

**The College of Graduate Studies and the College of Education  
Cordially Invite You to a**

**Master Thesis Defense**

**Entitled**

*THE IMPACT OF STEM-BASED CURRICULUM ON THE DEVELOPMENT OF CREATIVE  
THINKING OF HIGH SCHOOL STUDENTS IN THE UNITED ARAB EMIRATES*

**by**

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**Monday November 21<sup>st</sup>, 2022, at 6:00 pm**

**Room:H1 -0004**

**Join Zoom Meeting:**

<https://ualberta-ca.zoom.us/j/99837491710?pwd=ajZzYy9DMW1hWEt0ODR5cTFHTnQ0QT09>

**Meeting ID: 998 3749 1710**

**Passcode: 769273**

**Abstract:**

This study aims to assess the impact of the STEM-based curriculum on the development of the creative thinking of high school students while studying physics. Also, this study aims to assess the influence of students' gender and grade level on the development of creative thinking after the implementation of STEM-based curriculum. A quasi-experimental design was employed to collect data using Torrance Test of creative thinking and its metrics (Fluency, elaboration, flexibility, and originality) to assess the impact of STEM-based curriculum on the development of creative thinking.

By conducting a pre-posttest amongst 94 high school students of mixed genders(males/females) and grade levels (grade10/grade12) who were randomly divided into two groups of control and experimental in one of Al Ain Private schools in UAE. The results of the study showed a significant impact of STEM-based curriculum on the development of students' creative thinking levels compared to creative thinking levels of students who studied under the traditional curriculum as measured by the Torrance Test and its metrics. In contrast, the results showed that the gender differences had no impact on the overall level of creative thinking between males and females who studied under STEM-based curriculum, except for the skill of flexibility, as females outperformed males who had superiority in the skill of originality. On the other hand, the results showed that the grade level had positively impacted the development of overall level of creative thinking and the skills of fluency and flexibility of grade 10 compared to grade 12 who had superiority in the skill of originality.

**Keywords:** STEM-based curriculum- Creative Thinking -Torrance Test of creative Thinking