

Learning and Teaching Investment Fund 2010: Final Project Report



Final report for the “Lectorial” Project: Trialling the use of “Lectorials” to enhance learning and teaching in large classes

Strategic objective:

The 2010 LTIF “Lectorial” Project was an invited Strategic Proposal which aimed to:

- Provide a positive student experience
- Enhance student engagement

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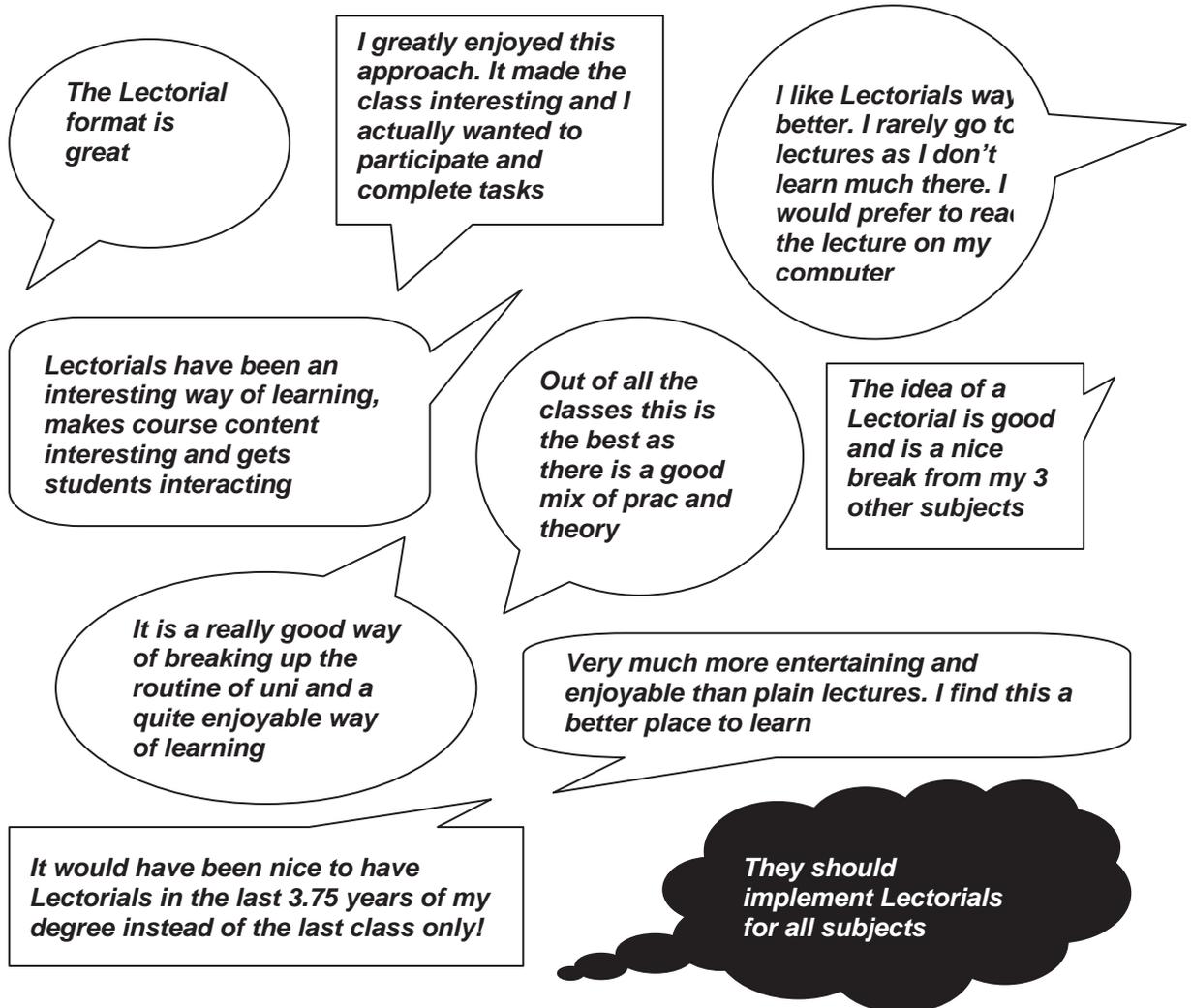
Contribution to 2010 DVC(A) Publication

Acknowledgment

We would sincerely like to thank the staff and students involved in the project and the University for the funding to undertake this project.

Executive Summary

Pedagogy tells us that learning is best when it is student centred, active and collaborative. What if we could combine the intimate learning and teaching environment of the tutorial within a large class?



What has come out of it is student-centred learning, constructivist learning, the idea that we share the learning, there is a shift of balance that it doesn't all belong with the facilitator, the lecturer, it isn't just about the slides on the screen and just talking to the slides. You can't just read it out and just be talking to it, you must change the learner to be doing something too. I think the Lectorial pushes you there, in the first instance because of the bigger numbers, but what you do can be replicated across a number of different classes and class sizes.

The aim of the 2010 LTIF “Lectorial” project was to evaluate the feasibility and effectiveness of implementing the Lectorial approach - a large class, collaborative and interactive, enquiry-based learning approach - in new generation learning spaces in the College of Design and Social Context at RMIT. Traditionally large classes are taught through lecture, often followed by small tutorial/seminar. Generally, large lectures are teacher centred and didactic, with students passive recipients of information, resulting in low levels of engagement and superficial approaches to learning. Literature indicates that shifting the emphasis to active student-centred learning has significant outcomes in terms of increasing student engagement, problem solving ability and positive learning outcomes.

There are three elements to providing an active student-centred learning environment within a large class using the “Lectorial” approach:

Element 1. The use of New Generation Learning Spaces which provide flexible room design, enhanced with technology, to increase active learning.



Element 2. The provision of course content on-line underpinned by an interactive and guided instructional design for students to access prior to the “Lectorial”, at a time and place that accommodates life/study/work patterns.



Element 3. The creation of an active, engaging, enquiry based large class environment where students work in small groups and have the opportunity to maximise peer to peer and student to teacher learning. Most significantly, through the preparatory online work, students are supported to develop their declaratory knowledge base which is then extended and augmented into higher order declarative knowledge through the interactive “Lectorial” mode.



In this project, three undergraduate courses, ranging from first to fourth year, and including a cohort of over three hundred students from across nine programs, were revised and offered using the “Lectorial” approach. Staff were given support in curriculum design, teaching and learning approaches, and most significantly, the use of technology, such as Interactive Whiteboards. Professional development support was discipline based, inquiry based and embedded in local practices in line with most recent findings from the literature.

The results indicate that moving to a “Lectorial” approach is a significant and manageable step forward and there are pedagogical and viability advantages. Most importantly, for students and staff there are learning gains with this mode of teaching through new ways of learning and new ways of teaching. In addition, there are financial advantages without a compromise in learning outcomes. In terms of the challenges, the lack of functionality of the technology and the low skill levels of academics in their use, as well as teacher-centred conceptions and changing in response to the New Generation Spaces were the major issues.

The project found that the move to a “Lectorial” mode requires that staff and students adopt a new paradigm of learning and teaching, and that this takes vision, enthusiasm and persistence on the part of the teacher. On the part of the institution, it involves learning and teaching leadership; flexible, contextual, just-in-time and just-for-me professional development, especially when it comes to the use of technology; and spaces that are large, flexible and equipped with appropriate technology and furnishings.

“I have a better understanding of meeting the student needs, of when and how they might learn, which is what we are supposed to be here for. So I have opened my mind beyond the lecture and the tute. [Staff member]”

“I greatly enjoyed this approach. It made the class interesting and I actually wanted to participate and complete tasks. [Student]”

1.2 Project Outcomes and Impacts

LTIF 2010 “Lectorial” PROJECT OUTCOMES AND IMPACT			
	Project Proposal	Project Achievements	Challenges/Recommendations
Outcome 1	<p><i>New ways of teaching</i></p> <p>1. Enhanced staff knowledge of and experience in student-centred teaching in large classes</p>	<p>A number of significant outcomes were achieved variously by all staff:</p> <ul style="list-style-type: none"> • <i>A deeper understanding of the theory and practice of student centred teaching, with an emphasis on peer supported collaborative learning through structured small group work.</i> • <i>An increased use of blended-learning with the University online learning management system extending the boundaries of the ‘classroom’.</i> • <i>A greater understanding of space and technology from trialling and working within a New Generation Learning Space.</i> <p>By the end of the project, three of the four teachers appeared open and willing to shift their conceptions of learning and teaching to one that was more student-centred in nature.</p>	<p>Challenges that emerged for staff were:</p> <ul style="list-style-type: none"> • <i>Engaging students in the preparatory work</i> • <i>Dealing with classroom management issues</i> • <i>Preventing student mental fatigue</i> • <i>Using team teaching as this was confusing for students</i> • <i>Dealing with inappropriate furnishings</i> • <i>Adopting new technologies</i> • <i>Overcoming underpinning conceptions of learning and teaching.</i> <p>One staff member experienced considerable dissonance between the space available and the preferred teaching style. Eventually this staff member chose to move the furnishings in such a way as to create a more formal classroom (with students all facing forward), which accommodated a more teacher-centred ‘lecturing’ style.</p> <p>Thus, space and/or technology alone were not a sufficient catalyst to create change in teaching and learning approaches for all the teachers.</p>
Outcome 2	<p><i>New ways of learning</i></p> <p>2. Improved student experiences and learning outcomes (as evidenced by student feedback data)</p>	<p>The use of the “Lectorial” mode and the room-set-up facilitated interaction and active learning, especially through the use of small group work.</p>	<p>Staff experienced a range of successes and frustrations with the technology.</p> <p>Notably, multiple Interactive White Boards (in this case</p>

