Teaching Computer Programming in the 21st Century

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ABSTRACT
Over the years, research has shown that programming has proved to be a challenging task to many. Due to this, several program visualization tools have been developed to aid in teaching programming. This study aimed at assessing the impact of using programming visualization tools in the teaching and learning of computer Programming. An overview of the tools that were used during the study is given followed by review of literature on the benefits of PV tools in teaching Programming. The study is based on Edga Dale's (1954) Cone of Experience, which forms the foundation of resource based learning theories. Literature reveals that the use of program visualization tools in teaching and learning Programming have posted positive results in various institutions. This is followed by a report of a study conducted using experimental research design approach. The same class was taught two programming introductory courses using BlueJ and Jeliot3 tools; and the performance of the students in the two courses was compared. In addition, during the classes, the covert-direct observation method was used to observe student interactions' and behaviors as they programmed and solved problems during the lessons. Results revealed that these tools if effectively used can improve on the alertness of students, interest in the subject and ultimately positive results.
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