Learning and Teaching Investment Fund 2011

Final Project Report

Submission date: 17 February 2012

Title of project: Interteaching: Realisation of an Urban Laboratory

Strategic objective(s) addressed:
- To be work-relevant and industry-partnered
- To be urban in innovation and impact

Project leader:
Dr Mandy Kienhuis, School of Health Sciences, Discipline of Psychology

Contact details:
Email: mandy.kienhuis@rmit.edu.au
Phone: 9925 7400

Project team members:
- Associate Professor Andrea Chester, School of Health Sciences, Discipline of Psychology
- Professor Peter Wilson, School of Health Sciences, Discipline of Psychology
- Ms Karen Elgar, School of Health Sciences, Discipline of Psychology
Table of contents

1. Executive summary..................................................................................... 3
2. A list of outcomes ....................................................................................... 3
3. Project outcomes and impacts ................................................................. 4
4. Dissemination strategies and outputs ....................................................... 8
5. Evaluation of project outcomes ................................................................. 9
6. Budget report ............................................................................................. 9
7. References ................................................................................................. 9
1. Executive summary

The Interteaching model is an innovative approach to learning and teaching designed to support student engagement and greater depth of learning. The standard Interteaching model includes guided independent learning, student-paced small group tutorial discussion, and brief lectures that are developed in response to student feedback. A distinctive feature of the model is that tutorials precede lectures as a way of consolidating the concepts that students need most direction on (Boyce & Hineline 2002). In 2010, the Interteaching model was evaluated with the RMIT 2nd-year Developmental Psychology cohort. The efficacy of the approach was overwhelming, including statistically significant increases in student engagement, grades and Course Experience Survey (CES) scores. However, student behaviour and feedback indicated that the brief face-to-face lectures were not an essential component of the model, and that students may prefer brief audiovisual podcast learning modules ("podules") in addition to enhanced tutorial content. In 2011, replacement of face-to-face lectures with podules and enhanced tutorial content was trialled in the Interteaching model, using the RMIT 2nd-year Developmental Psychology cohort.

A total of 99 students enrolled in the Developmental Psychology course volunteered to participate in the end-of-semester evaluation of the Interteaching program. Overall, results revealed that the gains in academic progress, student engagement, and student satisfaction observed during the 2010 implementation of the Interteaching model were maintained in 2011. These results suggest that the use of podules in the course does not detract from the learning benefits of the Interteaching model. The cost and time effectiveness of podules in comparison to traditional lectures further recommends the continued implementation of podules in the Interteaching model.

2. A list of outcomes

- Report on the development and evaluation of a teaching model that can be used to enhance the teaching of large classes across the university.
- A teaching model that leads to enhanced engagement and learning in large classes, which can be applied to other courses and disciplines.
- An integrated package of learning and assessment tools that can be applied to other courses and disciplines.
- Development of sustainable tools for learning in Developmental Psychology, including ‘podules’ (online podcast modules) of content typically delivered during face-to-face lectures.
- Maintenance of improvements in Good Teaching Scale (GTS) scores in the Developmental Psychology course.
- An evaluative research study, with sufficient data to be developed into a further research paper and submitted to a peer-reviewed L&T journal in 2012.
- Development of an online learning framework in collaboration with EMG.
- Expansion of the research project across several disciplines at RMIT University in 2012, supported by a LTIF 2012 grant: Interteaching: Dissemination and evaluation across three Colleges. ($50,000)
3. Project outcomes and impacts

Funding was sought for the development of a series of modules and the evaluation of the adapted Interteaching model in the 2nd year Developmental Psychology course at RMIT University, in which the Interteaching model was initially implemented in 2010. Modules were successfully developed across all twelve weeks of the course, incorporating compulsory modules (assessable content) and optional modules (content generated to address student interest). Development of more comprehensive tutorial resources was also achieved, enriching the learning opportunities available to students.

Evaluation Results

A total of 99 students enrolled in the second-year Developmental Psychology course at RMIT University volunteered to participate in the end-of-semester evaluation of the Interteaching program. Participating students were predominantly female (80 females, 19 males), ranging in age from 18 to 60 years (M = 22.77, SD = 7.74), and were predominantly Australian born (79.8%) with English as their language spoken at home (70.7%).