		<p>By the end of the semester, the overwhelming majority of students reported that they would prefer a "Lectorial" mode to a traditional lecture.</p> <p>Students responded very positively to the use of small group work.</p> <p>The majority of students reported:</p> <ul style="list-style-type: none"> • that working in small groups was a good way to learn and helped them to learn from other students • that the activities they did in the "Lectorial" • that the way the room was set-up helped their learning <p>The materials on the online course site were a very important aspect that supported student learning, encouraged engagement and fostered a sense of connectivity.</p>	<p>Teamboards) and the responses from students echoed this.</p> <p>There was a mixture of support for the benefits of interactivity, but there were more negatives than positives regarding the limited functionality of the Team Boards and low levels of staff skills in how to use them effectively.</p> <p>Areas where staff professional development support is most urgently needed include.</p> <ul style="list-style-type: none"> • ongoing embedded support to facilitate seeing the value of using more meaningful, challenging and interesting teaching approaches and to make changes in learning and teaching philosophies and practices, especially in assessment • help to respond to working in a space that does not have a central 'teacher's position' and increasing skills in classroom management. Practice spaces in local school contexts should be made available to enable staff to trial student centred collaborative small group teaching underpinned by sound pedagogy. • support to enhance technology skills, requiring ongoing, extended and in-context professional development in the use of technology, both as an adjunct to in-class activities and in the classroom.
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<p>Outcome 3</p>	<p>Insights into financial and space implications</p> <p>3. Improved understanding of the financial and space requirements of different learning and teaching modes</p>	<p>Moving to a “Lectorial” mode can offer increased student learning and significant savings when class sizes exceed 40.</p> <p>Maximised efficiencies are gained at class sizes of between 75 and 120.</p> <p>Space requirements for “Lectorials” include:</p> <ul style="list-style-type: none"> • Large flat floored spaces with clear visibility from all directions • Tables which are stable and can be moved into a number of configurations • Chairs that can be easily moved around the space, can swivel to allow the user to quickly visually access all parts of the space, and provide comfort through height adjustment • Lighting, acoustics and thermal levels which can be controlled to ensure comfort¹ • Display mechanisms which allow creation, sharing and capture of information including writable walls and tables, whiteboards, glass walls, and not limited to IWB’s or e-beams. 	<p>Recommendations for the space in 8.8.46-47:</p> <ul style="list-style-type: none"> • Staff wear a lapel microphone and a wireless microphone be available and working at all times, and training be provided for staff and students on their use. • Lockable castors be retrofitted to the tables in order to provide more flexibility. • Chairs be replaced with ones that can swivel, or castors be retrofitted to existing chairs. • IWBS that can be independently controlled and appropriately positioned on flexible brackets be installed in the rooms. • Simple whiteboard/ glassboard/ glass or white walls be installed in the spaces for teacher explanations and to give students the opportunity work collaboratively and share their work. <p>Recommendations for the space in 9.3.4A-4B:</p> <ul style="list-style-type: none"> • Placement of additional screens be explored to overcome line of sight issues otherwise the rooms are not suitable to be used together as a “Lectorial” space due to the placement of the pillar.
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¹ Mitchell et al, 2010 note that student comfort must be one of the premium parameters met, see <http://learnline.cdu.edu.au/retrofittingunispace/>

			<ul style="list-style-type: none"> • Interoperability issues be addressed and alternative processes developed and new software installed. <p>The majority of NGLSs at RMIT accommodate 40 or fewer students. This space restriction will privilege a traditional teacher centred lecture plus small tutorial mode of teaching and thus reduce the opportunity to implement "Lectorials" of 40 and above more widely.</p> <p>Given the significant issues with technology experienced by staff, notably with Teamboards, it would be beneficial for Property Services, Edutag ITS LTU and HR to work collaboratively with Colleges to drive university wide reform on:</p> <ul style="list-style-type: none"> • Selecting appropriate IWBs for teaching and learning contexts • Providing ongoing professional development and up-skilling in the use of IWBs • Providing technical support to ensure IWBs are maintained and software updated
Outcome	<p>Dissemination and development</p> <p>4. A report on the implementation of Lectorials in three disciplines at RMIT, with an analysis of overall success of the project including financial and space implications, enablers</p>	Achieved	

	<p>and barriers and implications for future L&T learning and teaching modes.</p> <p>5. A staff forum that introduces the “Lectorial” mode and showcases project outcomes including examples of changed practice in the use of active learning strategies and innovative technologies in large classes.</p> <p>6. Presentation to DSC College Executive with proposed mode for adoption across schools and next steps.</p> <p>7. A blog and website that documents and showcases the life of the “Lectorial” project</p> <p>8. A number of learning and teaching case studies of innovative practice in large class teaching disseminated through the RMIT ED magazine etc.</p> <p>9. A number of Scholarship of Learning and Teaching (SoTL) papers for publication that document practice from both the space design and learning and teaching perspectives.</p>	<p>August 2010 Presentation to College of DSC Strategic Learning and Teaching Group See Appendix C</p> <p>September 2010 Presentation to College of DSC Executive (on use of IWB) by Dr Scott Mayson</p> <p>Lectorial site developed for staff in RMIT online learning management system including case studies</p> <p>Inclusion in 2010 DVC(A) Online Publication See Appendix F</p> <p>November 2010 Presentation at LEARN Event: From Campus to Classroom by B de la Harpe and S Mason See Appendix D</p> <p>Papers underway</p>	<p>The development of instructional resources (regardless of whether online or hard copy) has a low effect size on changing teacher knowledge and behaviour, and on student outcomes. Therefore, it is important that professional development and dissemination of any resources developed be accompanied by longer term and more effective strategies, including activities that challenge conceptions and include observation and feedback on classroom teaching, including microteaching.</p>
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1.3 List of Acronyms and Abbreviations

RMIT

Royal Melbourne Institute of Technology University

DVC(A)

Deputy Vice Chancellor (Academic)

DPVC(L&T) (also APVC(L&T))

Deputy Pro Vice Chancellor (Learning and Teaching) (also Associate PVC (L&T))

LTIF

Learning and Teaching Initiative Fund

DSC

College of Design and Social Context

LEaRN

Learning Environment Applied Research Network

SoTL

Scholarship of teaching and learning

NGLS

New Generation Learning Spaces

L&T

Learning and Teaching

Blackboard

Blackboard™, the distributed learning management system used at RMIT

Teamboard

Teamboard™, the specific brand of an interactive whiteboard used at RMIT

professional development

Professional development

CES

Course Experience Questionnaire

CHEAN (DSC)

College Human Ethics Advisory Network, Design and Social Context

SECTION ONE

1. Detailed Project Description and Rationale

2. Methodology

3. Project Outcomes and Impacts

Outcome 1 - New ways of teaching

Outcome 2 - New ways of learning

Outcome 3 – Insights into financial and space implications

Outcome 4 - Dissemination and development

4. Lessons learned

1 Detailed Project Description and Rationale

The aim of the “Lectorial” project was to evaluate the feasibility and effectiveness of implementing a large class collaborative and interactive enquiry-based learning environment. This learning and teaching approach is often used in smaller studio-style classes, and to great effect (Murdoch & Guy, 2002). Traditionally large classes are taught through lecture followed by small tutorial/seminar. The large lecture is often teacher centred and didactic, with students as passive recipients of information, resulting in low levels of engagement and superficial approaches to learning (Biggs & Tang, 2007; Barr & Tagg, 1995; Cross, 1999; Fink, 2003; Giles, Ryan, Belliveau, Freitas & Casey, 2006; Tagg, 2003; Weimer, 2002). Tutorials are usually conducted by a range of different staff, not necessarily the principal lecturer, and carry a significant resource burden in terms of room use and staff face-to-face teaching time.

Over the last decade, the work of numerous researchers, notably in the sciences, (Beichner, 2008; Beichner, Saul, Abbott, Morse, Deardorff, Allain, Bonham, Dancy & Risley, 2007; Huerta, 2007; Oliver-Hoyo, Allen, Hunt, Hutson & Pitts, 2004) has indicated that it is possible to shift the emphasis to student-centred learning in large classes with significant outcomes in terms of increased student engagement, problem solving ability and academic outcomes, as well as a reduction in failure rates for women, minorities and ‘at-risk’ students. This is achieved through:

- Using learning spaces with enhanced technology to increase student collaboration and co-construction of knowledge.
- Providing a significant proportion of the course content on-line, underpinned by an interactive and guided instructional design, for students to access at the time and place which accommodates their life/study/work patterns.
- Creating an active, engaging, enquiry based large class environment where students work in small groups and have the opportunity to maximise peer to peer and student to teacher learning.

Building on this work, the “Lectorial” approach adopted in this project focused on trying to create a “workplace of learning”, where students were offered greater responsibility and choice in their learning, and where good pedagogy could resonate with a technologically enhanced environment. It was about adopting new paradigms of learning and teaching, which require enthusiasm and vision. It was about acknowledging and supporting the incredible quality of learning that dedicated staff and students can achieve.

