

## AN EXPLORATION OF UNDERGRADUATE ENGINEERING, EDUCATION, ART'S AND SCIENCES STUDENTS' CHEMISTRY LABORATORY ANXIETY LEVELS

Dilek KARIŞAN  
Middle East Technical University  
Faculty of Education  
Department of Elementary Education  
Ankara, TURKEY

Assoc. Prof. Dr. Ozgul YILMAZ-TUZUN  
Middle East Technical University  
Faculty of Education  
Department of Elementary Education  
Ankara, TURKEY

### ABSTRACT

This study examined the difference among undergraduate engineering, education, and arts and sciences students' chemistry laboratory anxiety levels and aimed to describe the causes of these differences. Chemistry Laboratory Anxiety Instrument (CLAI), developed by Bowen (1999) and adapted into Turkish by Azizoğlu and Uzuntiryaki (2006), was used as the data source. There are four dimensions of the scale which are: using equipment and working with chemicals, working with other students, collecting data, having adequate time. 295 college students were participated in the study. Participants consist of three different faculty students (engineering, art-science, and education faculty). SPSS and AMOS statistics programs were used to analyze students' anxiety levels. MANOVA was performed to explore the relation between gender, faculty and chemistry anxieties (i.e using chemicals, peer work, data collection, and time management) of undergraduate students. Results of the study have shown that gender has no significant effect on students' chemistry laboratory anxiety levels. However, there is a significant difference among different faculty students' anxiety levels. These variations were tried to be explained by conducting semi-structured interviews with lowest and highest anxious students.

**Key Words:** Anxiety, Chemistry laboratory anxiety, Undergraduate students.