

## Chapter 8

# Digital Educational Neuropsychology: Challenges and Opportunities

**Mimansa Mudgil**

 <https://orcid.org/0009-0000-1798-1261>

Christ University, India

**Vanshika Chutani**

Christ University, India

### **ABSTRACT**

*This chapter introduces the various facets of digital educational neuropsychology. It begins by explaining digital educational neuropsychology and the current practices in digital neuropsychology. It then explains the opportunities and the challenges faced by neuropsychology in digitization of neuropsychology education, training, assessment, and rehabilitation and how it can be improved. The challenges in the implementation of digital educational neuropsychology in terms of access and equity; validity and reliability of digital assessments; training and professional development; variability in the perceptual, motor, and cognitive demands across different devices; and the rapid changes in technology are explained elaborately. A full discussion on opportunities including enhancement of digital education using neuropsychological techniques, neuroscience experimental techniques, in tandem with behavioural measures is provided. Further, the importance of collaborative effort from professionals is required to build more effective strategies for digital education is emphasized.*

DOI: 10.4018/979-8-3693-2314-4.ch008

## **INTRODUCTION**

This section of the chapter introduces and explains the basic terminologies that will be used throughout the chapter. Later, it covers the importance of the field of neuropsychology, the need for technological integration in the field, the role of the pandemic, and the current status of technology in neuropsychology education, training, assessment, and rehabilitation.

### **Neuropsychology as a Discipline and Its Importance**

Psychology is the study of mind and behavior (APA, 2023). Neuropsychology is the scientific and systematic study of the physiological processes of the nervous system that relates them to behavior and cognition. It studies behavior and cognition in terms of both normal functioning and dysfunctional processes associated with brain damage (APA, 2023). Neuropsychology is a vast discipline involving teaching, education, assessment, and rehabilitation. It is a booming field rich in its practical applications and empirical underpinnings.

Neuropsychology studies the cerebral functions related to cognitive functioning from infancy to late adulthood. It understands the implications of the developmental functions on the behavior and the effect of the environmental and biochemical disruptions on the brain functioning (Martinez-Alvarez, 2018). Therefore, it can be implicated that the evolving scientific research on the brain and its relationship with cognitive processes provide a breakthrough in educational learning.

### **Need for Technological Integration in Neuropsychology**

The growth of neuropsychology as a discipline also depends on the quality and accessibility of education and knowledge to mankind. Educational practices in the profession of neuropsychology are essential for its future. Teaching and supervision are the core skills of neuropsychologists. In purview of this fact, recently there have been developments in the taxonomy of education and training in neuropsychology and in supervision guidelines, practicum, and postdoctoral training (Nelson et al., 2015; Stucky et al., 2010).

Despite the advances in the field, research suggests that using digital technology to deliver brain-behavior education to trainees effectively is still something that needs to be catered to in the field. Therefore, there is an increasing interest in digitization of neuropsychological assessments and education (Bilder & Reise, 2019; Loring et al., 2021).

8 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/digital-educational-neuropsychology/336517](http://www.igi-global.com/chapter/digital-educational-neuropsychology/336517)

## Related Content

---

### Institutional Investors' Representativeness and Earnings Management: Evidence From a High Ownership Concentration Context

Pietro Fera, Nicola Moscariello, Michele Pizzo and Giorgio Ricciardi (2021).

*Comparative Research on Earnings Management, Corporate Governance, and Economic Value* (pp. 27-45).

[www.irma-international.org/chapter/institutional-investors-representativeness-and-earnings-management/272604](http://www.irma-international.org/chapter/institutional-investors-representativeness-and-earnings-management/272604)

### Online Learning or Emergency Remote Teaching?: Reflections on Online Learning as Pedagogical Innovation in a Higher Education Institution

João Emílio Alves, Adelaide Marques Proença, Alexandre Cotovio Martins, Sofia Maria Veríssimo, Isabel Mourato and Helena Carrilho Morgado (2022).

*Interdisciplinary and Practical Approaches to Managerial Education and Training* (pp. 147-173).

[www.irma-international.org/chapter/online-learning-or-emergency-remote-teaching/300880](http://www.irma-international.org/chapter/online-learning-or-emergency-remote-teaching/300880)

### The Hierarchy of Managers' Personal Values and Universal Management Attributes: Empirical Evidence From Austria, Poland, and Slovenia

Zlatko Nedelko, Maciej Brzozowski and Pawe Bartkowiak (2020). *Recent Advances in the Roles of Cultural and Personal Values in Organizational Behavior* (pp. 152-166).

[www.irma-international.org/chapter/the-hierarchy-of-managers-personal-values-and-universal-management-attributes/235676](http://www.irma-international.org/chapter/the-hierarchy-of-managers-personal-values-and-universal-management-attributes/235676)

### Influence of Positioning Strategy and Relationship Marketing Towards Brand Imaging

Muhammad Ismail (2021). *International Journal of Applied Management Theory and Research* (pp. 32-52).

[www.irma-international.org/article/influence-of-positioning-strategy-and-relationship-marketing-towards-brand-imaging/268898](http://www.irma-international.org/article/influence-of-positioning-strategy-and-relationship-marketing-towards-brand-imaging/268898)

## COVID-19 and the Tourism Industry: Effects, Analysis, and Policy Implications

Vikramaditya Kumar Taneja and Pratap Chandra Mandal (2022). *International Journal of Applied Management Theory and Research* (pp. 1-16).

[www.irma-international.org/article/covid-19-and-the-tourism-industry/300344](http://www.irma-international.org/article/covid-19-and-the-tourism-industry/300344)