The first step was to provide the students with material online that is normally presented in the large scale passive lecture environment, to support the development of background knowledge and comprehension. The next step was to engage and motivate students to complete the online preparatory work through activities linked to their assessment. Only then, were students considered ready (prepared) to engage in classroom face-to-face work with staff and peers, aimed

at facilitating the higher cognitive thinking domains of application, analysis, synthesis, evaluation and creation.

One of the essential components of the “Lectorial” approach was the capture of material generated through the community of learners. This was achieved through the use of Interactive Whiteboards, through portable capture devices such as the eBeam, or by simply taking a photograph of the “wall/whiteboard”. The outputs were then able to be shared through the online environment and there was opportunity for further examination, exploration and building on the material.

Thus, the “Lectorial” approach offered the opportunity for staff to create and students to engage in a personal learning experience within a large class environment. The essential elements were:

Element 1. Using New Generation Learning Spaces with flexible room designs and enhanced technology to support and facilitate the use of contemporary active learner centred-teaching methods.

Element 2. Providing course content on-line underpinned by an interactive and guided instructional design for students to access to develop their declarative knowledge, prior to the Lectorial, at a time and place which accommodates their life/study/work patterns.

Element 3. Creating an active, engaging, enquiry based large class environment where students worked in small groups and had the opportunity to maximise peer to peer and student to teacher learning. Most significantly, through the preparatory on line work, students were supported to develop their declaratory knowledge base which was then extended and augmented into higher order procedural knowledge, through the interactive Lectorial mode.

To prepare staff a number of professional development approaches were employed, consistent with the trend towards contextual and flexible professional development incorporating constructivist approaches (Adams, 2009; Hardy, 2010). Staff were offered one-on-one support, facilitated collaborative meetings, technical information sessions, peer observation and review, resources and materials, and access to a collaboratively built Blackboard Shell (LECT2010), featuring resources, links, multimedia and interactivity.

The aim of the professional development support was to help staff prepare for the development and implementation of the “Lectorial” mode in their courses. Support was deemed best if it was ongoing throughout the implementation phase, with opportunities for continuous change and improvement.

In this project, three undergraduate courses were trialled using the “Lectorial” approach. Data was collected on the feasibility of this approach in terms of effectiveness of the approach on staff and students’ experiences and the impact on time and resources. Data was obtained from student surveys, formal interviews with staff, ongoing professional development dialogues and unobtrusive observation of classes.

The aims and outcomes of the project addressed issues of strategic importance to the University, as follows.

Strategic Alignment

Fundamental to the project was the enhancement of student learning experiences and outcomes, as well as attributes that lead to enhanced employment opportunities, in line with the University Academic and Learning and Teaching plans.

Innovation

The emergence of new generation learning spaces at RMIT presented opportunities to trial dynamic and innovative approaches to learning and teaching. This project addressed a number of areas of innovation of significance to the university, and the sector, including:

- Creating a student centred learning environment within a large class setting
- Using the myRMIT studies portal to provide structured, relevant and engaging material to students in a flexible, just-in-time and just-for-me way.
- Preparing students, through myRMIT studies by providing background resources and activities to help them engage in higher cognitive and collaborative learning when in the face-to-face class
- Using technology in the classroom (such as interactive whiteboards, personal response systems, laptops)
- Exploring and optimising the use of new generation learning spaces

Importance to the University and the Sector

RMIT is committed to student centred teaching, therefore, this project provided an opportunity to explore issues in professional development and make recommendations for future developments. In addition, the emergence and development of New Generation Learning Spaces (NGLS) is a significant initiative within the RMIT Capital Works program. This project explored issues around new spaces and the learning and teaching implications that these spaces bring to the fore.

Value for money

Across the university there is a pressing need to address the issue of the economic efficiency of large classes against the pedagogical value of this approach. The university has for some time been wrestling with the challenge of improving its learning and teaching outcomes in large classes by balancing learning and teaching quality and financial viability. This project addressed these issues by trialling and implementing the “Lectorial” mode to determine whether it delivers on both pedagogical and financial imperatives.

2 Methodology

The project involved five phases:

1. Review of the literature, consultation with stakeholders, and creation of a “Lectorial” Project Steering Committee
2. Identifying courses and staff for trialling the “Lectorial” approach and securing appropriate room bookings.
3. Providing support for implementing the “Lectorial” approach in the following areas
 - a. Curriculum re-design and development
 - b. Learning and teaching strategy use
 - c. Educational Technology use
 - d. Reflection and continuous pedagogical improvement
4. Data collection
 - a. Student surveys administered at weeks 4 and 11
 - b. Staff interviews at weeks 4 and 11 (recorded and transcribed)
 - c. Ongoing dialogue with staff
 - d. Unobtrusive observation in class (field notes and behavioural mapping)
5. Evaluation of data

A “Lectorial” Project Steering Committee was convened, with representatives from the:

- School of GSSSP
- School of Media and Communication
- School of PCPM
- Learning and Teaching Unit
- Learning Spaces Advisory Committee

- Property Services
- ITS (College of DSC)
- Project Team Members

The Steering Committee met monthly, with project reports distributed regularly for review and evaluation.

Courses Involved

Three undergraduate courses involving over 300 students from 9 programs from the Schools of Property Construction and Project Management (PCPM); Media and Communication; and Global Studies, Social Sciences and Planning were involved in the project. This provided a range of participants, across a number of disciplines and year levels as follows:

School of Property Construction and Project Management

A common core first year course with a total enrolment of 220 students enrolled across four programs

Bachelor of Applied Science (Construction Management),
Bachelor of Applied Science (Project Management),
Bachelor of Applied Science (Property),
Bachelor of Applied Science (Valuation)

School of Media and Communication

A course that was compulsory in one program and an elective in two programs, across second and third years. This was a particularly new and innovative offering, with a single student cohort combining two existing courses, utilising team teaching, and with a total enrolment of over 80 students across three programs

Bachelor of Communication (Advertising)
Bachelor of Communication (Professional Communication)
Bachelor of Communication (Public Relations)

School of Global Studies, Social Sciences and Planning

A core and capstone course offered in the final semester of the fourth year, with an enrolment of over 45 students in the Bachelor of Social Work.

Professional Development for Staff

Preparing and supporting staff to implement and continuously improve the “Lectorial” approach, as mentioned earlier, was achieved through a range of staff development activities:

- Individual consultations to review curriculum, learning and teaching approaches, assessment techniques, and assistance with working within the NGLS and using technology
- Organisation of specific sessions on the use of technology, in particular the use of interactive whiteboards (Teamboards)
- Provision of a Blackboard shell (LECT2010) with resources (text, web links and multimedia) to facilitate professional development
- Attendance in classes to provide peer review and encourage dialogue and reflection in the individual consultations
- Ongoing feedback through email communication

Data Collection

Following approval from the DSC CHEAN committee, data gathering commenced in Semester 2, 2010.

Student surveys

A survey instrument was prepared, based on the current research and literature, and in consultation with stakeholders, and administered in weeks four and eleven. The survey included a range of closed responses on a five point Likert scale and a number of open-ended responses (See Appendix A1 and Appendix A2 for Student Surveys). Following analysis of week 4 survey data the survey was reviewed for administration in week eleven. This survey contained repeat items for the purpose of comparison, and new items to explore emerging issues.

Week 4 Student Survey

A survey consisting of 21 statements (using a five-point Likert scale from 1=Strongly Disagree to 5 = Strongly Agree, and 6 = Not Applicable for certain statements only) and four open-ended responses, was administered in week 4 (See Appendix A1 for Student Survey, Week 4).

Week 11 Student Survey

A second student survey, a modified version of the one administered in week 4, was administered in week 11. The Week 11 survey consisted of 22 statements on the same 5 point Likert scale, and four open-ended response questions. (See Appendix A2 for Student Survey, Week 11).

In both the surveys, questions were themed around the 3 “Lectorial” Elements:

- a) The “Lectorial” Approach (4 questions), including experiences of small group and collaborative learning in NGLS (6 questions in week 4, 7 in week 11) (Element 3)
- b) Using the University online learning management system through myRMIT studies as a mode of preparing for the face-to-face class activities (8 questions) (Element 2)
- c) Space and Technology use, principally interactive whiteboards or Teamboards, in the classroom (5 questions) (Element 1)

This approach reflected the inductive nature of the project with emerging issues arising (in particular from observations) reflected in the surveys. The use of questions to explore emerging issues was seen as a valuable way to capture the issues; however, the limitation was that it prevented the opportunity to undertake a complete pre- and post-intervention analysis for all items.

Staff interviews

Staff were formally interviewed in weeks four and eleven, and informal conversations and feedback were gathered continuously to provide evaluation and continual improvement of the project methodology and to guide the successful achievement of the project outcomes. (See Appendix B for semi-structured interview schedule).

Unobtrusive Observations

The project officers attended over fifty percent of all the classes conducted across the three courses. Field notes were taken which formed the basis of survey construction, interview questions, data analysis and peer review and feedback.

3 Project Outcomes and Impacts

In this section, the nine project outcomes and their impacts are discussed under four headings, New ways of teaching; New ways of learning; Insights into financial and space implications; and Dissemination and development.

