Research Based Teaching in First Year Design

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Broad discipline area:
Architecture and Building

- Industrial Design & Product Design Engineering

Year level:

- First year undergraduate

TRN strategy:

- Build small-scale research activities into undergraduate assignments

Teaching and learning context:

- Practical experiments
- Field trips
- Assignment (Assessment)
- Real world learning/work integrated learning

Brief description of the initiative:
Design research is incorporated as an element of courses at this academic's university from the beginning of the undergraduate degree. For example, in the *Product Design Studio*, which is taken in the first year of the Bachelor of Design (Industrial Design) and Bachelor of Engineering (Product Design Engineering) programs, students take part in site visits, including visits to retail showrooms, where they observe design products and the materials and manufacturing methods these products embody. As the students need to learn the necessary skills to design objects themselves, their research involvement usually focuses on observing what has been done already. In the studio, this might take the form of "reverse engineering", where students physically dismantle a manufactured product such as a radio or kettle in order to learn how and why it was designed and manufactured.

A visual literature review is another research method used by designers. A literature review is essentially a research task, but in the context of a Design degree, a visual method of undertaking a review of the literature is sometimes better suited to understanding design objects. This typically involves the collection of images of

several design objects and then a SWOT analysis is conducted around them. Finally, students are able to design chairs and typical consumer products (lamps, portable fans, MP3 players, GPS devices, torches) using different materials, so they can discover for themselves which materials and manufacturing methods work best for particular designs.

All students must produce an annotated research folio of their design development beginning with initial historical references, current SWOT analysis of competitor products, concept drawings, detailed engineering drawings, explorations of different materials, manufacturing methods, ergonomics considerations and styling proposals.

This subject typically has enrolment numbers of 120 students, who are divided into five studio groups. Practising designers are recruited from the design industry to work in the studio as sessional staff members alongside career academics. The skills learned are later taken into the student's work placements (called Industry Placement) in third and fourth year of the degrees. Employer feedback also attests to the students' mastery of design research skills.

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