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Future Trajectories in Teaching-Learning Practices for STEM Education in Malaysian Secondary Schools: A Scoping Review

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ABSTRACT

Despite umpteen initiatives undertaken by the government though Ministry of Education (MOE) and Ministry of Science, Technology and Innovation (MOSTI) in Malaysia, the number of students enrolling for Science, Technology Engineering, and Mathematics (STEM) majors in tertiary education keeps declining. This issue is expected to negatively impact Malaysia’s economy in the long run. Researchers have traced this problem to two root causes: (1) Decrease in motivation and interest among students to learn Science and Math-related subjects at secondary schools, and (2) Low exposure to STEM in secondary schools due to inadequate integration of science, math, engineering design process and technology in Science and Math instructions. To add to the current body of literature and raise awareness among educational stakeholders, this study reviews some recently conducted studies with two objectives: (1) To explore the current teaching-learning practices that affect students’ motivation and interest to pursue STEM, and (2) To make some practical suggestions in terms of instruction and teaching-learning practices to attract more students towards STEM. It is believed that this review will be especially beneficial for Malaysian secondary school teachers and curriculum planners to design STEM projects and lessons using teaching-learning practices that can positively influence more students to pursue tertiary education and careers in STEM.

Keywords: *STEM Education; Motivation; Interest; Learner-Centred Pedagogy*