3.1 Outcome 1 - New ways of teaching

1. Enhanced staff knowledge of and experience in student-centred teaching in large classes

In terms of outcome one of the project, which focused on enhancing staff knowledge of and experience in student-centred teaching in large classes, as exemplified in the “Lectorial” approach” analysis of the staff interview data and classroom observations revealed that overall, the project resulted in the following positive staff outcomes:

- a. *A deeper understanding of the theory and practice of student centred teaching, with an emphasis on peer supported collaborative learning through structured small group work.* This included: an improved ability to create and implement a “workplace of learning” for both staff and students; a shift in the power and responsibility from the teacher to the community of learners; the acknowledgment of the importance of modifying assessment tasks to align with student centred learning principles in order to optimise the opportunities provided by a collaborative learning environment.
- b. *An increased use of blended-learning with the University online learning management system extending the boundaries of the ‘classroom’.* This provided flexible, just-in-time, just-for-me learning opportunities for students which were aligned to, and augmented by, the face to face learning events.
- c. *A greater understanding of space and technology from trialling and working within a New Generation Learning Space.* Specifically, the use of interactive whiteboards (Teamboards) and Personal Response Systems (Clickers), provided an environment for staff to trial the creation, capture and sharing of knowledge in a large class environment.

Each of these is discussed in detail below.

a. **A deeper understanding of the theory and practice of student centred teaching, with an emphasis on collaborative learning through structured small group work.**

Using the “Lectorial” approach resulted in a move to a more student-centred approach with staff in all of the courses managing to replicate the pedagogical intimacy and effectiveness of a tutorial in a large class environment, as indicated by the following staff comments.

“I think we have worked hard at building community and building smaller teams within the community....”

“What has come out of it is student-centred learning, constructivist learning, the idea that we share the learning, there is a shift of balance that it doesn’t all belong with the facilitator, the lecturer, it isn’t just about the slides on the screen and just talking to the slides.”

“Just the idea of pre-work is new. And I guess I am having a better understanding of meeting the student needs, which is what we are supposed to be here for, of when and how they might learn. So I have opened my mind beyond the lecture and the tute.”

The use of a ‘workplace of learning’ metaphor, was found to help staff re-imagine their roles and responsibilities, and as indicated below offered a social structure to the classroom.

“I was thinking about that whole ‘workplace environment’... for this course it really does lend itself to the notion that we are in the workplace...”

“I am trying to build a learning community where the students have as much say....”

Students and staff reported benefits from the resulting peer-to-peer, as well as teacher interaction, for example, a student commented that,

“It is good having face-to-face time with the teachers. It allows for relationships to develop, which develops mutual respect. When you can’t respect someone then you can’t learn from them.”

Sharing was also particularly evident, as groups explored and created new knowledge. In addition, creating student led discussions and presentations in-class offered the opportunity for peer feedback, creating a stimulating and engaging learning environment as shown in the quote from a staff member below,

“They have all been so attentive...when their peers are presenting, they are really focussed and engaged.”

An important aspect of the active learning approach adopted was the design and use of group work that provided opportunities for activity, rest and reflection, with staff seeing the benefits of using well designed and sequenced active interactive strategies, as follows,

“I am pleased about the way we designed activities that tend to chunk up the time, a little bit of theory, and then activities to put the content into practice in pairs, individually and in large groups, then back to let them share it on the Teamboard.”

Meaningful, authentic and constructively aligned assessment was found to be an especially important aspect of implementing the “Lectorial” mode.

“The assessment had to be more than about ‘what they know’. I had to use it as a driver to get the students to Blackboard, but then it had to really connect with what was happening in class. I tried to give them some choice in what they could do, and that helped to share the control with them.”

b. An increased use of blended-learning with the University myRMIT studies online learning management system extending the boundaries of the ‘classroom’.

Staff reported that the use of the University myRMIT studies online learning management system helped them to create, not only a structured, but also, a more scaffolded learning environment. Staff reported that it encouraged them to make sure that the learning outcomes were clear and contextualised, and that it made the ‘content’ more readily available to students through the provision of materials and links.

“I can provide readings or video clips, and say ‘Have a look at this and think about things before you come to class’, and I think that’s a great asset of Blackboard and “Lectorial”.

Students reported that they were encouraged to take responsibility for their own ongoing learning through the use of the functionality of the online learning management system, as indicated in the quote below from a staff member, the intention was to reduce student dependence on ‘expert input’ while at the same time the workload of staff.

“The message is – come to class prepared, ready to go, you have got to read this short, sharp targeted stuff, it is part of your assessment, so that you are ready to participate and be part of the learning community, and transfer it and make sense of it.”

c. A greater understanding of space and technology from trialling and working within a New Generation Learning Space.

Engaging in the “Lectorial” project provided staff with an opportunity to explore and trial the use of NGLSs in a supported way. In terms of the space, aspects of the furnishings, both in their configuration and comfort, and the technology available were found to support the move to a more student-centred pedagogy. Staff found that when the tables were large and rectangular and on castors, and the chairs were fully mobile a greater degree of freedom in the arrangement of furniture and in establishing line of sight was afforded.

“At first I was overwhelmed by the sheer size of the group, I am not used to teaching an interactive class with fifty students. But then I realised the shape of the room itself could be changed, and students were able to work in groups and still interact as a whole class. The tables could be moved and they could still see what was going on with the multiple Teamboards.”

The potential of IWBs was also recognised early by some teachers,

“Why would you want to use whiteboards when you have Teamboards. The beautiful thing about the Teamboard is, and we haven't mastered it yet, that in theory you can capture what the community develops.”

For the majority of the staff members the opportunity to work in a space which provided flexibility of approaches and strategies was welcomed. Staff reported that the experience of teaching within this environment prompted reflection on teaching approaches, and for most staff the change became empowering.

“The space is difficult at times, just with the physical structure...but I actually like the big room, being about to move around to different tables.”

Overall, the move to a “Lectorial” approach facilitated and supported many new ways of teaching. A number of significant advantages, as shown above, were highlighted, including:

- The use of small group activities is possible in a large class environment, allowing the development of shared resources and creating material for display, discussion, capture and dissemination.
- The creation of a community of learning, aligned to the notion of a “workplace of learning”, where students have equal power and responsibility for learning and opportunities for engagement and active learning, is a real possibility.
- An increase in the mobility of the teacher and students around the classroom, with moveable furniture, enables increased teacher and student interactions.
- The availability of Multiple IWBs and projection facilities that are well positioned provides access for all and opportunities the trialling of new technologies.

Challenges

In addition to the positive outcomes reported above, trialling the use of NGLSs presented a number of challenges, including:

- Engaging students in the preparatory work;
- Dealing with classroom management issues;
- Preventing student mental fatigue;
- The use of team teaching confusing for students;
- Dealing with inappropriate furnishings;
- Adopting new technologies; and
- Overcoming underpinning conceptions of learning and teaching.

These are discussed next.

Staff reported that one of the greatest challenges they faced, in terms of the adoption of teaching strategies and course changes, was to engage students in the preparation work online. Staff,

realised that assuming that students would not need any motivation/rewards to undertake the online tasks associated with the learning in-class would not work for all students. Adapting the formal assessment to assign a mark for the pre-reading (through on-line quizzes and through linkages to other assessment tasks) in the course guide proved to be a successful approach to overcome this.

“I think that getting them to do the pre-work is the biggest thing we need to incentivize..... if you have done the pre-work then you will be in the best position to help us build a learning community.”

Classroom management was also found to be challenging, particularly when bringing students back to a collective ‘listening’ position after working in groups.

“The most difficult thing is releasing the class and bringing them back. It is exceptionally difficult and you don't want to do that three or four times. It is so hard to get them to quieten down, to listen and to concentrate. Within ten minutes they are talking about other things, even reading the paper.”

In addition, prolonged group work was found to have the effect of exhausting concentration, which often then led to a lack of engagement and ‘talking off task’.

The use of team teaching was not rated positively by students, with many students requesting that only one lecturer facilitate the “Lectorial”.

“Only one teacher please.”

“I would prefer only having one lecturer/“Lectorial” leader, the extra teachers ruin it (although both teachers are good, but alone).”

“Having one teacher is better. Two lecturers tend to clash, talk over each other and end up confusing the students.”

Teaching in an interactive way was more difficult if tables were round, heavy and not on castors and the chairs rigid were hard to move. In addition, if large pillars obscured vision or if IWBs were not well located this caused issues, as identified by the student and staff comments below.

“Round tables are annoying as you often can't see the teacher and have to constantly turn around”

“We have used these spaces meetings, and it is awful having your back to someone when they are talking. You have to turn around all the time to follow the...it would be great if we had swivel chairs, so students could turn and look at you. I didn't appreciate it what they [students] go through until I was sitting there in a meeting.”

How to optimally blend in-class technology with the space, the pedagogy, and the constraints of staff time was an issue for all. Students and staff made comments that the additional portable Teamboards combined with portable LCD screens and wall projectors, combined to create an overwhelming, and potentially confusing, technological presence. This problem was heightened by the tendency for the teacher to work stationed at a single Teamboard, although the material was displayed on all four Teamboards and the wall projector. Classroom observations indicated that students concentrated their focus on the actual presenter (teacher or student presenter) rather than looking at the nearest Teamboard.

