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Design and Technology in Malaysian Secondary Schools: A Perspective on Challenges

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Abstract

Design and Technology (D&T) is a relatively new curriculum in Malaysian secondary schools. The basic idea of a design-based curriculum is to facilitate deeper learning for learners to design and develop knowledge and application. However, knowing how design-based education is employed in schools is crucially essential. Therefore, this study aimed to obtain insights into the D&T curriculum implementation from students and teachers' viewpoints. The study involved semi-structured interviews with four teachers and five secondary school students. Interviews were transcribed verbatim, while conclusions were drawn based on theme analysis. The findings indicated that students and teachers recognised the purpose and direction of the D&T curriculum. Nevertheless, challenges exist in various aspects, as the subject is still in the early implementation stages. Challenges such as teachers' knowledge and skills, students' lack of understanding in abstract topics and insufficient facilities, equipment, and resources offer opportunities for researchers to explore relevant approaches to assist teachers and students in teaching and learning. Previous studies demonstrated the effectiveness of technology-assisted interventions to ease and overcome problems involving cost and time constraints. Thus, suitable technology-assisted strategies should be developed and utilised to facilitate the students' abstract details visualisation in technological application topics.

Keywords: Design and Technology, teacher's perception, student's perception, technology-assisted teaching strategy

Introduction

The 21st-century marks a rapid momentous shift in the global economy by moving towards the digital age and knowledge society. Changes in technological advancement and the job market's competitiveness have led to changes in the education system and provide younger generations with the required knowledge and expertise to thrive in the current global economy. Besides preparing students for the working world, higher order thinking skills are emphasised to comply with international education standards. Curriculum transformation from the *Kurikulum Bersepadu Sekolah Menengah* (KBSM) in 1989 to *Kurikulum Standard Sekolah Menengah* (KSSM) highlighted the enhancements of content, pedagogy, and assessment by underlining student's learning outcomes (Kementerian Pendidikan Malaysia, 2013). The curriculum transformation introduced D&T subject, a Science, Technology, Engineering and Mathematics (STEM) domain that supports students' critical thinking skills in problem-solving as students create, assess, and redesign projects (Bahagian Pembangunan Kurikulum, 2019).