Implementing an Interteaching Model to Increase Student Engagement in Large Classes in 2nd Year Psychology

Learning and Teaching Investment Fund 2010: Final Project Report

Implementing an Interteaching Model to Increase Student Engagement in Large Classes in 2nd Year Psychology

Strategic objective addressed:
Student engagement

Project team members:
Dr Mandy Kienhuis, School of Health Sciences, Discipline of Psychology (Project Leader)
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

Project collaborators:
Educational Media Group (EMG), Educational Technology Advancement Group (ETAG)
Student Learning Centre (SLC)

Report authors:
Mandy Kienhuis, Karen Elgar, Andrea Chester, & Peter Wilson

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Executive summary

The Interteaching model is an innovative new 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 on which students need most direction (Boyce & Hineline 2002). Support for Interteaching as an effective Learning and Teaching (L&T) model comes from both descriptive and experimental studies (Saville, Zinn, & Elliott 2005; Saville et al 2006).

In 2010, the Interteaching model was evaluated with the RMIT 2nd-year Developmental Psychology cohort. The efficacy of the approach was overwhelming, with:

- increased Course Experience Survey (CES) scores
- improved grades compared to 2008 and 2009
- student preference for the model compared to standard lecture-tute delivery
- greater engagement in learning
- increased confidence in verbal communication
- student perceptions of enhanced learning

Interestingly, 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 and online content. Student and tutor feedback from the 2010 evaluation has resulted in a number of recommendations for future iterations of the teaching model, and the acceptability of these adaptations will be evaluated in 2011. To support student learning, enhanced tutorial content and an online learning framework is also being developed in collaboration with the Student Learning Centre (SLC) and the Educational Media Group (EMG).

Preliminary results from the 2010 LTIF-funded evaluation of the Interteaching model were presented at an L&T conference in Sydney in July 2010 (Kienhuis, Chester, & Wilson, 2010). Results were also presented at the Schools of Health and Medical Sciences Innovations in L&T Scholarship and Research Day and at the RMIT L&T Forum, both in November 2010. Sufficient data has been collected to submit a research paper to a peer-reviewed L&T journal in 2011. Further, the 2010 project resulted in the development of a set of learning, assessment, and evaluation resources. As part of this engaged dissemination plan, these resources are available for use by others within the University. The project team is also available for consultation regarding their adaptation for use in other courses and programs.
Summary 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.
- Improvements in Good Teaching Scale (GTS) and Overall Satisfaction (OSI) scores in the Developmental Psychology course.
- Presentation at an International L&T Conference, *Schools of Health and Medical Sciences Innovations in L&T Scholarship and Research Day*, and at the *RMIT L&T Forum*.
- An evalutive research study, with sufficient data to be developed into a research paper and submitted to a peer-reviewed L&T journal in 2011.
- Development of enhanced tutorial content in collaboration with SLC.
- An online learning framework is being developed in collaboration with EMG.
A list of the acronyms used in the report and their meanings

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<th>Acronym</th>
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<td>Course Experience Survey</td>
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<td>CHEAN</td>
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Implementing an Interteaching Model to Increase Student Engagement in Large Classes in 2nd Year Psychology

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Project description and rationale

This project implemented and evaluated an innovative new approach to learning and teaching of undergraduate Psychology—the Interteaching model (Boyce & Hineline, 2002). The approach is designed to support mixed-mode delivery, greater depth of learning, and student engagement. The Interteaching model was trialled with students in 2nd year Developmental Psychology within the School of Health Sciences at RMIT University. This class is comprised of approximately 120 (City campus) and 50 (Bundoora campus) students each year, so evaluation of an innovative teaching method for this student group addresses the University’s aim of focusing on quality teaching in large classes. The Interteaching approach was used for the first time at RMIT and the success of the model supports its application more broadly within the School and across the University.

Interteaching was developed by Boyce and Hineline (2002) as an alternative to traditional lecture-based teaching methods. This new pedagogical model is based on behavioural principles and incorporates student-paced learning, reciprocal peer tutoring, and cooperative learning. Interteaching is a mixed-model teaching method characterised by:

(a) guided independent learning,
(b) student-paced small group tutorial discussion (reciprocal peer tutoring), and
(c) brief lectures, developed in response to student feedback.

A distinctive feature of the model is that tutorials precede lectures as a way of distilling the learning topics upon which students most need direction. The teaching model actively supports student skill development in application of theory to real world problems, improving student preparedness for future work roles.

The inclusion of reciprocal peer tutoring supports the development of team work and communication skills that are important learning experiences for students preparing for professional practice. The focus on student engagement and peer interaction also supports the development of a student cohort experience that gives students a sense of belonging.

Before attending each tutorial class, students are provided with an Interteaching Topic Guide that directs them through the topic material, with questions that test comprehension and ability to apply and synthesise the material. Students are expected to come prepared to tutorial classes, where they form dyads or small groups to discuss the topic material. This dynamic is based on cooperative and reciprocal peer tutoring learning models and predicts enhanced learning through peer reinforcement and tutoring others (Griffin & Griffin, 1998). The model lends itself well to self and peer assessment and encourages student responsibility for learning and the development of life-long learning. Discussion is facilitated by tutors, who also provide reinforcement (including marks towards class participation grades) for engaging in effective discussion that focuses on application of topic material to real world problems.

Following each discussion session (40 to 60 minutes), students complete an Interteaching Record to report on the most challenging and interesting aspects of the course content for that week. This feedback is used by the lecturer to develop content for the subsequent brief lecture (40 to 60 minutes) which occurs before the next tutorial class. The Interteaching record has also been used as a self-evaluation tool, where students rate the effectiveness of their peer-to-peer discussions (Saville, Zinn, & Elliott, 2005; Saville, Zinn, Neef, Van Norman, & Ferreri, 2006).