Finally, underpinning teacher beliefs played the most important role. In the early stages of using the NGLSs, all staff commented on the lack of a central, or acknowledged teacher position, and for most this was a source of initial discomfort.

“These spaces are designed not to have a place for presenting, and that's wrong, because it's based on the idea that people don't want to look at the person who's talking. And that's not true.”

However, by the end of the project, three of the four teachers appeared openly willing to shift their conceptions of learning and teaching to one that was more student-centred in nature. While most staff were happy to explore and experiment with different strategies to maximise the use of the spaces, this was not universal. One staff member experienced a considerable dissonance between the space available and the preferred teaching style. Eventually this staff member chose to move the furnishings in such a way as to create a more formal classroom (with students all facing forward), which accommodated the more teacher-centred ‘lecturing’ style. Thus, space and or technology alone were not a sufficient catalyst to create change in teaching and learning approaches for all the teachers.

3.2 Outcome Two - New ways of learning

2. Improved student experiences and learning outcomes (as evidenced by student feedback data)

Data on student experiences in the “Lectorial” project was collected from the students through the administration of two surveys and unobtrusive in-class observations.

Results are presented in the sections below under the headings *The “Lectorial” Mode; The use of the University myRMIT studies online learning management system to prepare for and engage in class activities; and technology and space use in the classroom.*

a) The “Lectorial” Mode

Quantitative Data

In Figure 1, the percentage agreements (aggregates of the Agree/Strongly Agree responses) for survey items relating to the “Lectorial” Mode at weeks four and eleven are presented for each course.

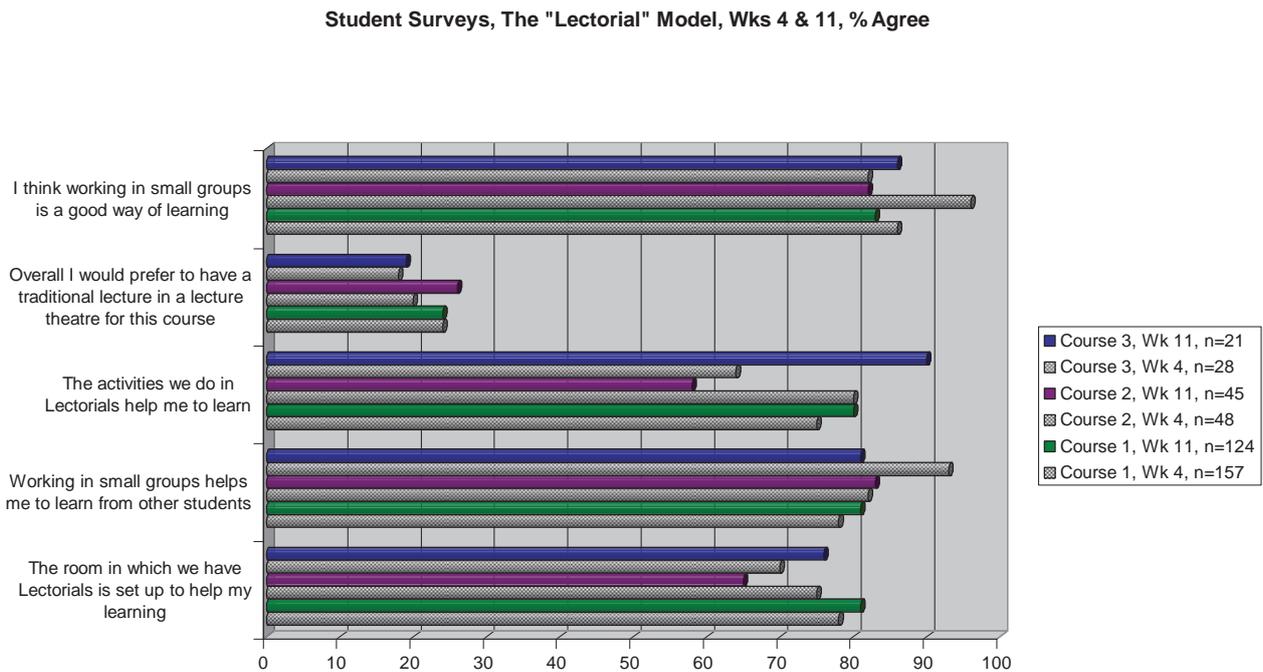


Figure 1. Percentage Agreements for "Lectorial" items in weeks 4 and 11.

As shown in Figure 1, student responses were positive for all aspects of the "Lectorial" mode. In particular, students responded very positively to the use of small group work, with the majority of students reporting that working in small groups was a good way to learn (Σ 84% week 11) and that it helped them to learn from other students (Σ 82% week 11). In addition, they indicated that the activities they did in the "Lectorial" (Σ 76% week 11) and the way the room was set-up (Σ 74% weeks 4 & 11, no change) helped their learning.

In the week four survey, students were asked whether they believed that they got distracted when sitting at tables with other students (see question 2b Appendix A1). Responses indicated that only a minority (Σ 16%) believed this was the case. This suggests that students do not believe that they are distracted by the physical arrangement of the tables (round and rectangular), despite staff often stating that they believed that that the table arrangement placed students in a position to 'socialise' and become distracted.

In terms of changes over time, as shown in Figure 1, in Course 2 there was a large decline from weeks 4 to 11 in students reporting that working in small groups was a good way of learning, and that the activities and room set-up helped their learning. In contrast, in Course 3 there was a large increase in students reporting that both the activities they did in "Lectorials" and the room set-up helped their learning. However, at the same time, there was a decline in students reporting that working in small groups helped them learn from other students.

The shift in thinking around working in small groups in Course 2 may be attributed to the inability of the teachers to sustain this approach with activities becoming less interesting or engaging. Also, significant issues were experienced with the use of technology, notably Teamboards, and the team teaching. In addition, a large proportion of the class became dedicated to students to do presentations which were conducted in a passive lecture style and were often uninspiring.

The decline in the value of small group work in Course 3 may be attributed to the teacher reverting to a more teacher-centred didactic style.

Notwithstanding this, by week 11 only a minority of students (just over 20%) would prefer to have a traditional lecture in place of a “Lectorial”.

Qualitative Data

Analysis of the qualitative data supported the quantitative findings. Specifically, the data reinforced that the majority of students valued the “Lectorial” approach, as indicated by the statements below.

“The Lectorial format is great.”

“I like Lectorials way better. I rarely go to lectures as I don’t learn much there. I would prefer to read the lecture on my computer.”

“The idea of a Lectorial is good and is a nice break from my 3 other subjects.”

“Out of all the classes this is the best as there is a good mix of prac and theory.”

Students also indicated that the “Lectorial” mode was particularly beneficial in promoting active learning and engagement.

“Lectorials have been an interesting way of learning, makes course content interesting and gets students interacting.”

“It is a really good way of breaking up the routine of uni and a quite enjoyable way of learning.”

“Very much more entertaining and enjoyable than plain lectures. I find this a better place to learn.”

“I greatly enjoyed this approach. It made the class interesting and I actually wanted to participate and complete tasks.”

Students even went as far as recommending that the approach be implemented earlier in their program and adopted in all classes.

“It would have been nice to have Lectorials in the last 3.75 years of my degree instead of the last class only!”

“They should implement Lectorials for all subjects.”

b) Using the University myRMIT studies online learning management system to prepare for, and engage in, the face to face class activities

Quantitative Data

In Figure 2, the percentage agreements (the aggregates of the Agree/Strongly Agree responses) for items relating to the use of the online learning management system for each course at weeks four and eleven are presented.

Student Survey, Blackboard, Wks 4 & 11, % Agree

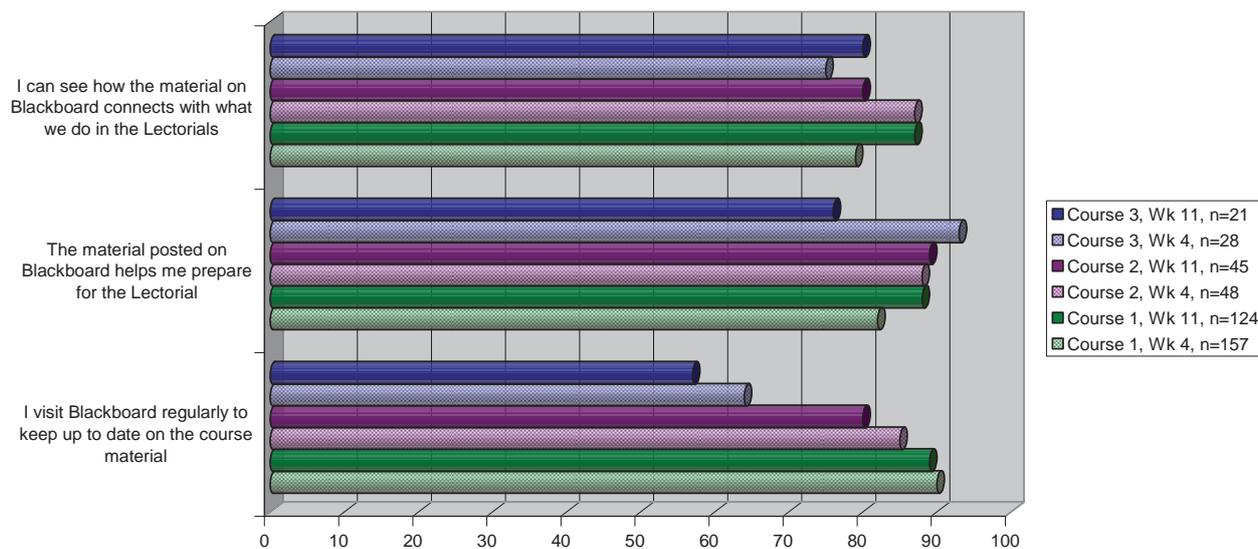


Figure 2. Percentage Agreements for the University online learning management system “Blackboard” items in weeks 4 and 11.

