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# The Effect of Extracurricular STEM Activities on the Scientific Creativity of Secondary School Students

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## Abstract

**Purpose-** The aim of this study is to examine the effect of extracurricular "Science, Technology, Engineering and Mathematics" (STEM) activities on the scientific creativity of secondary school students.

**Method-** In the study a quasi experimental design with a pre-test post-test control group, one of the quantitative research designs, was used. While the science lessons in the control and experimental groups were carried out within the scope of the curriculum, additional to this science lessons, after school STEM activities were carried out with the experimental group. The 'Scientific Creativity Test,' which consists of seven open-ended questions and adapted by Kurtuluş (2012), was employed as a data collection tool in the study. The data were analysed using the SPSS 20.0 software.

**Findings-** This study had concluded that extracurricular STEM activities applied after school had a positive effect on the scientific creativity scores of secondary school students. From this point of view, it has been recommended to carry out STEM activities in Design-Skill Workshops, whose main purpose is to improve the scientific creativity of students

**Significance-** When the literature is examined, while there are some studies examines STEM activities on scientific creativity, no study examined the effect of extracurricular STEM activities to be carried out after school independently from the curriculum on students' scientific creativity. So this study will be the first study in this field. On the other hand, since STEM activities will be carried out in the Design-Skill Workshops set forth by the Ministry of National Education in the Vision Document, the findings to be obtained from this study will answer whether the students can improve their creativity, which is one of the main goals of the workshop.

**Keywords:** Scientific creativity, Science education, STEM.