Chapter 9
Transformation of Quality Education Through E-Learning for Sustainable Development

Sumit Pathak
Sharda University, India

Vishal Jain
https://orcid.org/0000-0003-1126-7424
Sharda University, India

ABSTRACT

Education is already hovering on the edge of the Education 4.0 revolution fueled by technology integration and student participation. Therefore, Education 4.0 eliminates rigid structures, lectures and focuses on teachers as Education 4.0 is meant for digital generation providing a flexible learning process that is continuous. Central to this shift is the Smart Hybrid Learning System, which brings together models such as the Challenge Based learning and the Case Based learning in dynamic online environments. Enhancing learning solution; online learning platforms, LMS, AI, IoT provide rich engagement solutions. Today's school structures fail to capture such changing needs, which puts emphasis on old fashioned approaches. Such classroom practices as the flipped and smart classroom helps overcome these gaps but issues with implementation is still an issue with issues to do with infrastructure and digital divide. Education 4.0 is the strategic direction towards mass, choice and flexibility for learning in the era of volatility.

DOI: 10.4018/979-8-3693-8252-3.ch009

1. INTRODUCTION

1.1 Overview of e-Learning in Education

E-learning has revolutionized the overall process of knowledge transmission or acquisition, changing the face of education altogether (Allen & Seaman, 2017; Christensen, Horn, & Johnson, 2011). It interacts with a digital approach in offering flexible and accessible learning experiences that are interactive through technology (Anderson & Dron, 2018; Dziuban, Graham, Moskal, Norberg, & Sicilia, 2018). E-learning has terminated geography and time barriers and democratized education for a greater number than was ever conceived previously (Bonk & Graham, 2012; Huang et al., 2020).

E-learning simply refers to a wide range of quite different digital tools and platforms that can support learning. Such digital tools and platforms may include online courses, virtual classes, education apps, and so on (Bates, 2019; Garrison, 2017). Since e-learning provides much more flexibility, it therefore offers much better chances for pupils by catering to different learning styles and paces, consequently providing more personable learning experiences compared to the classroom setting (Hrastinski, 2019; Martin & Bolliger, 2018; Sun et al., 2008).

1.2 Evolution of Digital Learning Platforms

The strides of digital learning platforms have been characterized by high-tech development and academic paradigm shifts (Castañeda & Selwyn, 2018; Redecker, 2017). From mere computer-based training modules, it has journeyed to being highly sophisticated and AI-driven learning ecosystems (Gašević, Dawson, & Siemens, 2015; Kizilcec et al., 2020).

Early digital learning environments were characteristically about the presentation of content—the computer-based version of the paper-based textbook (Bates, 2019; Clark & Mayer, 2016). Over time, these systems have included interactive content, multimedia, and assessments. Learning Management Systems (LMS) are an environment that could be described as being developed primarily in the late 1990s and early 2000s—a central place for managing a course and a way to engage students (Bonk & Graham, 2012; Moore, Dickson-Deane, & Galyen, 2011).

MOOCs, or massive open online courses, that came forth in the 2010s also changed the e-learning landscape because it became possible to access high-class educational resources from top-ranked institutions across the world for free or at low cost (Joksimović et al., 2018; Reich & Ruipérez-Valiente, 2019). Last but not least, adaptive learning technologies and AI only recently made it possible to have real personalized learning experiences whereby content and pace can be tailored