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Evaluating a Teacher Training Program for the Integration of Computational Thinking in Primary Education

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Abstract-

Computational thinking (CT) is a key competence in the 21st century. Its teaching in Primary Education combines unplugged and plugged-in strategies. The present study evaluates the effect of a training intervention aimed at primary school teachers to develop CT and implement visual block programming (VBP). A quasi-experimental pre-post design was used to assess the effects of the intervention. The final sample consisted of 57 teachers in Spain. The AProPrim scale was used for the measurement, consisting of three dimensions (self-efficacy, relevance and interest), whose structure was confirmed by confirmatory factor analysis. Data analysis was performed with IBM SPSS, applying descriptive statistics, Student's t-tests, Wilcoxon for non-parametric data and Pearson's correlations. The results showed a significant increase in self-efficacy and perceived knowledge and use of VBP, although a decrease in interest was observed. Positive correlations were found between self-efficacy, relevance and use, which were strengthened after the intervention. In addition, the overall assessment of the training was positive, highlighting its applicability and the demand for more sessions. The implications of this study highlight the importance of providing specific teacher training in CT and VBP to improve self-efficacy and the application of these competencies in the classroom, primarily through practical approaches and appropriate resources. It is recommended that training strategies be adjusted according to teacher experience, considering generational differences.

Index Terms- Intervention Programs, Elementary School Teachers, Computational Thinking, Visual Block Programming

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