ABSTRACT

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IMPACT OF GENDER AND GIFTEDNESS ON CHEMISTRY STUDENTS' SELF-EFFICACY AND SCIENTIFIC IDENTITY

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High school students' chemistry self-efficacy (CSE) and scientific identity (SI) are not well understood in the high school chemistry classroom. The purpose of this research was to quantitatively investigate the interaction between gender and giftedness on students' CSE and SI in a suburban high school chemistry classroom, with and without consideration of laboratory modalities as an intervention. The participants were high school students in a suburban chemistry classroom in a Southeastern state. Data was collected through pre- and post-test surveys with Likert style questions. Data was evaluated using quantitative analysis. The results revealed that neither laboratory modalities, nor gender or giftedness, significantly impacted students' CSE and SI. Implications suggest that district stakeholders and teachers have a duty to help students grow and understand students' CSE and SI. Students can strengthen their CSE and SI by having mastery and vicarious experiences as well as opportunities for discussion and verbal persuasion in the chemistry classroom. Future research could explore enlarging the sample size through expansion to more high schools within the same district, changing the methodology to a mixed methods study, or increasing the length of time for the study to see how students perform over the whole course compared to a small segment of it.

Key words: chemistry self-efficacy, scientific identity, gender, giftedness, laboratory modality