


Chapter 4

Leveraging Educational Artificial Intelligence in Personal Language Learning Environments: Early Childhood and Primary Education

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ABSTRACT

This article explores the implications of Artificial Intelligence (AI) in the personalisation of language learning in early childhood and primary education. The idea is to adapt educational content to meet the individual needs of students based on their knowledge, skills, and interests. Students with different profiles present a challenge that requires us to explore the possibilities of AI so that each student receives an individualised learning plan tailored to their knowledge and needs. This work focuses on educational AI to provide solutions and adapt language teaching methods to the abilities and rhythms of each student, thereby improving their cognitive-emotional experience, despite doubts about the impact of these innovations. This technology could help teachers to develop special learning content to provide real-time interaction and feedback, the potential to implement virtual environments and multimodal formats to make knowledge more appealing and accessible.

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INTRODUCTION

The use of Artificial Intelligence in education is increasingly capturing the attention of educators due to the opportunities it offers for teaching and learning various subjects. The results of the review conducted by Chen et al. (2022) reveal the growing interest of the academic community in the use of Educational Artificial Intelligence (EAI), particularly in topics related to natural language processing for language teaching and recommendation systems for personalized learning. This interest brings many unanswered questions, for example, how AI affects human beings and society. Many questions seek answers about how to educate children in the digital age (equity, safety, ethics, responsibility) or the changes necessary to adapt and thrive better in the era of AI (Lee et al., 2024).

AI raises doubts and concerns in the context of the education of children and young people, especially due to their vulnerability in terms of the affective-emotional and cognitive impact (Ruiz-Ortega, 2023). In fact, UNICEF (2021) published the document, *Policy Guidance on the Use of Artificial Intelligence*, for Children to serve as a guide for policymakers and AI developers to safeguard and advance the rights of children in the development and application of it. This publication is based on the *Convention on the Rights of the Child* (1989), whose fundamental principles focused on non-discrimination, the best interests of the child, the right to life, survival, development and child participation. The Convention also established civil, political, economic, social, and cultural rights for children, such as the right to education, protection against abuse and exploitation and the obligation for them to receive care and support. The countries that signed the treaty thus committed to taking measures to guarantee and promote these principles and rights.

The report published by Tuomi (2018) in the European Union, *The Impact of Artificial Intelligence on Learning, Teaching, and Education*, describes the state of AI at that time and analyses the possible impact of AI on teaching-learning and education, including emotional and cognitive aspects. This report considers the opportunities offered by the development of AI, but it also provides conceptual foundations for work, research, and future activities aimed at managing the challenges of this technology.

Some research, such as that of Ahmad et al. (2021), reflects on the application of AI to tackle the challenges of our era regarding access and quality in education. They focus on the role of AI and how this technology could provide solutions to problems such as the lack of access to education. Therefore, an alignment with the Goals of the 2030 Agenda is distinguished.

In higher education, there are preoccupations about integrity and academic plagiarism (McCarthy, 2022). Therefore, about the authenticity of the achievements obtained by students (Sutherland-Smith, 2020) and the ethical challenges faced by

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