

Exploring teachers' practices in teaching robotics programming in primary school

ABSTRACT

Programming and coding are important skills and competencies in the 21st century. Due to this importance, robotics programming has been introduced in the Malaysian education system since 2013. Robotics is important in education because it could be used to cultivate various skills. Various studies have been conducted on robotics and its applications in education, and proponents of robotics believe that using robotics to teach programming could be impactful and effective in the Malaysian education context. On the other hand, many students think that programming is challenging. Consequently, some questions have arisen, such as the suitable programming language or platform to be used in Malaysian Primary School and the best instructional method. Studies have also examined the existing robotics modules used in the teaching and facilitation (T&F) process, in which it was found that the current curriculum is focused on introducing robotic programming. In this regard, there is a need to explore the current teaching design, pedagogy, and teachers' practices. Therefore, this study is aimed to explore the teachers' practice in teaching robotics programming as part of the Design and Technology (RBT) subject in Primary School. This study discusses teachers' practices, the issues in robotics programming education, the importance of robotics to education, especially in primary schools, and the robotics kits and programming languages or platforms commonly used in schools. This study is a qualitative case study, and data were collected using in-depth interviews. The findings of this study have produced several key themes, namely: (a) RBT teacher practices (GRBT) in T&F, (b) Strategies in lesson planning, (c) Challenges and obstacles of T&F, (d) Use of technology, and (e) Teacher's commitment. These are hoped to help educators, education administrators, and policymakers to understand the implications of robotics teaching in teaching programming.

Keyword: Robotics programming; Robotics education; Teachers' practices