

# Chapter 14

## Understanding Chatbots in the Context of Curriculum Management in Institutions of Higher Learning: Challenges and Opportunities

Annie Mojaesi Moletsane

 <https://orcid.org/0000-0001-6765-0209>

Vaal University of Technology, South Africa

### ABSTRACT

*This literature-based paper examines the application of chatbots in curriculum management in educational settings, aiming to explore their benefits, challenges, and future potential. Findings show that chatbots, enhanced by AI, machine learning, and NLP, streamline administrative processes, support student engagement, and enable effective communication among stakeholders. Despite these advantages, challenges such as data privacy and technical limitations persist. The chapter concludes that, with ethical practices and AI advancements, chatbots could significantly reshape educational management. Recommendations focus on personalization, ethical guidelines, and ongoing technology integration for optimized outcomes.*

DOI: 10.4018/979-8-3693-8734-4.ch014

## **BACKGROUND**

Globally, chatbots, predominantly those that are manipulated and guided by Natural Language Processing (NLP) models are rapidly dominating higher institutions of learning into technologically innovative education in terms of educational transformation. ChatGPT, is one of such innovations that has brought about rapid changes in schools including curriculum management and implementation to enhance educational practices. As these systems evolve, they offer personalized learning experiences by tailoring content, activities, and assessments to the needs of individual students, potentially improving academic engagement and outcomes (Wu, 2017). NLP models are currently associated with on-demand support, during the teaching and learning process whereby students are engaged at their convenience. This has proved valuable particularly valuable in online and independent learning contexts

Despite these technological advancements in Intuitions of Higher learning, challenges are still common whereby both teachers and learners run the risk of over-reliance on technology, which may hinder the development of critical thinking skills. Additionally, concerns about the accuracy of AI models, especially in interpreting complex language remain a key issue. Institutions must balance the benefits of AI integration with thoughtful oversight to ensure that these tools enhance rather than replace essential cognitive skills

## **CHATBOTS IN CURRICULUM DELIVERY AND EDUCATIONAL ENGAGEMENT**

One of the primary and remarkable roles of chatbots in curriculum management is their capacity to deliver course content and engage students in interactive learning experiences. As Jung et al. (2020) highlight, chatbots serve as interactive tools in higher education, offering personalized interactions that can drive student engagement. Chatbots, when integrated into curriculum delivery systems, can assist in making learning materials accessible and provide immediate feedback to students. These interactions are particularly effective in large classes, where individual attention from instructors is limited.

The effectiveness of chatbots in educational contexts is further supported by Smutny and Schreiberova (2020), who found that chatbots automate administrative tasks such as answering student queries, thus freeing up time for educators to focus on complex pedagogical tasks. Chatbots enhance engagement by providing students with immediate access to learning resources and assisting in self-regulated learning. The automation of routine inquiries also ensures that students receive timely feedback, which contributes to better retention and understanding of course content.

26 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-chatbots-in-the-context-of-curriculum-management-in-institutions-of-higher-learning/371563](http://www.igi-global.com/chapter/understanding-chatbots-in-the-context-of-curriculum-management-in-institutions-of-higher-learning/371563)

## Related Content

---

### Cultural Bias and Its Implications for Discipline Disparity

Wilsando Seegars (2022). *Approaching Disparities in School Discipline: Theory, Research, Practice, and Social Change* (pp. 1-22).

[www.irma-international.org/chapter/cultural-bias-and-its-implications-for-discipline-disparity/311607](http://www.irma-international.org/chapter/cultural-bias-and-its-implications-for-discipline-disparity/311607)

### The Challenge of Leadership in Higher Education in an Age of Disruption

(2026). *Strategic Choices and Leadership Change in Higher Education Institutions* (pp. 1-24).

[www.irma-international.org/chapter/the-challenge-of-leadership-in-higher-education-in-an-age-of-disruption/395115](http://www.irma-international.org/chapter/the-challenge-of-leadership-in-higher-education-in-an-age-of-disruption/395115)

### Enhancing Adult Online Learners' Graduate Leadership Experiences Through the Lens of Care Theory

Carrie M. Grimes (2025). *Best Practices and Strategies for Online Instructors: Insights From Higher Education Online Faculty* (pp. 167-194).

[www.irma-international.org/chapter/enhancing-adult-online-learners-graduate-leadership-experiences-through-the-lens-of-care-theory/361784](http://www.irma-international.org/chapter/enhancing-adult-online-learners-graduate-leadership-experiences-through-the-lens-of-care-theory/361784)

### The Development of Professional Identity and Its Associations With Emotions: An Empirical Study of University EAP Teachers With Diverse Ethnic Backgrounds

Zhenying Shi, Yunyan Zhang and Rong Yan (2024). *Developments and Future Trends in Transnational Higher Education Leadership* (pp. 85-120).

[www.irma-international.org/chapter/the-development-of-professional-identity-and-its-associations-with-emotions/350663](http://www.irma-international.org/chapter/the-development-of-professional-identity-and-its-associations-with-emotions/350663)

## **Building Coaching Capacity Within Aspiring School Leaders**

Marco Nava, Delia Estrada, Jose Rodriguez, Daniel Kim, Lee Lee Chouand Jeanne Gamba (2024). *Pursuing Equity and Success for Marginalized Educational Leaders* (pp. 1-16).

[www.irma-international.org/chapter/building-coaching-capacity-within-aspiring-school-leaders/339951](http://www.irma-international.org/chapter/building-coaching-capacity-within-aspiring-school-leaders/339951)