As shown in Figure 2, the majority of students reported that the materials on the University online learning management system helped them to prepare for the “Lectorial” ($\Sigma 86\%$ week 11), provided them with preparatory resources ($\Sigma 84\%$ week 11), connected with the face-to-face classes ($\Sigma 82\%$ week 11); and that they visited the site regularly, notably in two out of three courses, as a way of keeping up-to-date with the course material ($\Sigma 75\%$ week 11).

The additional items included in the week 11 survey (See questions in Student Survey 2 (Week 11) in Appendix A2) indicated that students valued the online learning management system as a source of material and connectivity to the course ($\Sigma 82\%$ week 11), with the majority of students reporting that having the online learning management system site helped them to feel connected to the course ($\Sigma 83\%$). However, the preference for materials to be delivered in digital format was not strongly supported by students ($\Sigma 40\%$ week 11), and similarly, the option for greater interactivity through the University online learning management system such as blogs, wikis and forums, met with very lukewarm support ($\Sigma 24\%$ week 11).

In terms of changes over time, in Course 3 there was a large decline in students reporting that the material posted on the University online learning management system helped them learn and that they visited the online learning management system site regularly. This may be due to the curriculum resources which included a hardcopy version of the readings, and the teacher’s preference for using a wiki outside of the University online learning management system that they had previously used and were familiar with using.

Qualitative Data

Analysis of the qualitative data from the survey open-ended response items provided additional information regarding the use of Blackboard, as follows.

Students identified the University online learning management system as a valuable repository for information, which allowed all content to be kept in the one place. This helped them access material easily and in a flexible just-in-time- just-for-me manner before the “Lectorial” class. This

reduced the need for them to carry around hard copy materials reducing printing costs and was seen as more environmentally sustainable.

“Everything is found in one place, makes a great reference.”

“Easy access to notes and resources anytime and anywhere I can get the internet.”

“Access to materials pre and post Lectorial, it means I can’t lose any material.”

“Accessing all material for this course in one place is great.”

“It is also useful to print out and revise prior to the “Lectorial”

“Being able to access learning materials as needed and being able to prepare for class beforehand”

“Good teacher’s comments on what to bring for each week, and for the updates on what we have to do for each week.”

“Information posted prior to classes was good to give clarity or provide other info needed to prepare for class.”

“Not having to carry around textbooks is nice too when information is digital.”

“Having what is normally printed materials available online, i.e. no paper = quicker, cheaper, easier and good for environment. Loved the videos too.”

Students also indicated that through the regular updates and being organised the online course site provided a clear structure to the weekly classes and the course.

“It is updated regularly so the info you need is always there...”

“...Showing a clear weekly learning structure.”

“It is very well organised and the information is easily found.”

In addition, students identified the important role that the pre-reading and activities available through the online course site had in helping them learn and be prepared for the “Lectorials”.

“Pre-work: when everyone has a bit of knowledge prior to the “Lectorial” ... just works!”

“Weekly preparation exercises really help with understanding the readings.”

“I can prepare for the lectorial beforehand. Hence, I can understand what is being taught.”

“Many activities and resources for self-learning (pre-work)....”

“Great having the on-line tests before class, it made me do the work!”

c) Technology use, principally interactive whiteboards or Teamboards, in the classroom

Quantitative Data

In Figure 3, the percentage agreements (aggregates of the Agree/Strongly Agree responses) for the survey items relating to the use of technology, notably Teamboards, at weeks four and eleven are presented for each course.

Student Surveys, Teamboard, Wks 4 & 11, % Agree

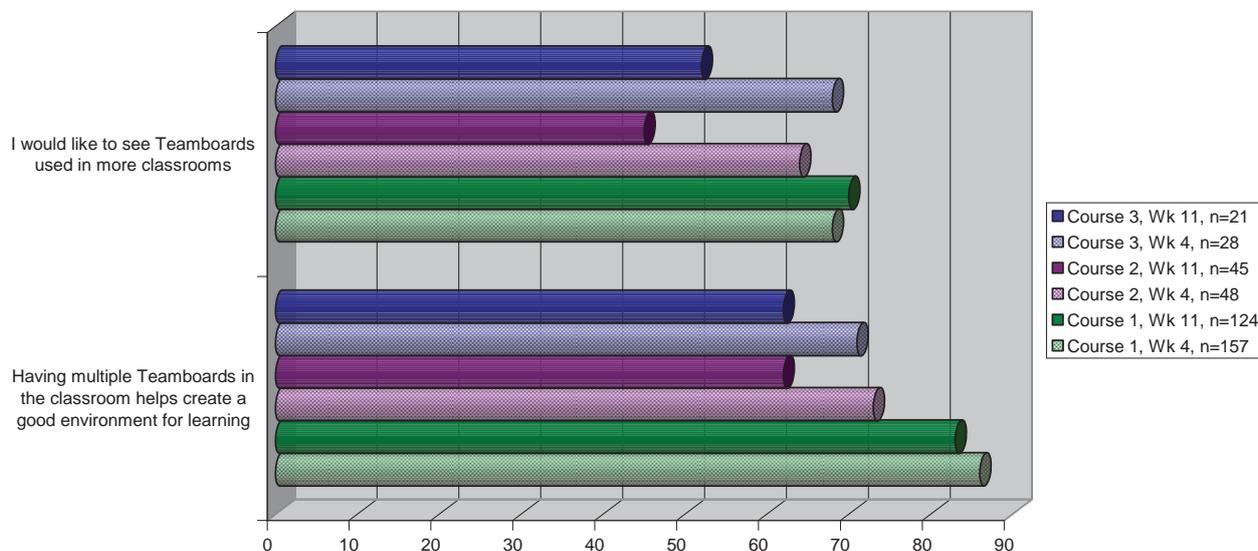


Figure 3. Percentage Agreements for “Teamboard” items in weeks 4 and 11.

As shown on Figure 3, the use of Teamboards was not overwhelmingly supported by students, with only just over half the students ($\Sigma 56\%$ week11) indicating that they would like to see Teamboards used in more classrooms, notably in two out of the three courses. Similarly, other than for one of the courses, the majority of students ($\Sigma 51\%$ week11) did not agree that having multiple Teamboards helped create a good environment for learning.

In terms of changes over time, as shown in Figure 3, support for the use of multiple Teamboards within the classroom declined from ($\Sigma 79\%$) in week 4 to ($\Sigma 69\%$) in week 11. Similarly, there was a decline in students in two out of the three courses wanting to see Teamboards used in other classrooms, declining from ($\Sigma 64\%$) in week 4 to ($\Sigma 56\%$) in week 11.

Responses to the additional question included in the week 11 survey about Teamboards being core to the “Lectorial” mode indicated that only half ($\Sigma 51\%$) of the students agreed that Teamboards were indeed an important part of “Lectorials”.

Qualitative Data

An analysis of the qualitative data revealed that students identified both strengths and challenges associated with the use of Teamboards.

Strengths included helping learning through encouraging interactivity, stimulating interest, supporting visual learning and making dissemination of information developed in classes easier and quicker.

“There are a variety of ways they assist learning – different presentation formats, internet, etc.”

“The interactivity of Teamboards stimulates my learning process, and I don’t feel that tired or bored.”

“They’re interactive and stimulate interest, preventing us from zoning out.”

“Easier to learn when you see it graphically, gives better examples.”

“Stimulates interest. We can easily link visuals to theory by drawing.”

"They allow teachers to make quick notes or slides, save them and then make them available to me online."

In addition, students mentioned that they appreciated the way the Teamboards were located in the classrooms, which helped them read the presentations and minimised movement.

"It is also easy to read presentations as the Teamboards are placed in every corner."

"Students don't have to move to the other side of the room to engage with the boards, it's convenient for all the students."

Students also mentioned that they believed that the Teamboards helped them to develop up-to-date technology and presentation skills.

"Good, because we need to learn how to use up coming technology and how to present information in the most reader friendly format"

In terms of the challenges, students identified the lack of functionality of the equipment and the low skill levels of the teachers as the major issues.

Students noted that the functionality of the Teamboards was very limited, and was principally restricted to drawing simple lines on pre-existing text or adding text. In addition, due to the low resolution of the Teamboards, written text was difficult to create (on the 160 x 125 cm boards) and this had the effect of making the output look 'childlike'. The image below in Figure 4 is typical of a TeamDraw slide output.