Academic progress. One item was included in the student survey to evaluate students’ perceptions of their academic progress. This item asks: “How are you progressing with your studies in comparison with what you anticipated?” and participants respond on a three point scale where 1 indicates “better”, 2 indicates “about the same” and 3 indicates “not as well”. An independent samples t-test was conducted to explore differences in academic progress across the 2010 and 2011 cohorts (see Table 1 for descriptive statistics). No significant differences were observed, indicating that the gains in academic progress observed during the 2010 implementation of the Interteaching model were maintained in the 2011 cohort.

Table 1

<table>
<thead>
<tr>
<th>Academic Variable</th>
<th>2010</th>
<th>2011</th>
</tr>
</thead>
<tbody>
<tr>
<td>Academic Progress</td>
<td>n M (SD)</td>
<td>n M (SD)</td>
</tr>
<tr>
<td>Academic Progress</td>
<td>123 1.78 (.70)</td>
<td>99 1.91 (.57)</td>
</tr>
<tr>
<td>Student Engagement</td>
<td>122 19.10 (3.52)</td>
<td>99 18.86 (2.95)</td>
</tr>
</tbody>
</table>

To further assess the impact of the adapted Interteaching model on academic progress, a comparison was made between 2009 (standard teaching model), 2010 (Interteaching with face-to-face lectures) and 2011 (the adapted Interteaching model with modules) exam results. Figure 1 shows maintenance of improvements in multiple choice question (MCQ) results from 2010 to 2011. However, short answer question exam results reverted to the results observed in 2009. This suggests that some of the gains observed in academic progress observed in 2010 were not maintained in 2011. Alternatively, it could be argued that changes in the MCQ exam results are a more reliable estimate of changes in academic progress as they are objectively scored and the same questions were used in 2010 and 2011. It is possible that examiners expectations were raised in 2011, resulting in a higher standard when grading the short essay questions.
Another item was included in the student survey to assess whether students believed they learned more or less using the Interteaching model compared to the standard teaching model. This attitude item was rated on a 5-point Likert scale. Results are presented in Figure 2. The majority of students reported learning more with the Interteaching model compared to the standard teaching model.

Figure 2. Student responses to the survey item asking whether they believed they learned more with the Interteaching model compared to the standard model.
**Engagement with learning.** A five-item survey was designed by the researchers to assess participants’ engagement in their own learning. These items ask participants to report how often they have engaged in a range of learning experiences including, reading, assignment work, preparing for class, working with other students outside class time, and class discussion. Participants respond on a 5-point scale ranging from “not at all” to “very often”, with a maximum score of 25 indicating higher levels of engagement. An independent samples t-test was conducted to explore differences in engagement across the 2010 and 2011 cohorts (see Table 1 for descriptive statistics). No significant differences were observed, suggesting that the gains in student engagement during the 2010 implementation of the Interteaching model were maintained in 2011.

Students also reported on how engaged they were during tutorials (i.e., enjoyment, level of interest, interaction) when using the Interteaching model compared to the standard model. This attitude item was rated on a 5-point Likert scale. Results are presented in Figure 3. The majority of students reported more engagement with the Interteaching model compared to the standard teaching model.

![Figure 3. Student responses on the survey item asking how engaged they were with the Interteaching model compared to the standard model.](image)

**Student satisfaction.** To assess the impact of the Interteaching model on student satisfaction with the Developmental Psychology course, comparisons were made between 2009, 2010 and 2011 CES GTS scores. These results are presented in figure 3. While the large gains in CES GTS scores observed between 2009 and 2010 were not maintained, results indicate that students were more satisfied with the adapted Interteaching model compared to the standard teaching model used to deliver Developmental Psychology in 2009.
Figure 4. Comparison of CES GTS scores for 2009, 2010 and 2011 presented separately for each campus.

To further assess student satisfaction, students also completed a survey that was specifically designed to gather information about students’ attitudes towards the Interteaching model, rather than their satisfaction with course delivery overall. Students’ rated on a 5-point Likert scale their preference for the Interteaching model over the standard teaching model of lectures followed by tutorials. This data is presented in figure 4. Students indicated a preference for the Interteaching model over the standard teaching model.

