



The Teaching-Research Nexus

A guide for academics and policy-makers
in higher education

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Examples from Australian universities

Engineering Research Practice: Improving curriculum design to enhance student learning outcomes

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Broad discipline area:

Engineering and Related Technologies

- Systems Engineering

Year level:

- Postgraduate coursework

TRN strategy:

- Conduct and draw on research into student learning to make evidence based decisions about teaching

Teaching and learning context:

- Course evaluation
- Curriculum design
- Assessment (Assignment)

Brief description of the initiative:

This example concentrates on how the coordinators of *Engineering Research Practice* attempted to increase student outcomes and satisfaction with the course by redesigning the assessment practices of the subject. They have submitted a paper on their work to a peer-reviewed journal in engineering education.

When their research methods course was first offered, students were required to submit five preparatory assignments before submitting a final research proposal. These assignments covered aspects of the final research proposal, such as statistical methods and conducting a literature review. The assessors found that the average grade of the preparatory assignments was higher compared to the grade given to the research proposal. Given that the aim of the preparatory assignments is to assist students with the research proposal, the coordinators rethought the existing structure of the assessment.

The coordinators believed the highly structured nature of one or two of the preparatory assignments resulted in that particular piece of assessment being quite

easy for students to attain a high grade, which increased the average score of the preparatory assignments. The assessments that were highly structured also did not translate well into learning outcomes for the students, as they did not fully understand how to successfully use those skills in the research proposal. The coordinators decided to focus the assessment around two preparatory assignments and a research proposal. The coordinators found that the more difficult preparatory assignments were, as expected, harder for students undertake, but their grades for the final research proposal improved, indicating a higher quality of preparation the students experienced as a result of undertaking the preparatory assignments.

Please see Example 1 (Systems Engineering 1.pdf) for more detail of the current course.

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