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Entitled

UAE STUDENTS' PERCEPTIONS OF THE RELATION BETWEEN STUDYING SCIENCE THROUGH STEM AND THEIR ASPIRATIONS FOR STEM CAREERS: THE CASE OF GRADES 9 AND 10 IN AL FUJAIRAH

by

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Date & Venue

8-10 AM

Monday, June 10th 2024

H1-0009

And via this [link](#)

Abstract

Science, technology, engineering, and mathematics (STEM) education in the United Arab Emirates (UAE) is receiving growing attention because the country's massive economic growth has created a need for STEM-qualified graduates. Educational policymakers and curriculum developers in the UAE are, therefore, advocating the development and implementation of STEM at all academic levels. Studies have emphasized that STEM education positively affects students' ability to solve problems, be innovative, think critically, and be technology literate. This quantitative study aimed to explore students' level of interest in STEM and the impact of studying STEM on their future career aspirations. Specifically, this study examines the following research questions: (1) what is the level of interest in STEM among ninth and tenth-grade students in Al Fujairah? (2) What is the relation between studying science through STEM and students' aspirations for STEM careers? (3) Are there significant gender-based and grade-level differences among students in their career aspirations and interest in STEM? (4) What is the effect of students' participation in STEM lessons on their attitudes toward STEM? A quantitative approach was adopted to collect data from grades 9 and 10 students using a survey. The sample consisted of 1,100 students from grades 9 and 10 for the first survey and the researcher considered 104 students to test their interest in STEM from pretest and posttest STEM schools for the second survey. A repeated-measures analysis of variance revealed that students in STEM programs had significantly different career aspirations and future goals compared with those not in STEM. To investigate the relation between STEM field interest and career goals, Pearson product-moment correlation coefficients were calculated. Interest in science and the desire to pursue careers in the field were positively correlated. Further, the results demonstrated a statistically significant impact of gender (i.e., girls show more interest than boys). Considering the significance of STEM education today, activities can be conducted to increase students' interest and engage them in STEM. Findings may drive positive developments in UAE STEM education by informing policymakers regarding the advantages of STEM classes in enhancing students to enroll in STEM classes and pursue STEM careers.

Keywords: STEM education, STEM classes, perceptions, STEM careers