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Abstract

The Impact of Using Experiential Learning with Integrated STE(A)M Curriculum on transforming students' learning

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Abstract:
Science, technology, engineering, and math (STEM) education has become an international focus of paramount importance. Towards this end, the U.A.E has launched a series of research projects, initiatives and policies. The U.A.E. government promotes STEM (science, technology, engineering and mathematics) through educational reform as well as through national strategic measures such as the U.A.E. Vision 2021, Advanced Sciences Agenda, National Innovation Strategy and the Fourth Industrial Revolution Strategy. Additionally, enabling learners to acquire the STEM competencies needed to be successful citizens is one of the main drivers, aims and purposes of the Science, Technology and Innovation Policy (2015).

This is because of the shortage in the UAE STEM workforce, where only 21% of students in government universities enrolled in STEM majors (Moonesar et al., 2015).

Furthermore, adding Art to STEM is not only increases students' interests toward STEM careers but also sparks the interplay between students' divergent and convergent thinking that lead to transformational learning. There is a great need to focus on transformational learning for workers in competitive economies, to lead to a knowledge-based economy through a reformed curriculum and instructions in schools and higher education. As a result, this will lead the focus from teaching to students' learning where they are engaged in a student-centered environment. The experiential learning is a philosophy of education that is built on social and constructivist theories but situate experience at the core of the learning process. The essence of experiential learning is learning by doing where students will be able to transform the theories into practice.

This study is aiming to investigate the impact of using experiential learning with the STE(A)M curriculum on transforming students' learning. Kolb's model of experiential learning was used as a conceptual framework to guide this study. The study was conducted in a vocational institute in the UAE. Research questions of this study have been addressed. The results of this study showed that the application of experiential learning within the STE(A)M curriculum has a positive impact on transforming students' learning

Biography:
Dr. Areej ElSayary is holding a PhD degree. She is an Assistant Professor at Zayed University and has 11 years' experience in STE(A)M curriculum design and development, teaching and learning, assessment, and schools accreditation. Prior to joining Zayed University, she worked at the Al Arabia for Education Company, as well as being Adjunct Faculty at the American University. She is an Approved Accreditation Visitor from New England Association of School and Colleges NEASC & Council of International School CIS. Dr. Areej is an accomplished researcher, having published on cognitive development, Interdisciplinary STEM curriculum, and assessment and presenting her work in several regional conferences.

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