Addressing Computational Thinking Needs' of Visually Impaired Children

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Abstract

Computational thinking skill is advocated for children for their general problem-solving ability. However, children with vision deficiency are restrained from developing their computational thinking skills as the recently available tools do not cater for people with disability. This paper aims to address the need for computational thinking in children with visual impairments. This paper uses a literature review method following the Systematic Literature Review framework by collecting relevant articles on the development of computational thinking skills in blind children. Fourteen empirical reports published between 2017-2020 were aggregated from Google Scholar and SCOPUS. The papers, then analyzed using a critical analysis approach. The analysis reveals that children with visual impairment are largely overlooked in the computational thinking literature. Despite the vast amount of media facilitating computational thinking skills, only a few technologies accommodate children with visual disabilities. They are not only involved in shaping the characteristics of basic computing abilities but also encourage blind children to cultivate a passion for learning and encourage future spatial and computational thinking skills.

Keywords
Algorithm, Child education, Computational thinking, Programming skill, Visual impairment.