Figure 5. Student responses on the survey item asking them to report on their preference for the Interteaching model compared to the standard teaching model.
Students also responded to a series of questions to gather information about the usefulness of modules. Students perceived the modules as particularly useful for content revision, with 84.5% of students noting that they intended to use the modules in their preparation for the end-of-semester exam.

Evaluation of qualitative data for this project also revealed that the model enabled a more engaging (‘It was more fun than the standard model’) and independent (‘Caused me to do more work’) learning experience for students, allowing them to take ownership of learning goals and the acquisition of knowledge through mixed media. The project therefore fulfills RMIT’s strategic objectives by having: developed an urban laboratory that is exciting and engaging; developed sustainable educational resources; provided access to education for a diverse student body; and focused on student engagement and peer interaction to develop a student cohort experience that gives students a sense of belonging.

Overall, the results of the evaluation of the adapted teaching model indicate that the use of modules in the course does not detract from the learning benefits of the Interteaching model. The cost and time effectiveness of modules in comparison to traditional lectures, in addition to the added flexibility for delivery of content, further recommends the continued implementation of modules in the Interteaching model.

Expansion of the research project is now planned across several disciplines at RMIT University in 2012, supported by a LTIF 2012 grant: Interteaching: Dissemination and evaluation across three Colleges ($50,000). This plan will allow for the development of a more comprehensive Interteaching resource package for use at RMIT University. Furthermore, the project will explore the usefulness of the Interteaching model in disciplines beyond psychology and at varying levels of undergraduate study, allowing for a more thorough experimental evaluation of the model.

4. Dissemination strategies and outputs

*Information provision dissemination:* the preliminary results from the 2010 LTIF-funded evaluation of the Interteaching model were presented at an L&T conference in Sydney in July 2010. Results from the 2010 evaluation were also presented at the Schools of Health and Medical Sciences Innovations in L&T Scholarship and Research Day in November 2010. Furthermore, a paper entitled ‘Implementation of the inter-teaching model: Implications for staff’ has been submitted to the journal *Teaching in Higher Education* for publication in 2012. Sufficient data has also been collected to submit a further research paper to a peer-reviewed L&T journal in 2012.

The research team has already initiated an *engaged dissemination* plan. The model was explained as part of a workshop at the 2011 RMIT University Learning and Teaching Expo, leading to several disciplines volunteering to take part in a University-wide evaluation of Interteaching in 2012. As part of the Schools of Health and Medical Sciences L&T Professional Development Program, a professional development session titled *Using desktop capture to teach difficult concepts* was delivered in Feb 2012 to demonstrate how modules have been developed as part of the Interteaching model.
5. Evaluation of project outcomes

Project outcomes proposed in the 2011 LTIF application were met. These outcomes are outlined above in the Project outcomes section of this report. The evaluation framework was successful in informing the expansion of the Interteaching model for delivery across various disciplines at RMIT in 2012, and guiding further evaluation. As described above, the project has resulted in a set of learning, assessment, and evaluation resources that can be shared with other disciplines at RMIT, and the results of the evaluation provide support for the teaching model. The evaluation framework has also resulted in collection of data of sufficient quality to be developed into a research paper and submitted to a peer-reviewed L&T journal in 2012. The outcomes of this analysis have implications for future iterations of the teaching model within Developmental Psychology, and more broadly across RMIT University.

The Interteaching project has provided value for money by providing an innovative, cost-effective method for engaging large classes in active, problem-based, student-driven learning. In particular, this implementation of the Interteaching project has highlighted the usefulness of podules as an alternative mode of delivering course content. The evaluation revealed that podules were well-received by students and represent a time and cost effective means of providing content to students in comparison to traditional face-to-face lectures.

6. Budget report

The funds approved for this project was $20,000. All funds were acquitted during the 2011 period for which they were approved.

For a more detailed summary, please see the attached financial statement for the project. A more detailed document is also attached. This document is a statement of income and expenditure against the budget categories specified in the approved project proposal.

7. References