As Interteaching is a new teaching model, evaluation is in the early stages; however, results to date have been promising. The model has been implemented within psychology programs in a number of universities in the United States. Two studies employing experimental designs provide support for Interteaching as an alternative model for teaching psychology. Students have reported a preference for the Interteaching model over traditional lectures, and student performance on class tests was higher following Interteaching compared to standard lectures (Saville et al., 2005;
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Saville et al., 2006). The model has also been implemented at Griffith University in mathematics and science courses and preliminary evidence suggests that the model is viewed positively by students and is associated with improved learning outcomes over standard lecturers (Gregory, Clarke, & Bridgestock, 2009).

The 2010 LTIF Interteaching project evaluated the implementation of the Interteaching model in the 2nd year Developmental Psychology course taught at both the Bundoo and City campuses. The project aimed to address low GTS scores and anecdotal evidence indicating that students were not satisfied with the standard mode of delivery and found it difficult to apply theory presented in the course to future work settings.

Prior to 2010, the Bundoo and City Developmental Psychology cohorts were coordinated as separate classes, with a traditional 2-hour lecture followed by a 2-hour tutorial each week. This teaching was shared by two teaching staff who travelled across campus to deliver lectures on both campuses on the same day. In addition to improving student engagement and learning outcomes, this new model allowed for trialling of a more flexible course delivery. In 2010, lectures were delivered weekly, but on alternate campuses during the teaching semester; students were provided with the option of attending the face-to-face lecture or accessing the lecture as a Lectopia podcast. This schedule was designed to provide flexibility for students and also to increase cost-effectiveness by reducing lecture delivery time and cross-campus travel.

In the 2010 iteration of the Interteaching model in Developmental Psychology, students were provided with an Interteaching Guide for Students (see Appendices) that explained the model and outlined the course structure and assessment process. Students were expected to prepare for tutorials by working through the Interteaching Topic Guide provided for each week’s topic (this was available online via myRMIT Studies; sample available in Appendices). This preparation included completing set reading and responding to a set of Interteaching Discussion Questions. These Interteaching Discussion Questions focused on the Learning Objectives set for each topic. In order to encourage deep learning, students were advised to be prepared to discuss the answers to these questions in class without making reference to their notes.

During tutorials, students participated in small-group peer-to-peer discussion focused on their understanding of the answers to the Interteaching Discussion Questions. They also participated in class discussion and activities designed to apply their understanding of the topic content to real-world issues (referred to as Interteaching Application Questions). Tutors provided verbal and non-verbal reinforcement for engaging in effective discussion, and graded students weekly based on evidence of: (a) prior preparation, (b) active participation, and (c) effective communication skills (see Appendices for assessment rubric). Grades allocated during Interteaching session accounted for 20 per cent of students’ total grade for the course.

Following each Interteaching session, students completed an Interteaching Record (see Appendices). This form was used as a self-assessment tool for students, and a tool for collecting information to develop the topic lecture that would be delivered before the next tutorial. As a self-assessment tool, students rated their own and their group members’ preparation and knowledge, and the difficulty level of the material. As a tool for lecture development, students reported on the most challenging and interesting aspects of the course content, and asked specific clarification questions. Using this same form, students were also able to provide more general feedback on the course and the Interteaching model.

Success of the teaching model was determined by improvements in student grades, student satisfaction, and by pre-post change in student ratings of academic self-efficacy, engagement with learning, and student learning style. Data collected from focus groups with students and tutors, and interviews with lecturers, resulted in recommendations for the continued development of the Interteaching model.
Project outcomes

Project report
A significant outcome of the project is a report on the development and evaluation of a teaching model that will be used to enhance the teaching of large classes within the School of Health Sciences and potentially across the university. A detailed description of the methodology and outcomes of the evaluation is outlined in the following section of this report.

Teaching model
An important outcome of the project is a teaching model that leads to enhanced student engagement and learning in large classes, which can be applied to other courses and disciplines. The model aligns well with the RMIT graduate attributes: the experience of applying theory to real world problems during peer-to-peer discussion sessions and explicitly shaping learning content embraces active learning, develops the work-ready team-work skills of students and encourages innovative solutions; and the active engagement of students in guiding the learning and teaching experience supports the development of life-long learning. The teaching model also meets the Urban in Innovation and Impact objective by: developing a student-centered urban laboratory designed to excite and engage students in learning; integrating web-based learning into a novel teaching architecture; developing sustainable educational resources that can be adapted for use across the university; and providing access to education for a diverse student body through flexible access to learning materials, and catering to diverse student learning preferences.

Package of learning and assessment tools
An outcome of the project is an integrated package of learning and assessment tools that can be applied to other courses and disciplines. SLC were consulted and provided support in developing resources, learning tasks, and assessment methods, ensuring the accessibility for a diverse student group, and assisted in the development of assessment tasks. These tools, including a Developmental Psychology Interteaching Tutors Manual, Interteaching Topic Guide, and Interteaching Record, are available from the project team.

Improvements in GTS and OSI scores
The Interteaching Project led to improvements in GTS and OSI scores for Developmental Psychology. Further detail about these outcomes is provided in the following section of this report.

Information provision dissemination
Preliminary results from the 2010 LTIF-funded evaluation of the Interteaching model were presented at an L&T conference in Sydney in July 2010 (Kienhuis, Chester & Wilson, 2010). Results were also presented at the Schools of Health and Medical Sciences Innovations in L&T Scholarship and Research Day and at the RMIT L&T Forum, both in November 2010. Presentation slides can be downloaded from the RMIT L&T Forum webpage. The project team is also able to present at future RMIT conferences and training sessions as appropriate. Further, sufficient data has been collected to submit a research paper to a peer-reviewed L&T journal in 2011.

