Chapter 15
Computer–Driven Technologies for Effective Teaching in K–12 Classrooms in Nigeria

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ABSTRACT

The world is changing and so is the educational sector. The major driver of this change is technological advancements, so it is imperative that educators investigate ways to prepare students to fit into the 21st century technology-driven workforce by adopting digital alternatives to the pens and books that still dominate present-day classroom resources, especially in developing countries. This chapter discusses the importance of computer-driven technologies in teaching. In doing so, this chapter highlights the present situation of technology integration in schools in Nigeria and the challenges teachers face in their use of classroom technologies. It is the author's opinion that teachers have a responsibility to pursue personal professional development in addition to whatever kind of training provided on the job. This chapter intends to help educators learn how to leverage free digital tools to support and meet the needs of diverse learners in the classroom.

INTRODUCTION

The world is changing, and so is the educational sector. Computers have changed the way society functions, and this has been the major driver of technological advancements in many societies. The present generation will therefore need to be abreast with the growing trends of a technologically driven society that relies on computers to perform daily tasks. The classroom is a good starting point to learn how to use these technologies. Technology has always been part of the teaching and learning environment; even in the traditional classroom, there has always been one form of technology or the other. The ubiquitous nature, at least for some, of technology is continuing to change society at an unprecedented rate, and

the society that students are leaving the classroom into is very a different society than the one for which we are preparing them. The education system globally no longer considers the integration of computer-driven technology in the classroom a debatable issue. The need for teachers and students alike to know how to use these technologies is a key requirement today.

With the rate of technological advancements in the recent decade, it is imperative that educators investigate ways to prepare students for the 21st century technology-driven workforce by adopting digital alternatives to the pens and books that still dominate our classroom resources. The present workforce operates on an almost paperless workplace. Thus, educators' teachings need to reflect the world that students are entering. There is a need to investigate ways of digitizing classroom tasks. This means that educators need the relevant digital skills that can help them seamlessly blend in and leverage the power of computer-driven technologies to improve both teaching and learning.

Nigeria has been on the negative divide when it comes to use of technology in the secondary schools (Damkor, et al, 2015) although through the years, the country has seen efforts by various state government to integrate computer-driven technology in secondary schools – either for educational processes or for administrational purposes. Despite these sparse efforts, as a nation, the country has not made significant efforts the in integration of computer technology in secondary schools. Adoption rates of technology have been very low, especially in government-owned secondary schools. A great deal of instructional and administrative work in secondary schools in Nigeria is still being carried out manually. Technology is ever-changing, and educators should not leave their students behind. Technology integration has been said to be the use of technology resources – computers, mobile devices like smartphones and tablets, digital cameras, social media platforms and networks, software applications, the Internet, etc. – in daily classroom practices. It's up to educators to find the best ways to integrate technology in fulfilling curriculum requirements; many useful technologies are available off the shelf, some even for free.

One of the major constraints to technology integration, especially in developing countries, has been budget. Technology integration in the classroom doesn't have to be expensive. There is a plethora of programs and tools that provide improved functionality to what traditional resources enable educators to do, providing a new level of affordability and leverage and enabling things almost impossible to do in the classroom using the traditional pedagogy. Technology is providing a whole new experience for both teachers and students. Examples of such tools will be highlighted in the discussion. This chapter will demonstrate how these tools can be used to redefine educators' regular activities in the teaching and learning process. The chapter therefore intends to help educators realize the need for professional development in the use of computer-driven technologies and learn how to leverage free digital tools to support and meet the needs of diverse learners in the classroom.

BACKGROUND

According to Koopman (2014), many of the gaps in education in developing countries can be bridged with the help of ICTs, which can enhance capacities for creating, sharing, and using information and educational materials. Despite the recognized role of computer-driven technologies in improving education, these technologies remain a low financial priority in most educational systems in Africa. The reason can be amounted to the fact that most countries in the region lack resources for sustainable integration

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