Virtual Work Integrated Learning

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OVERVIEW OF WORKSHOP

Students of accredited engineering programs in Australia must have exposure to practice (Engineers Australia, 2008). In most universities in Australia this has been achieved through placements of 12 weeks or longer internships. These placements can be extremely transformative for students but are unreliable and the diversity experienced by each student is limited. Furthermore, it is becoming increasingly difficult for students to secure placements and consequently universities must find additional opportunities for exposure to practice (Male & King, 2014a, 2014b).

The Project Team for the three-year project ‘Virtual Work Integrated Learning for Engineering Students’ (Male, 2016) is developing learning modules in which students will work on authentic engineering tasks, interacting with other students and real engineers electronically, visiting virtual engineering sites to complete their tasks, and reflecting on their learning. The virtual work integrated learning (VWIL) modules will complement existing opportunities for exposure to engineering practice.

VWIL offers the opportunity to provide reliable exposure to practice for all engineering students, scaffolded throughout the engineering program from first to final year. The Team is developing the modules presented in Table 1, ready for trials with universities from mid-2017.

Table 1: Planned Learning Modules

<table>
<thead>
<tr>
<th>Topic</th>
<th>Year-Level</th>
</tr>
</thead>
<tbody>
<tr>
<td>Engineering communication</td>
<td>1-3</td>
</tr>
<tr>
<td>Conflict resolution in teams</td>
<td>1-3</td>
</tr>
<tr>
<td>Applying for engineering jobs</td>
<td>1-3</td>
</tr>
<tr>
<td>Self-management</td>
<td>2-3</td>
</tr>
<tr>
<td>Preparing a tender</td>
<td>3-5</td>
</tr>
<tr>
<td>Evaluating a tender</td>
<td>3-5</td>
</tr>
</tbody>
</table>

ACTIVITIES

The workshop will include a brief introduction to the project. Following this, participants will work in groups focusing one or two modules each. They will be presented with a description of the module and discuss how the module could be used by students at their university, addressing questions such as:

- where in their program the module could be introduced;
- how learning would be assessed;
- resources that would be needed;
- evaluation; and
- sustainability.

Finally participants will engage in a plenary discussion about how universities will use the modules and necessary refinements to the modules.
TARGET AUDIENCE

Engineering academics, curriculum developers, practicum coordinators, associate deans teaching and learning, and unit coordinators should attend. Students would be welcome. No prior knowledge is required.

OUTCOMES

Participants will learn about the VWIL modules and plan how they might use them. They will also contribute to refining two of the VWIL modules and planning how they will be offered, ensuring that the modules are useful for their students.

REFERENCES


KEYWORDS

Work integrated learning, practicum, curriculum development, virtual reality

PRESENTERS' BACKGROUNDS

Dr Sally Male leads the project ‘Virtual Work Integrated Learning for Engineering Students’. She led the project ‘Gender Inclusivity of Engineering Students’ Workplace Experiences’ supported by the Australian Government Office for Learning and Teaching, and undertook the research on the national project ‘Enhancing Industry Engagement in Engineering Education’ for the Australian Council of Engineering Deans which resulted in the Best Practice Guidelines for Effective Industry Engagement in Australian Engineering Degrees (Male & King, 2014a). Sally is a Fellow Of Engineers Australia.

Ian Cameron is at the School of Chemical Engineering, The University of Queensland where he has been involved in over 30 years of engineering education innovation with an emphasis on professional practice through project based learning, curriculum design, virtual reality and immersive systems. He spent 15 years in industry before coming to UQ, and has continued strong links to industry through his international research and consulting in process systems engineering. He has received many ARC Discovery and Linkage grants as well as numerous CAUT/ALTC/OLT grants. He is a past recipient of the Australian Prime Minister’s Award for Teaching.

Dr David Pointing is Engineers Australia’s (EA) National Manager for Tertiary Development, responsible for driving EA’s engagement with the Tertiary sector and enhancing EA’s support for students, staff and graduates. David also contributes to the leadership of the EA staff teams responsible for engagement with industry-focused engineering professionals and organisations.

ACKNOWLEDGEMENTS

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