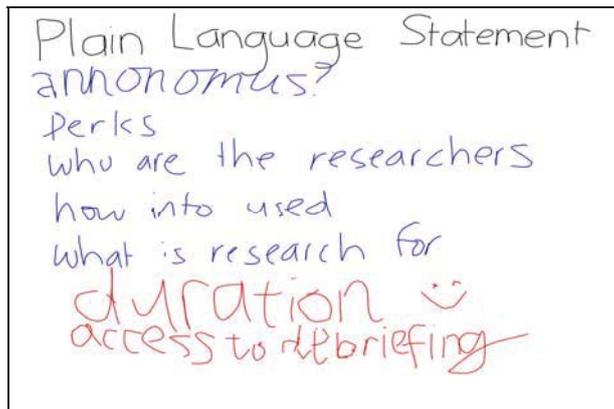


Figure 4. Screen capture of TeamDraw slide from an actual class

In terms of the integration of Teamboards into the classroom, there were significant restrictions in the classroom in Building 9 with the Apple computers not fully compatible with the portable Teamboards. As a result, the principle function of Teamboards utilised in these classes was reduced to annotating PowerPoint slides.

While staff devoted considerable time and effort to developing skills in using the Teamboards, it was apparent that students found the teacher steep learning curves frustrating. Staff lack of ability in using the technology was identified as an issue by students.

"At the moment lecturers are slow using them meaning student interest is lost."

"If they worked faster and the teachers weren't so inept at using them they would probably be okay."

"If everyone is able to use them, and if they always worked, and we were taught what they can do, they would be worth it."

There were a number of issues associated with the use of the IWBs. The IWB is only as good as the installation allows, and in the case of the classroom in Building 8, there was limited functionality

in using the Teamboards independently, which had an impact on the value of using it for small group work.

In general, Teamboards were not as versatile or intuitive to use as they had hoped, and after initial enthusiasm, the use of Teamboard diminished over the semester.

“It is not only skilling up, it is practising and retaining it. Because it is not necessarily natural for me, I will forget how to do it. The skilling up is part of it, but continually refreshing and using it.”

“Looking at it, it does nothing that I couldn’t do before, but perhaps it does it better. In terms of capturing the knowledge that is created by the class, by the student cohort, it should be far better. We should be able to capture it on Teamboard and bring it back to the class to look at the insights and knowledge we have created as a group – we should be able to do it. But I can’t get it to work!”

“Needs more and different software rather than just PowerPoint presentations.”

“The only function of Teamboards we used was the drawing element, which seemed to be a lot of effort when you can use a whiteboard!”

Staff reported that students found there was an initial over emphasis on the ‘novelty’ of the IWB technology which was distracting, and ultimately, disappointing.

“Teamboards should only be used in class when appropriate to the content being taught – it should not be the focus. Just because we have the technology doesn’t mean it always needs to be used – only when it enhances our learning.”

“I think there should be less excitement about Teamboards, they didn’t do all that much, Whiteboards can be used just as effectively.

“I did not think Teamboards contributed anything to my learning in this course, if anything it made classes more disrupted.”

“Less on the technology – it can affect the momentum of the class!”

Staff themselves identified their lack of confidence with the technology as an issue in their effective use. Staff also struggled to see the advantages that Teamboards could provide and their lack of time to fully explore and integrate the functionality into their teaching.

“I actually think that I was doing a lot of things that Teamboard can do reasonably successfully before (with just plain whiteboards). If I was more confident in both Teamboard’s ability and my ability to drive it, then I think it would actually help. But because I am not confident in my abilities then it has hindered what I do, and what I am willing to try. And Teamboard is clunky, really clunky.”

“Unless you are going to use the Teamboard, and have the students use the Teamboard there is no point.... And the thing is, if I am struggling with it [Teamboard], why would I release it to a class of 60 to try out, it is way too risky.”

“... I’m not using it to its full capacity. It’s not that I am not interested, I want to, but with the time constraints, I am constantly juggling like every else. If they gave me time to get away and do this properly, I could, but I am doing enough just to learn it, but not to use it fully.”

“I think they were very forgiving and understanding in week one, and they were very excited that this is new and they were really engaged and it was all happening.... My sense would be is that their expectations, their zeal and excitement has probably tempered as the potential didn’t get realised.”

Summary

Overall, the move to a “Lectorial” approach facilitated and supported new ways of learning. A number of significant advantages were highlighted as follows.

The data suggested that the use of the “Lectorial” mode and the room-set-up facilitated interaction and active learning, especially through the use of small group work. The overwhelming majority of students reported that they would prefer a “Lectorial” mode to a traditional lecture.

The majority of students also reported that the materials on the online course site were a very important aspect that supported their learning, and encouraged engagement and fostered a sense of connectivity.

Staff experienced a range of successes and frustrations with the technology, notably multiple Interactive whiteboards (in this case Teamboard) and the responses from students echoed this, with a mixture of support for the benefits of interactivity, but more negatives than positives regarding their limited functionality and low levels of staff skills.

3.3 Outcome Three – Insights into financial and space implications

3. Improved understanding of the financial and space requirements of different learning and teaching modes

Three principle questions were addressed in relation to furthering understanding of the financial and space implications of moving to the “Lectorial” mode, including:

- a) What are the cost implications associated with the “Lectorial” mode versus other teaching modes?
- b) Are the currently available spaces ‘fit for purpose’ for the “Lectorial” mode?
- c) How are staff best supported to teach using the “Lectorial” mode in NGLSs?

a) What are the cost implications associated the “Lectorial” mode versus other teaching modes?

Overall, moving to a “Lectorial” mode is not associated with an increase in costs, when compared to the traditional Lecture and tutorial mode. In fact, moving to the “Lectorial” mode may offer significant direct staff cost and teacher face-to-face time savings, especially when class sizes exceed 40, as outlined below.

The following calculations are based solely on the expenditure associated with direct staff contact hours. For simplification, the per hour salary rate is based on a Level C/1 Academic (without oncosts).

“Lectorial” mode (student-centred)

3 hours face-to-face contact

40 Class size
150 students, 4 x 3 hours of 40 students
Lecturer @ \$50 per hour x 12 hours = \$600 p/week

50 Class size
150 students, 3 x 3 hours of 50 students
Lecturer @ \$50 per hour x 9 hours = \$450 p/week

75 Class size
150 students, 2 x 3 hours of 75 students
Lecturer @ \$50 per hour x 6 hours = \$300 p/week

2 hours face-to-face contact and 1 hour online learning Bb

40 Class size with 2 hours face-to-face contact
150 students, 4 x 2 hours of 40 students
Lecturer @ \$50 per hour x 8 hours = \$400 p/week

50 Class size with 2 hours face-to-face contact and 1 hour online learning Bb
150 students, 3 x 2 hours of 50 students
Lecturer @ \$50 per hour x 6 hours = \$300 p/week

75 Class size with 2 hours face-to-face contact and 1 hour online learning Bb
150 students, 2 x 2 hours of 75 students
Lecturer @ \$50 per hour x 4 hours = \$200 p/week

Traditional mode (teacher-centred)

150 students, with 1 x 1 hour lecture (150 students) and 5 x 2 hour tutorials (30 students)
Lecturer @ \$50 per hour x 11 hours = \$550 p/week

Cost savings

As shown above, moving to a “Lectorial” mode can offer significant savings in staffing costs, and a reduction in actual teaching hours when the class size exceeds 40. Maximum efficiencies are gained at class sizes of 75 and above with an increase in student learning (see learning gains below). In addition, a shift to a blended approach by the inclusion of more online learning (for example 1 hour online and 2 hours “Lectorial”) may further enhance direct cost efficiencies and reductions in staff contact time.

Online material development costs

The initial increase in upfront time costs for the production of online interactive materials can easily be offset by the reduction in face-to-face teaching hours over time (which can be significant). In addition, regardless of whether a traditional or more contemporary mode is used, there is a growing expectation that quality materials are available online and that staff will engage in this task as part of normal teaching practice (Palloff & Pratt, 2010; Garrison & Vaughn, 2008).

Learning gains

Research shows that the use of new generation learning spaces, in the way that the “Lectorial” project did, is associated with increased learning outcomes and positive feelings (Beichner, 2008; Beichner et al., 2007; Brooks, 2010; Dori, Hult, Breslow & Belcher, 2005; Hattie, 2009; Whiteside, Brooks & Walker, 2010). In fact, moving to the use of contemporary new generation learning spaces does not compromise learning or teaching outcomes.

A recent long-term empirical study, even though difficult to conduct given the nature of human subjects, found that students [N=43] who attended classes in the University of Minnesota’s new high-tech, technology-enhanced state-of-the-Art Active Learning Classrooms (ALCs) “...exceeded final grade expectations relative to their ACT scores...” and that the “...ALC had a significant positive effect on student learning outcomes as measured by course grades.” (Whiteside et al., 2010, p.1 and 2). Similarly, the long terms study at MIT by Dori, Hult, Breslow and Belcher (2005, p.299) concluded that “...the long-term effect of the TEAL [Technology-Enabled Active Learning] course on students’ retention of concepts was significantly stronger than that of the traditional course.”

Overall, therefore, moving to a “Lectorial” mode can offer enhanced teaching and learning outcomes as outlined in outcomes 1 and 2 above and in line with a more contemporary student-

centred mode of learning and teaching as well as financial savings and a reduction in face-to-face teaching workloads.

b) Are the spaces currently available ‘fit for purpose’ for the “Lectorial” mode?

