The Enticing Knowledge of Computational Thinking Development: Lessons Learnt from Recent Educational Literature

Dwi Oktavia, Cucuk Wawan Budiyanto, and Rosihan Ari Yuana
Department of Informatics Education
The Faculty of Teacher Training and Education
Universitas Sebelas Maret
Surakarta, Indonesia
dwioktavia@student.uns.ac.id, cbudiyanto@staff.uns.ac.id, rosihanari@staff.uns.ac.id

Abstract

Various approaches can be adopted to develop students' computational thinking skills by teachers/academics. Despite the extensive literature on the adoption of computational skills, there is likely to be a lack of explanation of how computational skills are used for learning at different levels of education. So, this literature will explain various methods that can be used in developing computational skills in schools, which will make it easier for teachers or practitioners to choose what suitable techniques to apply in their classes. In conducting the literature, researchers selected 2064 articles in Science Direct and Google Scholar published in the 2015-2021 timeframe. Furthermore, 27 articles were selected and entered into the concept matrix table to synthesize the articles. Based on the literature, various learning methods develop the ability to think, which have their characteristics. To adopt these methods in learning instruction, it is necessary to consider the concept of computing, metacognitive practice, and student learning behavior. In addition, it is possible to combine several methods to achieve better results.

Keywords
computational thinking, learning media, teaching method, literature review