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Design of a Python programming course by big ideas with a STEM approach

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[Sánchez-Gómez, Juan Sebastián](#) [✉](#); [Catalina Ramirez Cajiao, María](#) [✉](#)

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Abstract

Educational programs for migrants in Science, Technology, Engineering, and Mathematics (STEM) have traditionally been offered to adults, to facilitate their social and labor insertion. However, migrant children and youth have been made invisible, ignoring the effects of migration on their educational processes. The funds of knowledge acquired by these children and young people during their migratory trajectory have not been taken advantage of in the countries of destination. In this context, this article presents the design of a Python programming course by big ideas approach for Venezuelan migrant children and youth in Colombia, Mexico, and Peru. The instructional design with a big ideas approach is followed to define three big ideas with their respective learning objectives, teaching methodologies, and evaluation. An online and hybrid course is designed, called "First Steps of Migrants in Python with STEM Approach" which seeks to provide basic Python programming concepts and tools to develop computer programs. It is expected to develop enduring understandings focused on the development of technological projects with a STEM approach that uses computational thinking to enable migrant children and youth to solve everyday problems during their migration path. © 2024 Latin American and Caribbean Consortium of Engineering Institutions. All rights reserved.

Author keywords

big ideas; blearning; curricular design; migrants; STEM

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Abstract

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