

EXPLORING OCEAN ACIDIFICATION IN UNDERGRADUATE CHEMISTRY WORKSHOPS

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BACKGROUND

Ocean acidification (OA) has profound impacts on marine ecosystems, particularly the Great Barrier Reef. While many studies investigate students' understanding of climate change, there is a paucity of research on OA (Aubrecht, 2018; Danielson & Tanner, 2015). Literature suggests effective climate change education is affect-driven and personally relevant (Rousell & Cutter-Mackenzie-Knowles, 2020; Monroe et al., 2019).

AIMS

This study aims to investigate how to develop students' understanding of and concern about OA.

DESCRIPTION OF INTERVENTION

Three first-year undergraduate chemistry workshops were designed with different pedagogical approaches. The Community of Inquiry workshop engaged students in philosophical discussion about the scientific, ethical, and social complexities of OA. In the Socioscientific Issues workshop students debated how we should respond to OA. The control workshop aligned with current practices and involved students solving chemistry problems within the context of OA.

DESIGN AND METHODS

The interventions were implemented in Semester 1 2022. A quasi-experimental design was used, students self-selected their workshop. Mixed-methods evaluation involved collection of pre- and post-test data and audio recording students' group discussions during workshops. These data are undergoing statistical and thematic analysis, informed by literature.

CONCLUSIONS

Insights from this project will inform development of an OA inquiry-based learning opportunity that builds students' knowledge and fosters care for the environment.

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