**Authors**

Jurgen Schulte, Neela Griffiths

**Title**

Learning futures: introducing authentic assessment to enable practice-oriented learning in science.

**Abstract (320 words)**

Traditionally, as a response to its emphasis on disciplinary theory, science is assessed by way of content focussed class tests and examinations, activities not reflected in workplace practice. These summative assessment types measure student attainment of knowledge rather than enable deeper understanding and learning. However, introducing students to ‘real-world’ practice-oriented assessment tasks can enhance student engagement and promote learning. In an undergraduate, second-year physics subject the summative assessments (worth 75%) were replaced by an authentic task: the production of a peer-reviewed group-based research paper journal. This assignment re-design supported students’ active involvement in the learning and assessment process alongside the development and application of their disciplinary knowledge. Students were grouped according to their topic selection and participants in a series of peer-reviewed, group-based formative feedback cycles throughout the semester. In order to provide an attainable pathway into research conducted in a professional environment, students were instructed to go beyond a literature review and to adopt a meta-study approach.

Following the peer-review and feedback process the research papers were then collated for professional printing, and published in an internal student research journal created for that purpose. The assignment was carefully scaffolded to give students the opportunity to improve their scientific writing skills, develop an approach to systematic research, build a greater understanding of the peer-review process and disciplinary theory, and acquire skills in self and team management.

The impacts of this assessment re-design were evaluated through a focus group discussion with the majority of the students commenting positively on their learning and engagement in the subject. Students engaged in self-study and applied the theoretical content learned in the lectures, produced new knowledge from the secondary research they conducted, and were clearly motivated by the challenge of a meaningful task that had a tangible outcome. This paper will discuss the implementation, challenges and outcomes of the assessment re-design and its potential use in other courses especially those with a heavy theoretical component.