Development of an online resource
Consultation is ongoing with EMG regarding development of an online resource. This online resource will be a framework for the placement of online content that can be added to over time. The online resource is scheduled for completion in time to be trialled with a small group of Developmental Psychology students in semester 1, 2011. There is research support for increased student performance in well-structured virtual learning environments (Goldberg & McKhann 2000), and it is expected that the online learning framework will result in greater depth of analysis, retention, and ownership of material.
Development and evaluation of the Interteaching model in Developmental Psychology

Evaluation framework and research design
A single-group pre-post (non-experimental) design was used to evaluate the impact of the Interteaching model on student engagement with learning, academic self-efficacy, and student learning style preferences. Follow-up data was also collected at the end of semester 2 to assess maintenance of change. In addition, to assess the impact of the Interteaching model on academic engagement and student satisfaction, comparisons were made between 2009 and 2010 student grades and CES scores. It was expected that the Interteaching model would result in increases in student engagement, satisfaction, academic achievement, academic self-efficacy, and a deeper rather than a surface approach to learning.

Further, post-test qualitative data was collected by conducting focus groups with students and tutors following implementation of the model. During focus group sessions, information was collected from students regarding the impact of the model on student engagement, student learning preferences, and student self-efficacy, and suggestions for further improvement of the model. Information was collected from tutors regarding the perceived impact of the model on student engagement, as well as advantages and challenges of implementing the model, and suggestions for improvement in future iterations of the model. Two lecturing staff were also interviewed regarding their experiences of the teaching model, providing information regarding the amenability of the model to future implementation.

The research evaluation was approved by the RMIT Science Engineering and Health (SEH) College Human Ethics Advisory Network (CHEAN).

Participants
A total of 142 of 169 students enrolled in the second-year Developmental Psychology course at RMIT University volunteered to participate in the evaluation of the Interteaching program. Participating students were predominantly female (122 females, 20 males), ranging in age from 17 to 47 years ($M = 21.55$, $SD = 4.22$), and were predominantly Australian born (81.7%) with English as their language spoken at home (69.9%).

The return rates for surveys at pre, post, and follow-up (end of semester 2) were 84%, 72% and 27%, respectively. Analyses were conducted on 100 matched sets of pre-post data, and 33 matched sets of follow-up data.

Measures
All survey measures (except the satisfaction survey) were completed at the beginning of semester 1 (pre-test). All measures except the demographic survey were completed by students at the end of semester 1 (post-test) and again at the end of semester 2 (follow-up).

Demographic data
To determine the representativeness of the sample, a range of demographic information was collected from participants, including age, gender, RMIT campus of enrolment, degree enrolled in, country of birth, and use of a language other than English.

Student identification numbers were collected from participants so that pre-, post- and follow-up data could be matched for data analysis. All participants were provided with a research code. This research code was matched with student numbers in a password-protected data file and accessed only to de-identify survey data by replacing the student number with the appropriate research code.
Student Engagement

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”. At post-test, 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.

Academic Achievement

First semester grades were used as a measure of academic performance. Student identification numbers were used to access RMIT student academic records. This process was explained to students on the project plain language statement, and specific consent was obtained from participants to access their academic record. In addition, one item was included in the student survey to evaluate students’ perceptions of their academic progress. This items 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”. In addition, another item was included at post-test 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.

Academic Self-efficacy

The Academic Behavioural Confidence scale (ABCS) (Sander & Sanders, 2006) was designed as a specific measure of academic self-efficacy. It was used in the current study to evaluate change in participants’ confidence for managing academic tasks. The scale is comprised of 24 items and is rated on a 5-point scale ranging from “very confident” to “not at all confident”. Factor analysis suggests that the ABCS measures six factors: confidence in the areas of studying, understanding, verbalising, clarifying, attendance, and grades. The scale has adequate psychometric properties and a total ABCS score has been used to distinguish between different student groups (Sander & Sanders, 2006).

Learning Style Preferences

The Study Process Questionnaire Revised (R-SPQ-2F (Biggs, 2001) was used to measure student learning style preferences. The scale measures two main learning approaches, deep learning and surface learning. Each of these scales has a motive and a strategy subscales, making a total of 4 subscales: deep motive, deep strategy, surface motive, and surface strategy. A deep motive approach is one where a student finds the learning content intrinsically motivating; a deep strategy approach is one that maximises long-term learning; a surface motive approach is one aimed at learning just enough to avoid failing; and a surface approach involves rote-learning information that will be examined.

Student Satisfaction

To assess the impact of the Interteaching model on student satisfaction with the Developmental Psychology course, comparisons were made between 2009 and 2010 CES scores. At post-test, students also completed a survey that was specifically designed to gather information about students’ attitudes towards the Interteaching model. Students’ rated on a 5-point Likert scale their preference for the Interteaching model.
Lecturer, Tutor and Student Perspectives on Challenges and Advantages of the Model

The two lecturers teaching Developmental Psychology were interviewed during semester so that information regarding the challenges and advantages of the model could be collected. Tutors were invited to complete a survey and to participate in a focus group at the end of semester to inform recommendations for adaptations in future iterations of the teaching model. Students were also invited to participate in a focus group to inform future iterations of the model.

Results

Repeated measures ANOVA were conducted to determine differences in survey scores between pre-, post-test, and follow-up.

Results from the evaluation indicated that the teaching model was successful in improving student learning experiences and outcomes. Improvements were observed in student engagement, academic achievement, academic self-efficacy, and student satisfaction.

Student engagement

A moderate size, statistically significant improvement in self-reported student engagement with learning was observed from pre- to post-test, however this improvement was not maintained at follow-up. On the post-test attitude survey, the majority of students (77.9%) reported being “much more” or “somewhat more” engaged with the Interteaching model compared to the traditional model (see Figure 1).

![Figure 1. Student responses on the post-survey item asking how engaged they were with the Interteaching model compared to the standard model.](image-url)
Students qualitative statements reported on the post-test survey also indicate greater engagement with learning. Student-reported advantages of the Interteaching model over the standard model included “Engage more with tutors and other psychology students; builds up my confidence because of the engagement with others”, “Encouraged me to engage in my own learning”, “Influenced me to study topics more thoroughly throughout the semester, rather than just before exams”.

