

## **Saudi Arabian Science and Mathematics Teachers' Attitudes toward Integrating STEM in Teaching before and after Participating in a Professional Development Workshop**

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**Abstract :** The purpose of this study was to analyze Saudi Arabian science and mathematics teachers' attitudes toward integrating STEM in teaching before and after they participated in a professional development workshop focused on STEM integration in a specific middle school science and mathematics unit. The participants were 48 Saudi Arabian science and mathematics teachers who participated in a three-day workshop held in Riyadh, Saudi Arabia. The research method was a pretest-posttest group design. The primary data source was the instrument for teachers' attitudes toward teaching integrated STEM. The results indicate that Saudi Arabian science and mathematics teachers' perceptions of difficulties decreased due to their participation in the professional development workshop on integrated STEM. Meanwhile, the teachers' self-efficacy improved following their participation in the STEM professional development (PD) workshop. However, no perceived effect was found for the teachers' perceptions of the relevance of or their anxiety about or enjoyment of integrated STEM teaching due to their participation in the three-day PD workshop.

**Keywords :** STEM integration, attitude toward STEM, STEM workshop, professional development

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