

# THE SCIENCE THRESHOLD LEARNING OUTCOMES: A 'STUDENT-FRIENDLY' VERSION

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## BACKGROUND

The Science Threshold Learning Outcomes (TLOs) are a nationally agreed set of learning outcomes for graduates of bachelor level degrees in science that are increasingly being used in curriculum review, design and bench-marking at Australian universities. The Science TLOs were published in the Science Standards Statement (Jones, Yates & Kelder 2011) together with notes on their interpretation and application: this is necessarily a formal document, aimed primarily at teaching academics and those with relevant quality assurance responsibilities. Talking with students during the development of the Science TLOs indicated that students were unlikely to engage with the TLOs as thus expressed. Therefore, if the Science TLOs are to be an effective means of informing students about the learning achieved through studying science at university, a modified version was required.

## AIM

This project aimed to develop a 'student-friendly' version of the Science TLOs directed at potential and current students, their parents, future employers, teachers and career advisors.

## APPROACH

The development was carried out in collaboration with *The Bookend Trust* (<http://www.bookendtrust.com/>), a not-for-profit organisation dedicated to inspiring students to undertake positive careers in environmental science. In particular, *Bookend* links media and journalism students with professional scientists or science students, thus fostering effective communication about contemporary science.

## STAGE 1

As a scoping exercise, a *Bookend* scholarship student investigated students' attitudes to the formally expressed Science TLOs. She presented four college (Year 11/12) science classes with a short survey that explored their conceptions of studying science at university and potential career paths in science. She also sought their opinions on a DL card- sized flier of the Science TLOs, and asked how the same information could be presented in a way that students would find relevant and attractive. The survey showed that a 'student-friendly' flier would need pictures, catchy words, bright colours, and common-use language. The students were enthusiastic about adding a QR scan code linking to a website, saying that would increase the likelihood of their picking up such a flier. The survey results informed Stage 2 of this project, particularly the design approach.

## STAGE 2

To embed the Science TLOs into a concrete context, *Bookend* summer scholarship students interviewed employers using standard questions designed to elicit responses illustrating how the Science TLOs are directly relevant to working in science. The interviews were professionally recorded on video, and the footage was edited to create short clips that were loaded onto a website.

## THE FINAL PRODUCT

We have produced a two-sided coloured flier that provides a 'student-friendly' version of the Science TLOs (re-phrased as questions) and a QR code linking to a website where the employer interviews can be viewed.

The 'Student-Friendly TLOs flier' is now freely available as a downloadable pdf from the Office for Learning and Teaching (OLT) Resource Library (<http://www.olt.gov.au/resource-library>) and other relevant sites. We thank the OLT for funding this project.

## REFERENCES

Jones, S. Yates, B. & Kelder, J. (2011). Science Learning and Teaching Academic Standards Statement. Strawberry Hills, N.S.W., Australian Learning and Teaching Council. Retrieved May 22, 2014, from <http://www.olt.gov.au/resources>.

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