**Academic achievement**

When compared to results in previous years, end of semester exam results indicated that depth of conceptual understanding was greater under the Interteaching model compared to the standard teaching model: the mean total exam result in 2010 was 71.2%, significantly higher than that recorded in 2008 (60.4%) and 2009 (62.6%). Figure 2 shows improvements in multiple choice question (MCQ) and short answer question exam results between 2009 and 2010. There were meaningful improvements in student’s MCQ and short answer exam grades in 2010 compared to 2009.

![Figure 2. Comparison of MCQ and short answer question exam results for 2009 and 2010.](image)

No statistically significant change was observed in participants’ perceptions of their own academic progress. At all three data collection points, on average students indicated that they believed they were progressing at “about the same” rate as they expected (average scores ranged from 2.11 to 2.22 on a 3 point Likert scale). Interestingly, when students were asked at post-test about their learning while engaged in the Interteaching model compared to the traditional teaching model, the majority of students (62.3%) did report that they believed they learned more with the Interteaching model (see Figure 3).
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Figure 3. Student responses on the post-survey item asking whether they believed they learned more with the Interteaching model compared to the standard model.

Academic self-efficacy
There was a statistically significant change on the verbalising subscale of the academic self-efficacy measure from pre- to post-test, and this change was maintained at follow-up. This result indicated that students were more confident in academic tasks dependent on verbal communication skills, for example, asking questions in lectures, presenting to a small group, and engaging in profitable debate with peers. Statistically significant change in overall academic self-efficacy was not observed across the semester.

Student learning style preferences
A statistically significant increase was observed in student self-reports of surface approach learning style, but not deep approach learning style. Further analysis of the learning style data revealed a significant rise from pre- to post-test in both surface motives (e.g., learning just enough to avoid failing) and surface strategies (e.g., rote-learning information that will be examined), and these increases were maintained at follow-up.
Student satisfaction
An improvement in student satisfaction with the Developmental Psychology course was determined by comparing 2009 and 2010 RMIT CES scores. Averaging across campuses, there was an 18-point increase in CES GTS scores and a 5-point increase in CES OSI scores, from 2009 to 2010. Figure 4 shows a comparison of CES GTS scores for 2009 and 2010, presented separately for each campus.

Figure 4. Comparison of CES GTS scores for 2009 and 2010 presented separately for each campus.

Further information about student satisfaction with the model was collected using an attitude scale at post-test. Students reported a strong preference for the model, with the majority of students (63.9%) reporting that they “somewhat prefer” or “strongly prefer” the Interteaching model over the standard model (see Figure 5).
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Figure 5. Students’ teaching model preferences reported on the post survey.

Lecturer, Tutor and Student Perspectives on Challenges and Advantages of the Model

Data was obtained from two lecturer interviews and four tutor surveys. Findings are also reported from a focus group comprised of three of the seven casual tutors teaching Developmental Psychology in semester 1, 2010. The project group found it challenging to recruit participants for the student focus groups. Results are reported here from one focus group comprised of 3 students.

Findings from the tutor survey and focus group results and interviews with lecturers highlighted the challenges and advantages of delivering the Interteaching model. Challenges identified by the lecturers included the additional workload involved in adapting learning materials to fit the new teaching model, and the need to develop lecture material based on student feedback in a short-time period. Advantages identified by lecturers included increased levels of personal engagement with the reenergised course content and reduced discomfort associated with receiving student feedback. Within the model, feedback was regularly received from students and could be addressed in a timely, constructive manner.

Challenges identified by tutors included increased stress associated with being the first point of contact in regards to topic content, increased preparation time compared to other tutorials, and assessing students during each Interteaching tutorial. Students reported that, compared to other courses (where students attend lectures before coming to review the lecture content in tutorials) they felt more responsible for knowing not only the responses to Interteaching discussion questions, but responses to all student questions. Tutors also reported that the preparation time required for Interteaching tutorials was greater compared to the standard teaching model. This increased preparation time was partly due to feelings of increased responsibility, as well as the larger amount of knowledge content covered in each tute. Each week, tutors were required to grade each student on preparation, active participation and communication skills, and this was
challenging to manage while at the same time facilitating class discussion and managing learning processes. Further, tutors found it particularly difficult to rate students on their evidence of preparation. Tutors were concerned that some students who had not prepared before class would be able to “bluff” their way through; whereas some “quiet” students who may have completed a lot of preparation but may not be good at expressing their responses, would be disadvantaged. In regards to assessment, tutors suggested a simpler grading system, grading students on alternate weeks, and using peer tutors as method for make grading more manageable.

Advantages identified by tutors included increased student engagement and increased tutor satisfaction as a result of increased student engagement. Tutors also reported that students appeared to be more prepared and to be more confident in verbally expressing their understanding compared to other tutorials using the standard teaching model.

Student focus group participants reported increased preparation, increased active participation in tutorials, increased confidence, and increased connection with their peers as advantages of the Interteaching model. Students reported dissatisfaction with the scheduling of the Interteaching tutorial and the subsequent lecture on that topic. Having the lecture an entire week later was frustrating, as by this time, students would be expected to have moved on to the next topic to prepare for the next tutorial. This student feedback about scheduling was consistent with student behaviour during semester. Student attendance at tutorials was high yet attendance at lectures was low. Informal feedback from students about attendance suggested that: (a) they felt that they had learned the content well enough and did not feel they need to attend lectures, and (b) that they had already moved on to the next topic by the lecture time, and found attending the lecture confusing.

