

## INVESTIGATION OF PRE-SERVICE CHEMISTRY TEACHERS' CHEMISTRY LABORATORY ANXIETY LEVELS

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### ABSTRACT

This study aimed to determine pre-service chemistry teachers' anxiety levels in chemistry laboratory with respect to their grade level and gender and the relationship between pre-service chemistry teachers' laboratory anxiety levels and their achievement in chemistry laboratory. The participants are pre-service chemistry teachers in a public university in Turkey. Chemistry Laboratory Anxiety Scale developed by Bowen (1999) was used to identify their anxiety levels. This scale adapted into Turkish by Azizoglu and Uzuntiryaki (2006) includes four subscales: using equipment and chemicals, working with other students, collecting data, and having adequate time. MANOVA was used to analyze the difference between pre-service chemistry teachers' whole scores of chemistry laboratory anxiety scale and scores of each factor in this scale regarding gender and grade levels. In addition, the correlation coefficient was calculated to find the relationship between their anxiety and achievement levels. The results show that gender and grade level are not effective in laboratory anxiety levels. Furthermore, a significant relationship was found between both anxiety about using equipment and chemicals, and laboratory achievement, and anxiety about having adequate time and laboratory achievement. The study also presents some implications about the role of students' anxiety levels in their achievement in chemistry.

**Key Words:** Chemistry Laboratory, Anxiety, Pre-service Teachers.