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How Student Attitudes have Changed Toward Chemistry due to the Implementation of Hybrid Labs

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Student Perceptions of Hybrid Labs: Changes in Attitudes Toward Chemistry

Hybrid chemistry labs in schools and universities have become much more common due to the COVID-19 pandemic. Previous research on student perceptions of chemistry has shown a correlation between their attitudes and performance in this subject that educators are still seeking to understand. This mixed methods study compared perceptions of students in traditional, in-person labs (pre-COVID, 2017) with students in a mixture of virtual and in-person labs (during COVID, 2020) over the course of a semester. The Attitude toward the Study of Chemistry Inventory (ASCI) survey was given to both cohorts of students and focused on five areas related to student perceptions of chemistry; additional qualitative questions were added to the 2020 cohort to better understand their hybrid lab experience. Surveys were conducted at the beginning and end of the fall 2017 and fall 2020 semesters. Results showed that while student anxiety toward chemistry increased similar amounts for both cohorts, students were significantly more anxious in the 2020 semester compared to 2017. While anxiety increased, fear about chemistry dropped drastically from 2017 to 2020, likely due to the decrease in hands-on lab experience. A general decrease was found in emotional satisfaction with both cohorts, but it decreased less in 2020 compared to 2017. Full quantitative results with comparisons between cohorts and changes within each cohort over the course of the semester will be discussed along with qualitative data to elucidate the quantitative findings and further explore student perceptions of the hybrid labs.