**Discussion**

Results from the evaluation indicate that the Interteaching model was successful in improving student learning experiences and outcomes. Consistent with expectations, improvements were observed in the following areas:

- increased CES scores
- improved grades compared to 2008 and 2009
- student preference for the model compared to standard lecture-tute delivery
- greater engagement in learning
- increased confidence in verbal communication
- student perceptions of enhanced learning

Some of the student-reported improvements were not maintained at follow-up, however, it is important to note that only a small subsample of the student population completed the follow-up survey. It is possible that those students who completed the follow-up survey were a select group, and this may have influenced the findings. This low follow-up return rate needs to be addressed in future evaluations.

Some anticipated improvements in student approach to learning were not observed. Contrary to expectations that the model, with its emphasis on enhanced student responsibility, would produce deeper approaches to learning, increases in surface learning motives and strategies were noted. As a single-group, non-experimental design was used it is not possible to draw comparisons between student learning approaches in the Interteaching versus the standard teaching model. Student feedback suggests that students engaged in more preparation in the Interteaching model compared to the standard teaching model, perhaps resulting in student perceptions of increased need for a surface approach to study. As a result of this finding, a set of enhanced tutorial activities have been developed to increase student engagement with learning materials. It is expected that this enhanced learning content, developed in collaboration with the SLC, will result in increased use of deep approaches to student learning in future iterations of the model.
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 and online content. Building on Interteaching’s student-driven focus, the 2011 Interteaching project will focus on the development and evaluation of a series of brief podules to replace face-to-face lectures. The usefulness of the enhanced tutorial content and online learning framework will also be evaluated. It is expected that this set of teaching tools will enable a more interactive learning experience for students as they take ownership of learning goals and the acquisition of knowledge through mixed media. Research demonstrates that podcasts are perceived favourably by students (Chester et al, in press), particularly in regard to flexibility of access both in time and location (Jarvis & Dickie 2010), opportunities for revision (Shantikumar 2009) and learning satisfaction (Ip et al 2008). As the use of "podules" is innovative, it is important that the effect of their use on student satisfaction and learning outcomes are assessed.

Analysis of feedback from tutors highlighted some important areas for improvement, including increased support and changes to the assessment process. In 2011, tutors will be provided with a more detailed tutors’ guide, be required to assess each student on alternate weeks rather than every week, and be provided with a more detailed assessment rubric. It is expected that these changes will improve the quality of tutorials and reduce stress experienced by casual teaching staff.

The results from the Interteaching evaluation indicated that the Interteaching model was successful in improving student learning experiences and outcomes across a range of indicators. The evaluation framework also allowed for analysis of the challenges and advantages of implementing the model from the perspective of teaching staff and students. The outcomes of this analysis have implications for future iterations of the teaching model within Developmental Psychology, and more broadly across RMIT University.
Dissemination strategies and outputs

Information provision dissemination
Preliminary results from the 2010 LTIF-funded evaluation of the Interteaching model were presented at an L&T conference in Sydney in July 2010 (Kienhuis, Chester & Wilson, 2010). Results were also presented at the Schools of Health and Medical Sciences Innovations in L&T Scholarship and Research Day and at the RMIT L&T Forum, both in November 2010. Presentation slides can be downloaded from the RMIT L&T Forum webpage. The project team is also able to present at future RMIT conferences and training sessions as appropriate. Sufficient data has been collected to submit a research paper to a peer-reviewed L&T journal in 2011.

Engaged dissemination
The results of the Interteaching model have been shared within the Discipline of Psychology and Course coordinators have expressed interest in implementing the model in other courses in subsequent years, with the research team’s consultation and collaboration. Further, the 2010 project resulted in the development of a set of learning, assessment, and evaluation resources. As part of this engaged dissemination plan, these resources are available for use by others within the University (see Appendices). The project team is also available for consultation regarding their adaptation for use in other courses and programs.

Linkages
The Interteaching project has developed linkages both within and outside the discipline of psychology. Within the discipline of psychology at RMIT the compelling evidence of enhanced student learning and increased CES scores has generated discussions within the undergraduate program team about implementing the model in courses beyond Developmental Psychology. The project has stimulated useful discussions about good teaching and student engagement.

Through the dissemination process and in particular presentations at international psychology conferences the project has forged connections with psychologists at other universities interested in adopting the model. Most recently, Visiting Research Fellow, Dr Maree Gosper, from Macquarie University spent time with the Interteaching team and was impressed by the model. Maree, who was at RMIT to explore ways of engaging students in large classes, expressed interest in the Interteaching model in a range of disciplines including education. We will continue to develop this potential collaboration.
Evaluation of project outcomes

Project outcomes proposed in the 2010 LTIF application were met. These outcomes are outlined above in the Project outcomes section of this report.

A combination of survey and focus-group methods was used to evaluate the Interteaching model. To assess the impact of the Interteaching model on learning outcomes and student satisfaction, comparisons were made between 2009 and 2010 student grades and CES scores. To further assess students’ perceptions of the impact of the teaching model of their learning experience, students completed surveys on their academic progress, learning style, academic confidence, and engagement with learning. Data was also collected on students’ use of lecture recordings, and their satisfaction with the teaching model. Additional post-test qualitative data was collected by conducting focus groups with students and tutors.

The results of the evaluation are reported in detail above. The evaluation framework was successful in informing the redevelopment of the teaching model for delivery in 2011, 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 2011.

