8th World Conference on Teaching and Education

06 - 08 June 2025 Cambridge, United Kingdom

WORLDCTE
World Conference on TEACHING & EDUCATION

Impact of Didactic Transposition on Learning Biological Science in Moroccan High Schools: The Case of Mineral Nutrition in Plants

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Abstract

Morocco has been making significant efforts to enhance the quality of its various sectors, particularly education. Despite these efforts, the sector continues to face a persistent decline. Statistical studies highlight discrepancies between the intended curriculum implementation and the actual teaching practices observed in classrooms. Additionally, the weak academic proficiency of students and their limited ability to acquire essential scientific skills further exacerbate the issue. This study, conducted among 100 life and earth sciences teachers across several Moroccan secondary schools and 80 high school students, examines these challenges. It identifies inconsistencies in pedagogical approaches and the gaps between the prescribed and enacted curriculum. The research further explores how educational technologies and didactic transposition can bridge these gaps and improve learning outcomes. Taking the lesson on mineral nutrition in chlorophyllous plants as a case study, this paper proposes actionable solutions tailored to the realities of Moroccan public schools, considering advancements in educational technology. The findings aim to contribute to a more effective integration of innovative teaching methods to enhance student engagement and comprehension in the life and earth sciences.

Keywords: applied didactics; curriculum adaptation; educational technologies; ICT; life and earth sciences