

Chapter 10

Understanding the Cognitive Constituents of E–Learning

Swati Sharma

 <https://orcid.org/0000-0001-7727-1675>

Indian Institute of Technology, Jodhpur, India

Deepak Kumar Saxena

 <https://orcid.org/0000-0002-9331-3799>

Indian Institute of Technology, Jodhpur, India

ABSTRACT

With the rapid development of ICT, E-learning has experienced exponential growth and drastic transformation in past years (Yao et al, 2022). E-learning works on the model of virtual education. There are different formats, like fully online learning, hybrid learning model which uses the combination of in-person and online components, and Massive Open Online Courses (MOOCs) which enable course engagement across the globe. The domain explores innovative pedagogical approaches. This chapter discusses various formats such as fully online courses, blended learning models, and Massive Open Online Courses (MOOCs). It explores innovative pedagogical approaches, popular theories and adaptive technologies to cater to diverse learning styles, based on cognitive science principles. Chapter further highlights e-learning, its growth and transformation due to advancements in Information and Communication Technology (ICT) and important theoretical frameworks to understand the various components of e-learning. At the end of this chapter, challenges and future research directions are discussed.

DOI: 10.4018/979-8-3693-4407-1.ch010

INTRODUCTION

E-learning or online learning is a dynamic field that includes a diverse set of educational activities and resources delivery systems using digital platforms. It works on the idea of making learning accessible beyond the constraints of traditional classrooms which made it popular among educators during the time of pandemic. Online learning works in different formats based on the vision and requirement of the course. Online classes were extensively used by schools and universities during the time of COVID-19 pandemic when all education institutes were closed (Wlodarczyk et al., 2021). Consequently, it became the primary teaching and learning approach (Anderson et al., 2020). This mode of learning saved the students from their academic loss. Different names have been used in literature discussing online learning such as e-learning, blended learning, virtual learning, remote education, online education, web-based education, web-based instruction and online courses (Singh and Thurman, 2019). In fully online format, learning is dependent only on online platform content delivery. It can be a real-time class or a recorded lecture. Hybrid learning models use both in-person and online components for the delivery of content. Fully online learning involves synchronous or asynchronous classes conducted entirely over the internet, while hybrid online learning combines both online and onsite teaching, engaging students in both environments simultaneously (Mark et al, 2022). Research indicates that fully online courses can effectively maintain student performance, as seen in graduate microbiology coursework where students performed similarly across various online modalities (Davie, 2022). Massive Open Online Courses (MOOCs) is another popular format of e-learning. They have made their own mark in the domain of popular methods of online learning using both computer systems and mobile devices (Fidalgo-Blanco et al, 2016). These courses allow people from all over the world to participate, irrespective of their geographical location and time. This mode of e-learning increases the feasibility of accessing the content of learning at learner's flexibility and offers ease of use to participants. MOOCs are not just for school or university students, they are open to everyone. The domain of e-learning is continuously evolving. With each passing year, new teaching methods are being developed. The flexibility of the online presence makes it easy to use for learners. Anyone from any age group can start learning at any moment from the comfort of their home. It uses engaging multimedia content and advanced technologies that serve different participants and their learning styles. It has also become a great online medium for different skill development and hobby classes. Online learning has removed the constraint of geographical boundaries (Yu, 2022). All you need is a laptop, tablet, or mobile phone with a stable internet connection. You can access quality lectures on any domain or topic, have advanced vocational training to enhance your career profile, and use it for your skill development anywhere in the world. Online learn-

34 more pages are available in the full version of this document, which may be purchased using the "Add to Cart" button on the publisher's webpage: www.igi-global.com/chapter/understanding-the-cognitive-constituents-of-e-learning/361788

Related Content

Sustainability Competency Framework: A Practical Guide for Re-Orienting Higher Education Curricula

Peter Ngwaand Awono Mengada Gisèle Xaverie (2025). *Creating Dynamic Space in Higher Education: Modern Shifts in Policy, Competencies, and Governance* (pp. 313-346).

www.irma-international.org/chapter/sustainability-competency-framework/361991

The Public Institution Presidency: Navigating the Legislature

Arleene P. Breaux (2021). *Handbook of Research on the Changing Role of College and University Leadership* (pp. 296-312).

www.irma-international.org/chapter/the-public-institution-presidency/276613

A Muddied Journey: An Early Childhood Educator's Path Into Building Successful Family Partnerships

Cherie Crosby (2020). *Cases on Strategic Partnerships for Resilient Communities and Schools* (pp. 59-77).

www.irma-international.org/chapter/a-muddied-journey/255878

Leading During a Crisis: A Case Study of College Presidents During Unprecedented Times

Derrick Mannsand Stanton McNeely (2021). *Handbook of Research on the Changing Role of College and University Leadership* (pp. 102-119).

www.irma-international.org/chapter/leading-during-a-crisis/276601

Gender, Education, and Careerism: The Recurring "Conflict" Between Ovaries and Brains in the 19th and Early 20th Centuries

Omar Swartzand Candace Nunag Tardío (2021). *Emerging Strategies for Public Education Reform* (pp. 235-252).

www.irma-international.org/chapter/gender-education-and-careerism/272863