The evaluation framework also allowed for analysis of the challenges and advantages of implementing the model from the perspective of the course coordinator and teaching staff. 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. The Interteaching Project aligns with the values identified in the RMIT Strategic Plan 2010 by (a) focusing on learning that is useful, relevant, and applicable to the needs of communities and workplaces where they are likely to obtain employment, and (b) promoting connectedness by incorporating team work as an integral component of the curriculum. The Interteaching Project aligns to the priority areas identified in the RMIT Strategic Plan 2010 by (a) engaging students in work-relevant learning (b) creating a stimulating and satisfying learning environment for students (Priority 5), and (c) developing and evaluating a model of teaching that if successful, can be applied across the University (Priorities 7 & 8). The project is also well aligned with the RMIT graduate attributes. The experience of applying theory to real world problems during peer-to-peer discussion sessions and explicitly shaping learning content embraces active learning, develops the work-ready team work skills of students and encourages innovative solutions. Further, the active engagement of students in guiding the learning and teaching experience supports the development of life-long learning.
References


List of appendices

Interteaching Guide for Students
Interteaching Topic Guide example: Adolescent topic
Interteaching Record (includes self-assessment tool)
Interteaching Contribution Assessment Rubric
Developmental Psychology Interteaching Tutors Manual (available from project team on request)
What is Interteaching?

Interteaching was developed by Boyce and Hineline (2002) as an alternative to traditional lecture-based teaching methods.

Interteaching includes:

(a) guided independent learning
(b) student-paced small group tutorial discussion, and
(c) lectures that are developed in response to student feedback.

A distinctive feature of the model is that tutorials precede lectures.

Before attending each tutorial class, students are provided with a *Topic Guide* that directs them through the topic material, with questions that test comprehension and ability to apply and synthesise the material.

Students are expected to come prepared to tutorial classes, where they form small groups to discuss the topic material. Students start off their discussion by working through the questions that they answered during their self-directed learning. Students are expected to know the answers before they come to tutes and be able to explain their answers to their peers. Discussion then moves on to more in-depth application of the topic content to real-world situations and problems.

Discussion is facilitated by tutors, who also provide reinforcement (including marks towards class participation grades) for engaging in effective discussion.

Following each discussion session, students complete an *Interteaching Record* that asks students to report on the most challenging and interesting aspects of the course content. This feedback is used by the lecturer to develop content for the subsequent lecture which occurs before the next tutorial class.

As Interteaching is a new teaching model, evaluation is in the early stages; however, evaluations to date have been promising (Saville et al., 2005; Saville et al., 2006). Your lecturers will be evaluating this model and you will be invited to participate in the evaluation by completing a survey at the beginning and end of semester.
Implementing an Interteaching Model to Increase Student Engagement in Large Classes in 2nd Year Psychology

Why are we using Interteaching?

The Interteaching model is designed to increase active learning and student engagement.

You’ve probably heard before that explaining something to someone else is a really good way to learn it. That’s why in the Interteaching model, students are expected to know the answers before they come to tutes and be able to explain it to their peers.

The model also includes discussion of the application of the content to solve real problems. This is to assist students to see the relevance of the course content to their future professional work.

What do we do each week?

Students will attend three/four hours of classes per week one two-hour tutorial and a one/two-hour lecture.

Students are expected to prepare for tutorials by working through the Interteaching Topic Guide provided for each week’s topic (available on the Learning Hub). This preparation includes completing set reading and responding to a set of Interteaching Discussion Questions. These Interteaching Discussion Questions focus on the Learning Objectives set for each topic.

During tutorials, students participate in small-group discussion to discuss the answers to the Interteaching Discussion Questions and to apply the topic content to real-world issues. You should be prepared to discuss the answers to these questions in class without making reference to your notes.

Tutorials will also provide information needed to complete the course assessments.

At the conclusion of each tutorial class, students complete a feedback sheet to report on the most interesting and challenging aspects of the course content. This feedback is used by the lecturer to develop content for the next week’s lecture.

SELF – DIRECTED STUDY

Work through the Interteaching Topic Guide before tutorial:
* Complete set readings
* Complete Interteaching Discussion Questions

TUTORIAL

Discuss and apply content:
* Small-group discussion with real world application
* Assessment preparation
* Self-evaluation and opportunity to shape content of lecture

LECTURE

Enhance your understanding of the material:
* Follow-up topics of interest
* Supplement notes taken during your own study and the tutorial
How is my contribution to Interteaching Discussions assessed?

Your contribution to the tutorial Interteaching Discussion is assessed weekly, and counts for 20% of your total grade for this course.

Each week tutors will observe discussion during Interteaching Discussion sessions and will allocate marks to students based on evidence of

(a) prior preparation,
(b) active participation, and
(c) effective communication skills.

Each week tutors will rate your contribution in each of these three areas, and at the end of semester will appoint a mark out of 20.

How do I organise my study?

In RMIT courses, students are expected to spend at least 1 hour of self-directed learning for every 1 hour of teacher-guided learning.

In general, students are expected to spend more time on self-directed learning, up to 2 hours for every 1 hour of teacher guided class contact, to achieve high levels of academic results and as they progress through to the later years of their program.

This is also what is expected in Developmental Psychology. It is expected that students will spend at least 3 to 4 hours preparing for each Interteaching tutorial. More time would be required to do the optional quizzes, optional reading and optional activities that are provided each week.

In the Interteaching model, lectures follow tutorials. Podcasts of the lecture will be available from the Learning Hub, allowing you to access this information when it is most convenient for you. Face-to-face lectures are delivered on each campus in alternate weeks across the semester (see Interteaching schedule p. 5). It is not necessary for you to view the lecture before the tutorial that week.

References:


Getting the most out of the Interteaching model - Tips for students

Tips on note taking

- The Interteaching model provides you with several opportunities to test and refine your knowledge of the course content. In addition to making summaries of the set reading, it would also be useful to keep a log of all information that you find challenging or unclear. The tutorials will provide you with time to discuss these issues with your peers and tutor to refine your understanding. The Interteaching Record allows you to also report these issues to the lecturer so that they can be addressed in the following lecture. Time should be taken regularly to make sure all challenging and unclear points have been addressed in your log following the relevant tutorial and lecture.

- Following the tutorial and lecture, it is likely that you will want to further expand on the notes you created during your self-directed study. Allowing time to incorporate notes from your self-directed study, tutorial discussion, and lecture into a final document will provide you with clear topic summaries at exam time.

