (2002) argues that the demand for mass customization of Technology-Based Learning (TBL) will require a shift from traditional models of instructional design and development to the new blended learning which brings together the traditional model and the ICTs that can lead to technological development in teaching and learning. This blended learning is in fact central to new and emerging paradigms of education. In this paper, blended learning is defined as the combination of different learning strategies to reposition learners for an optimal future in a technological society.

We live in a high-speed, wired world, where digital technology is interwoven into the fabric of our lives and our society. It is part of out homes, our businesses and our schools. Tapscott (1999) asserts that we need to look to youth in relation to how best to use technology in education. He refers to youth as the Net Generation or N-Geners – the first generation to grow up surrounded by digital media and to assume that it is part of the natural landscape of life (p.7).

Prensky (2001) refers to young people today as Digital Natives for they are "all native speakers" of the digital language of computers, video games and the Internet (p. 1). Those who entered and adopted this networked, digital world, in other words those who were not born into it, are deemed Digital Immigrants (Pensky, 2001). Ololube et al. (2012) and Prensky (2001) notes that there are important, never-before seen differences between Digital Natives and Digital Immigrants and that the new abilities, skills and preferences of the former are to a large extent misunderstood or ignored by the current generation of educators. These educators are, at the same time, being challenged to think differently about teaching and learning with technology.

Preparing teachers for 21st century blended learning requires a close look at what it means to teach and learn in increasing networked, technology-rich, digital classrooms, e-libraries, and auto-CAD rooms (Ololube & Egbezor, 2009). Teacher preparation programs need to create intentional learning environments where pre-service teachers can explore relevant issues and develop pedagogies that are effective for an era of blended learning. These teachers need an opportunity to develop new images and expertise to design and facilitate meaningful technology-aided blended learning (Ololube, 2011).

NET GENERATION AND USE OF TECHNOLOGY OUTSIDE OF SCHOOLS

Growing up with digital media and the Internet has resulted in the Net generation's ubiquitous use of new technologies. Youth do not necessarily approach digital media and network technologies as add-ons in their worlds, but rather as integral components of their world. Thus, according to Tapscott (1999), youth use the Internet to manage their personal finances, organize protest movements, check facts, discuss issues, check the scores of their favourite team and chat online with its superstars, organize groups, cast votes, learn more about illnesses, attend a virtual birthday party, or get video clips from a soon-to-be-released movie (p.7).

In a study by The Future of Children (2000), 72 children ages 5 to 18 were surveyed from Plugged In and The Computer Clubhouse in late 1999 and early 2000. These children reported participating in a variety of computer-based activities associated with blended learning including traditional educational

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