West Virginia University

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The Elements of Attitude: How Student Views on Chemistry Evolve and Why

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General chemistry is a gateway course that students from several STEM-related majors take at the beginning of their college careers. Faced with high attrition rates of students in STEM fields and even higher rates for groups minoritized, we sought to explore ways to decrease these rates and increase persistence. As STEM education researchers continue to explore ways to increase student persistence in STEM fields, the affective domain (e.g., attitudes, perceptions, and self-efficacy) stands out as an area that can significantly impact these efforts. Using the *Modified Attitude towards Science Inventory* (mATSI), we collected data on students' attitudes towards science before and after taking a general chemistry course. We used several methods to explore the nuances and similarities in student responses and this presentation will highlight the findings from the different methods uses, the factors students believe influenced their attitudes and lessons learnt from these studies. We found that students typically leave their general chemistry course with positive attitudes and the main factors influencing students' perceptions were the course instructors, teaching assistants, and the course structure. These findings can shed light on future pedagogies in general chemistry to help improve students' perceptions of chemistry, which can increase students' success and persistence rates in science-related fields, including chemistry.

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