Using study groups

- Forming a study group can be a great way to prepare and revise Interteaching Discussion material. Research suggests that you retain only 10% of what you read, but up to 70% of what you talk over with others. Therefore, working with others can provide you with an opportunity to engage more meaningfully with the material.

- Using the study group to also develop tools for your exam preparation (e.g. summaries, multiple choice questions etc.) can be a highly effective way of managing your time and maximizing your learning. Sharing tasks can cut down on your workload, and actively discussing the material, rather than re-reading notes, can assist you in retaining the information more easily.

Time management

- The Interteaching model represents a more flexible delivery of information to students. While lectures represent a core component of the program, it is not essential for you to attend face-to-face lectures regularly in order to participate in the tutorials (as per most study modes). The availability of lectures via Podcast will allow you to engage with this material when convenient for you. Your regular commitment to the class will be your self-directed study (completion of the Interteaching Topic Guide), interaction in the tutorial every week, and engaging with the lecture (whether face-to-face or podcast). Sufficient time should be allocated towards these tasks.

Tutorial preparation

- A large component of the Interteaching model is an emphasis on cooperative peer learning. This is assessed by your preparation, participation, and communication during tutorials. While the completion of the Interteaching Discussion Questions prior to class should be your priority, we would also encourage creative means of assisting the class in learning. Therefore, tutors will also take into account extra methods of peer assistance when considering participation. For example, you may like to contribute to the class by forwarding useful weblinks, or bringing in relevant news articles to the class for discussion. These can be directed to the tutor for dissemination where appropriate.
## Interteaching Schedule

<table>
<thead>
<tr>
<th>Week</th>
<th>Date</th>
<th>Interteaching Lecture Topic</th>
<th>Interteaching Tutorial Topic &amp; Lab Report Skills</th>
<th>Lecturer &amp; Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Wed. March 3rd</td>
<td>Course Orientation Introduction to Interteaching Introduction to Developmental Psychology</td>
<td><em>(Note: No tutorial this week)</em></td>
<td>MK Bun/City</td>
</tr>
<tr>
<td>2</td>
<td>Wed. March 10th</td>
<td><em>(Note: No lecture this week)</em></td>
<td>Prenatal Development and the Newborn</td>
<td>MK No lecture</td>
</tr>
<tr>
<td>3</td>
<td>Wed. March 17th</td>
<td>Prenatal Development and the Newborn</td>
<td>Physical Development in Infancy and Childhood</td>
<td>MK Bun</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Lab Report: APA Style Referencing</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Wed. March 24th</td>
<td>Physical Development in Infancy and Childhood</td>
<td>Cognitive development I – Piaget &amp; Vygotsky</td>
<td>PW City</td>
</tr>
<tr>
<td></td>
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</tr>
<tr>
<td>6</td>
<td>Wed. April 14th</td>
<td>Cognitive development II – Information Processing Accounts</td>
<td>Language development Lab Report: Method section</td>
<td>PW City</td>
</tr>
<tr>
<td>7</td>
<td>Wed. April 21st</td>
<td>Language development</td>
<td>Personality and social development I Lab Report: Results section</td>
<td>MK Bun</td>
</tr>
<tr>
<td>8</td>
<td>Wed. April 28th</td>
<td>Personality and social development I</td>
<td>Personality and social development II Lab Report: Discussion section</td>
<td>MK City</td>
</tr>
<tr>
<td>9</td>
<td>Wed. May 5th</td>
<td>Personality and social development II</td>
<td>Issues related to adolescence Lab Report: Trouble-shooting</td>
<td>MK Bun</td>
</tr>
<tr>
<td>10</td>
<td>Wed. May 12th</td>
<td>Issues related to adolescence</td>
<td>Early Adulthood Lab Report Due</td>
<td>MK City</td>
</tr>
<tr>
<td>11</td>
<td>May 19th</td>
<td>Early Adulthood</td>
<td>Middle and Late Adulthood Semester Review and Exam Preparation</td>
<td>MK Bun</td>
</tr>
<tr>
<td>12</td>
<td>May 26th</td>
<td>Middle and Late Adulthood Review</td>
<td><em>(Note: No tutorial this week)</em></td>
<td>MK Bun/City</td>
</tr>
</tbody>
</table>
Adolescence

In this topic, we focus on the social and emotional development during adolescence. We look at how conceptions of adolescence have changed across time, and how the experience of puberty differs across cultures and generations. We look at the psychological impact of puberty, including the relationship between pubertal timing and adjustment, and how parents and society can reduce adolescent distress associated with the onset of puberty. We explore some important issues of adolescence, including the importance of body image for adolescent self-esteem, stereotypes about adolescent thinking and behaviour, and adolescent deviancy. Throughout this topic, we consider the important role of parents and the broader society in promoting positive adolescent development.

Learning Objectives:

After completing this topic you should be able to:

1. Understand the importance of culture and history when considering puberty as a rite of passage
2. Understand the secular trend in puberty.
3. Describe the relationship between early maturation and girl’s adjustment.
4. Explore ways that parents and broader society can help minimise an adolescent’s puberty distress.
5. Understand the importance of body image for adolescent’s overall self-esteem, the role of media influence in adolescent body image, and effective ways to promote positive body image
6. Understand Elkind’s concepts of egocentrism, imaginary audience, and personal fable and how these tendencies influence adolescent behaviour
7. Evaluate the research evidence for the following stereotypes about adolescence: (a) adolescents are unusually sensitive to peer influence, (b) adolescents are prone to take risks, (c) adolescents are highly emotional.
8. Develop an understanding of the factors associated with deviancy vs. adjustment in adolescence (tip: see Different teenage pathways section, pp. 276-279)
9. Explain how parents and broader society can promote positive adolescent adjustment.
Set readings for this topic
   Ch 8, pp. 235-253,
   Chapter 9, pp. 264-265, 268-282

Online student resources
Student resources for this text are available at:
http://bcs.worthpublishers.com/belsky2e/default.asp#t_519560____

What you need to do this week
1. Read this *Topic Guide*

2. Complete the set reading for this topic from Belsky (2010)

3. Complete the Interteaching Questions before attending your tutorial class. You should be prepared to discuss the answers to these questions in class without making reference to your notes. In the *Interteaching Session* you will also be expected to apply the information you have learnt from your reading to address a real world issue.

