

IMPACT OF STUDENT APPROACHES TO ALURE: 'SWIMMING LESSONS' IN THE UNDERGRADUATE LABORATORY.

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This study investigated student-reported experiences in Authentic Large-scale Undergraduate Research Experiences (ALUREs) and in traditional laboratory-based practical sessions (LEAPS).

BACKGROUND

Engaging undergraduate students in research is considered essential for a tertiary science education; and for producing prepared, informed graduate scientists. Existing undergraduate research experience models have been shown to confer a broad array of student benefits, however they also have limitations of scale that prevent large numbers of students engaging in undergraduate research. We are using ALURE to massify the opportunity for undergraduate students to participate in research and to explore it as a potential part of their future study and career plans.

AIMS

This study aimed to record student perceptions of their learning and development during ALUREs, and determine the aspects of ALURE that students report as 'helps and hindrances' for this learning and development. The aim of the OLT-funded ALURE Project is to give information to academics who want to engage their undergraduates in integrated research experiences. We aim to use our data to develop good practice guidelines for ALURE implementation, with a particular focus on enhancing the student experience.

DESCRIPTION OF EDUCATIONAL MODEL

ALUREs are designed to give whole-course cohorts of undergraduate students a chance to take part in course-based research experiences throughout their education. An ALURE is implemented as part of a regular undergraduate course; the students work with peers, tutors, and an engaged researcher to generate and communicate original, meaningful data. We have conducted ALURE experiences for up to four hundred students at a time in one course. This year, ALUREs were implemented in a multitude of disciplines, from Biochemistry to Microbiology to Nanotechnology. Each ALURE was developed to fit the implementers' specific course, discipline, and learning objectives.

DESIGN AND METHODS

This phenomenological, ethnographical study drew from both qualitative and quantitative sources of student-reported experiences. Students from four Australian universities were invited to share their experiences in ALUREs or LEAPS in the form of surveys, written reflections, and qualitative interviews. Survey data was statistically analysed to measure changes in skills acquisition, and development of attitudes towards learning and future plans. Written reflections and interview transcripts were coded to find themes consistent with a student gains framework as described in Hunter, Laursen, and Seymour (2007). These gains are a core component of the Ethnography and Evaluation Research Undergraduate Research Student Self-Assessment (URSSA) survey (Hunter, Weston, Laursen, & Thiry, 2009), part of our post-survey. Also included were themes relating to ALURE design and implementation.

RESULTS

From our initial data analyses, we anticipate that we will be able to present findings indicating student gains aligned with those in the URSSA framework, including increased awareness of research practice, skills acquisition and preparedness for future pathways (Hunter et al., 2007; Hunter et al., 2009). Student assessments of support within and authenticity of ALUREs will also be reported.

REFERENCES

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