

Implementation and training of primary education teachers in computational thinking: a systematic review

Ortuño Meseguer, G., & Serrano, J. L. (2024). Implementation and training of primary education teachers in computational thinking: a systematic review. [Implementación y formación del profesorado de educación primaria en pensamiento computacional: una revisión sistemática]. *RIED-Revista Iberoamericana de Educación a Distancia*, 27(1). <https://doi.org/10.5944/ried.27.1.37572>



COMPUTATIONAL THINKING

Computational thinking encompasses mental processes that facilitate automated solutions to specific problems.

TEACHER TRAINING

Its integration into primary education is grounded in enhancing problem-solving skills and adapting to the digital environment. However, exactly what constitutes effective teacher training and classroom implementation strategies remains ambiguous. These concerns are addressed in this systematic review, highlighting the influence of school practices on shaping educational curricula.

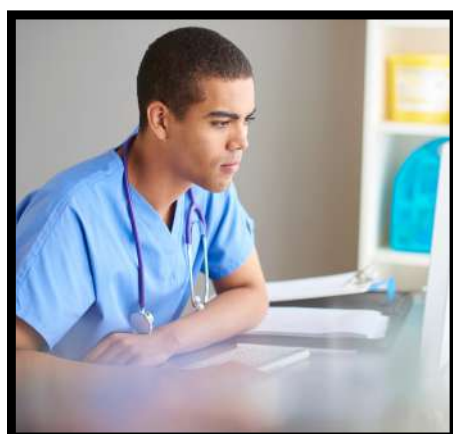
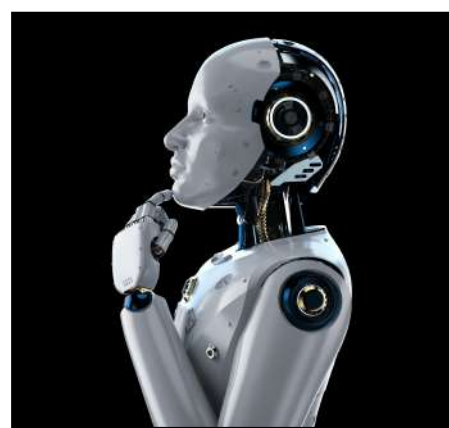


REVIEW

This research examines the implementation of computational thinking and teacher training at the primary education level. Initially, 428 studies were identified in Scopus and Web of Science, and these were then narrowed down to 25 empirical studies published between 2006 and 2023 after applying eligibility criteria and quality assessment.

RESULTS

The findings indicate that many educators strive to incorporate computational thinking without adequate training. Robot programming prevails as the primary strategy, and there is high demand for training on the subject, but the use of “unplugged” activities is limited.



MORE RESEARCH

Nevertheless, before computational thinking in primary education is advocated for, further research is warranted, particularly in the early grades. Educational institutions are encouraged to take the lead in designing and evaluating teacher training programs according to a set of guidelines provided.

STRONGER APPROACHES

The successful integration of computational thinking into primary education necessitates more robust pedagogical approaches supported by appropriate teacher training.

