

# WHAT DOES SUCCESS MEAN TO CHEMISTRY STUDENTS? EXPLORING DEFINITIONS, SUPPORTS, AND BARRIERS

Siobhán S. Wills<sup>a</sup>, Tyler Kinner<sup>b</sup>, Nhan Nguyen<sup>c</sup>, Marina Tanizawa<sup>c</sup> & MaryKay Orgill<sup>c</sup>

Presenting Author: Siobhán S. Wills ([Siobhan.Wills@murdoch.edu.au](mailto:Siobhan.Wills@murdoch.edu.au))

<sup>a</sup> School of Mathematics, Statistics, Chemistry and Physics, Murdoch University, Perth, W.A., 6150, Australia

<sup>b</sup> Gwinnett County Public Schools, Georgia, 30024-2978, U.S.

<sup>c</sup> School of Chemistry, University of Nevada, Las Vegas, Nevada, 89154, U.S.

**KEYWORDS:** Chemistry, Student Success, Barriers, Supporting Factors

**SUBTHEME:** Equity, Diversity, and Inclusion

## BACKGROUND

Frequently academic success is defined in terms of numbers: students' scores on exams, their GPAs, and their retention or graduation rates (Weatherton & Schussler, 2021), definitions often used by instructors. However, it is entirely possible that students define success more broadly than this, and the incongruence between instructor and student beliefs may adversely impact student learning outcomes (Weatherton & Schussler, 2021). Carrying out qualitative studies in which students are given the opportunity to define their version of success and identify the factors that contribute to it, will allow us to better tailor classes and degrees to support the students in our courses.

## DESCRIPTION OF STUDY

We collected our data through semi-structured interviews with chemistry students from one Australian and two U.S. tertiary institutions between 2023-2025. During the interviews, students were asked to discuss, from their perspective, what it means to be successful in university, as well as factors and people who help them (or don't help them) to be successful. Toward the end of the interview, students were provided with a list of literature-derived factors that affect student success and were asked to sort them as those that (1) supported their success, (2) hindered their success, or (3) had no effect on their success (an example: Matusovich, Streveler & Miller, 2010).

Thematic analysis (Braun & Clarke, 2006) of the interview transcripts was employed to identify the different ways that chemistry students define success in university, as well as different factors that students believe either support or hinder their success. Analysis of the card sort data provided a different perspective of the factors that influence chemistry student success in university.

## RESULTS

We will present preliminary findings on student definitions of success, and the factors they believe support and impede their success, as well as a comparison of results between institutions in the different countries.

## REFERENCES

- Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative Research in Psychology*, 3(2), 77–101.
- Matusovich, H.M., Streveler, R.A. and Miller, R.L. (2010). Why Do Students Choose Engineering? A Qualitative, Longitudinal Investigation of Students' Motivational Values. *Journal of Engineering Education*, 99: 289-303.
- Weatherton, M., & Schussler, E. E. (2021). Success for all? A call to re-examine how student success is defined in higher education. *CBE—Life Sciences Education*, 20(3), 1-13.

Proceedings of the Australian Conference on Science and Mathematics Education, The University of Melbourne, 30 September – 2 October 2025, page 81, ISSN Number 2653-0481.