4. Attend the *Interteaching Session* (tutorial).

Interteaching Discussion Questions
1. Describe the change in puberty onset over the last 140 years, and consider the implications of this change.

2. Describe the social risks and potential psychological problems for a girl who matures earlier than her peers.

3. (a) Describe Harter’s research findings regarding the relationship between adolescent body image and overall self-esteem, and (b) describe the influence of media images on adolescent body image.

4. Define Elkind’s imaginary audience and personal fable. Give a real-world example of each phenomenon. Finally, explain why the personal fable promotes teenage risk-taking.

5. Discuss three early warning signs/risk factors that predict a child might get into serious trouble as a teen.

6. You’ve been asked to speak to a group of parents about how to promote positive adolescent adjustment. What would you advise?
Optional Quiz
Take the *Experiencing the lifespan* quiz for Ch. 8 & 9:
http://bcs.worthpublishers.com/belsky2e/default.asp#519560__525916_

Optional Reading
If you’ve developed an interest in the topic, you may be interested in the following:

**Elkind’s concepts of egocentrism, imaginary audience, and personal fable**
If you want to read more about Elkind’s concepts of *egocentrism, imaginary audience*, and *personal fable* and how these tendencies influence adolescent behaviour, read pp. 1029-1032 of Elkind’s 1967 classic study published in *Child development* in 1967.


Optional Activity
If you’ve developed an interest in the topic, and want to explore more, here are some additional activities:

**Translation of information for parents on the ABCD Parenting Young Adolescents website**
If you’re interested to see an example of how this content is applied in a real world setting, follow up one or more of the following weblinks:

Some tip sheets on Parenting Adolescents available from the ABCD Parenting Young Adolescents website: http://www.abcdparenting.org/

Go to Parenting Information and explore the articles that cover “Common problems” and “Ideas for parents”
Implementing an Interteaching Model to Increase Student Engagement in Large Classes in 2nd Year Psychology

Developmental Psychology
Interteaching Record
Week 9 Topic: Issues of Adolescence

1. Please rate how prepared you were before coming into this tutorial

| Not prepared (1) | A little prepared (2) | Adequately prepared (3) | Very prepared (4) | Over-prepared (5) |

2. Please rate your interest in this topic

| Not at all interesting (1) | Somewhat interesting (2) | Very interesting (3) |

3. Please rate how difficult you found this topic

| Very easy (1) | Easy (2) | Just the right level of challenge (3) | Difficult (4) | Very difficult (5) |

4. Please rate your knowledge of this topic during the Discussion session

| Poor (1) | Adequate (2) | Fair (3) | Excellent (4) |

5. Please rate your group's collective knowledge during the Discussion session

| Poor (1) | Adequate (2) | Fair (3) | Excellent (4) |

6. Were there any parts of the topic that you did NOT understand and would like covered in the lecture?

- The importance of culture and history when considering puberty as a rite of passage
- The secular trend in puberty.
- The relationship between early maturation and adjustment.
- Ways that parents and broader society can help minimise an adolescent’s puberty distress.
- Body image and self-esteem, and promoting positive body image
- Elkind’s concepts of egocentrism, imaginary audience, and personal fable and how these tendencies influence adolescent behaviour
- Research evidence for stereotypes about adolescence
- Factors associated with deviancy vs. adjustment in adolescence
- How parents and broader society can promote positive adolescent adjustment.
- Other

Please provide any additional information about what you found difficult for the topics selected above:

7. Were there topics that you found really interesting and you’d like more information about them? (Please list below)

8. Anything you want to ask or tell the lecturers?
## Interteaching Discussion Contribution Feedback Sheet

**Student Name:** _____________________________       **Tutor:** ___________________________

<table>
<thead>
<tr>
<th>Criterion</th>
<th>Rating</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Prior preparation demonstrated:</strong></td>
<td>Poor (0-49) N</td>
</tr>
<tr>
<td>• demonstrates prior preparation by contributing relevant and interesting responses to discussion focused on <em>Interteaching Discussion Questions and Interteaching Application Questions</em> For example • discusses theories, examples, case studies, research papers as presented in text • contributes original examples, and examples from further reading and activities, to demonstrate understanding</td>
<td>Adequate (50-59) PA</td>
</tr>
<tr>
<td><strong>Active participation:</strong></td>
<td>Poor (0-49) N</td>
</tr>
<tr>
<td>• actively participates in small group and large group discussion focused on <em>Interteaching Questions</em> • actively participates in small and large group discussion focused on <em>Interteaching Application Questions</em> • focuses on the relevant discussion (i.e., does not waste time in irrelevant conversation/activities) • shares useful resources with the class, e.g., by forwarding useful weblinks, or bringing in relevant news articles to the class for discussion</td>
<td>Adequate (50-59) PA</td>
</tr>
<tr>
<td><strong>Evidence of effective communication skills:</strong></td>
<td>Poor (0-49) N</td>
</tr>
<tr>
<td>• listens attentively to others • clearly expresses responses and ideas • allows others an opportunity to share responses and ideas • encourages others to share responses and ideas using verbal and non-verbal prompts • challenges others’ responses and ideas in an appropriate, assertive manner • responds in an appropriate, assertive manner to challenges from other students and tutor</td>
<td>Adequate (50-59) PA</td>
</tr>
</tbody>
</table>

Average across three domains out of 100 = %

**General comments:**