In terms of space, the “Lectorial” mode is predicated on the availability of large capacity New Generation Learning Spaces to provide flexible learning spaces that enable a variety of learning activities to take place with seamless transitions. For example, in a typical “Lectorial” the space may be used for a formal presentation, followed by small group activities, then presentations by groups to the class with discussion and feedback, and then individual, paired, or whole class activities, and so on.

The requirements of the space for these activities to occur include:

- Large flat floored space with clear visibility from all sections
- Tables which are stable, and can be shaped and moved into a number of configurations
- Chairs that can be easily moved around the space, can swivel to allow the user to quickly visually access all parts of the space, and provide comfort through height adjustment
- Lighting, acoustics and thermal levels which can be controlled to ensure comfort²
- Display mechanisms which allow creation, sharing and capture of information (for example IWB’s or e-beams on whitewalls or glasswalls)

In Table1, the features in the rooms used in the “Lectorial” project are compared against the requirements listed above.

Feature	Rooms 8.8.46-47	Rooms 9.3.4A-4B
Flat floor	✓	✓
Clear visibility	✓	✗ Large obstructing pillar
Stable moveable tables	✗ Not easily moved	✓
Chairs – height adjustable, swivel, on castors	✗ Rigid chairs	✓
Lighting	✓	✓
Acoustics	✗ Poor in double room format	✓
Thermal Comfort	✗ Hot and airless	✓
Functional IWB	✗ Not synchronised	✗ Limited function
Other display space	✗ None	✗ Not available in double room format

Rooms 8.8.46-47

² Mitchell et al, 2010 note that student comfort must be one of the premium parameters met, see <http://learnline.cdu.edu.au/retrofittingunispace/>



Figure 11, Room in Bldg 8, Level 8 for up to 90 students

In Building 8, Level 8 a suite of classrooms have been developed as NGLSs. They have wall-fixed Teamboards (3 per classroom), round tables accommodating 6 students (these tables are generally too heavy to be easily moved), and chairs which are neither height adjustable nor easily manoeuvrable. Two classrooms, 8.8.46-47, are interconnected by concertina folding doors and can be used to accommodate 70-90 students per class. There are two sets of 3 Teamboards per classroom which can be used synchronously, however, there are limitations with the functionality of the Teamboards that restrict their use to ‘marking up’ PowerPoint slides only (that is, using a pen-tool or the computer mouse to draw or highlight).

Challenges of the spaces

There were a number of issues with the 8.8.46-47 space which could be easily addressed as follows:

Issue 1: Strained voice projection

On some occasions, when there were 50 students or less, the staff member chose to use a single room. While this did create a crowded classroom, the staff member stated that the size and dimensions of the room were easier to work with, and this was supported by student comments. When using the double room the space was considerably wider than it was deep, and the staff member reported that it was difficult to get a sense of engaging the whole class when they were dispersed in this way. When both rooms were used it created a very large space, and it was not possible to hear without the use of a microphone/amplification (otherwise a strained voice is required).

Recommendation: Staff wear a lapel microphone and a wireless microphone be available and working at all times, and training be provided for staff and students on their use.

Issue 2: Immovable tables

The tables are round and heavy, and thus the configuration of the room is difficult to alter.

Recommendation: Lockable castors be retrofitted to the tables in order to provide more flexibility.

Issue 3: Immovable chairs

At any given time 50% of the audience had their back to the central presenter (whether it is a staff or student presenter). The current chairs ‘lock’ the user into a fixed position.

Recommendation: Chairs be replaced with ones that can swivel, or castors be retrofitted to existing chairs.

Issue 4: Centrally controlled Teamboards

The Teamboards are controlled from a central computer station, which is positioned so that the presenter has their back to the audience. In addition, this version of IWB does not allow individual control of the Teamboards by groups, which does not allow group work to be undertaken.

Recommendation: IWBS that can be independently controlled and appropriately positioned on flexible brackets be installed in the rooms.

Issue 5: Limited display space

Display space is restricted to the IWBs (which remain generally under the teacher control). There is not a great deal of wall space remaining.

Recommendation: Simple whiteboard/glassboard/glass or white walls be installed in the spaces for teacher explanations and to give students the opportunity work collaboratively and share their work.

Rooms 9.3.4A-4B



In **Building 9, Level 3**, the two rooms, **9.3.4A-4B**, have interconnecting ‘garage doors’ (i.e. vertical trifold doors). Four Team boards, portable, height adjustable on castors with additional controlling computer hardware and keyboards were placed in the space, purchased specifically for this project. In addition, there were two ceiling mounted projectors with white wall screen and two portable mounted LCD screens in the rooms.

There were a number of issues with the 9.3.4A-4B spaces which could be easily addressed as follows:

Issue 1: Line of sight

Staff reported that while the adjoined rooms worked well, the presence of a large pillar (which was part of the structural support for the rooms) significantly impaired line of sight to students, and this was supported by student comments.

Recommendation: Placement of additional screens be explore to overcome line of sight issues otherwise the rooms are not suitable to be used together as a “Lectorial” space due to the placement of the pillar.

Issue 2: Interoperability of Teamboards

The multiple Teamboards were problematic because the Apple hardware platform in the building did not support the display and capture software. In addition, it was too complex to set up at the commencement of each class the software to facilitate independent use of the Teamboards.

Recommendation: Interoperability issues be addressed and alternative processes developed and new software be installed.

Other rooms at RMIT

At RMIT, while there are a number of NGLSs currently available, as well as under development, the majority of these rooms are generally restricted to accommodating 40 students or less. For example,



Figure 9 - Room in Building 9 for 30 students



Figure 10 - Room in Building 7 for 24 students

This is a major issue given the cost implications outlined above. These space sizes privilege a traditional teacher centred lecture plus tutorial mode of teaching and reduce cost efficiencies even if a “Lectorila” mode is adopted.

a) How can staff be supported for teaching using the “Lectorial” mode in NGLSs?

This project has highlighted the importance of helping and supporting staff to adapt their teaching in line with the “Lectorial” mode in order to maximise both learning and teaching. The areas where staff support is most urgently needed are outlined below.

1. Staff may require help to see the opportunities the “Lectorial” approach provides and the value of using more meaningful, challenging and interesting teaching approaches and learning activities.
2. Staff may require ongoing embedded professional development and support to facilitate reflection on and a change in their learning and teaching philosophy and practice, especially their assessment. Specifically, staff may need to be challenged and supported to shift their learning and teaching conceptions, in order to embrace more contemporary student-centred collaborative learning ones, sharing responsibility and power with students within the paradigm of a “Workplace of Learning”. The use of structured observation, peer review and feedback are effective strategies for this.
3. Staff may require help to respond to the demands that teaching in NGLSs throw up, including; working in a space that does not have a central ‘teacher’s position’, and increasing their skills in classroom management and how to manage the transitioning of students from one activity to another. Practice spaces need to be made available to those staff wishing to use this approach, regardless of discipline, program, school or college. These spaces need to enable staff to trial student centred collaborative small group teaching underpinned by sound pedagogy. The minimum requirements are; open space, flat floor, furniture on castors, shared display space (whitewalls, glass walls, IWBs).
4. Staff may need help and support to enhance their technology skills, requiring ongoing, extended and in-context professional development in the use of technology, as an adjunct to in-class activities, and within the classroom. Spaces and technology should be available for staff to explore and experiment with in non-teaching contact time.

Within the sphere of professional development, Hattie (2009) points out that the development and provision of instructional materials (regardless of whether online or paper based) has a low effect size on changing teacher knowledge and behaviour, and little impact on student outcomes. Therefore, it is important that the development and dissemination of resources be accompanied by more effective strategies, such as observation and feedback on classroom techniques (including microteaching). Activities with the intent to create opportunities for conceptual change, should be focussed in ongoing, embedded and extended professional development opportunities.

Strategies that have been shown to be effective for bringing about change in teacher knowledge and behaviour, based on a synthesis of the findings included in the book *Invisible Learning* by Hattie (2009), are outlined below:

Higher Impact strategies:

1. Learning opportunities over an extended period of time
2. Mixed Groups
3. Practical rather than theoretical focus
4. Participants selected
5. Support from leadership, access to expertise and opportunities to meet
6. Externally initiated/funded development/Involvement of external experts rather than within school initiatives
7. *Challenging teachers prevailing discourse and perceptions about learning or challenging approaches
8. Engage teachers sufficiently during the learning process (active engagement) through
 - a. Observation of actual classroom methods
 - b. Micro teaching
 - c. Video/audio feedback
 - d. Practice
 - e. Teachers talking to other teachers is necessary but not sufficient

No/least impact strategies:

1. Voluntary or compulsory attendance
2. Release time
3. Funding
4. Printed, online or instructional materials
5. Discussion
6. Lectures
7. Games/simulations
8. Field trips
9. Coaching
10. Modelling

Summary

Overall, the project has furthered understanding of the financial and space implications of moving to the “Lectorial” mode.

In terms of the cost implications associated the “Lectorial” mode versus other teaching modes, moving to a “Lectorial” mode may offer significant direct staff cost and teacher face-to-face time savings over time, especially when class sizes exceed 40, which can offset the initial increase in time required for online resource development.

In terms of whether the currently available spaces ‘are fit for purpose’ for the “Lectorial” mode, a number of recommendations for changes were recommended. These included the provision of lapel and a wireless microphones to avoid strained voice projection; the retrofitting of Lockable castors to tables and the provision of swivel chairs, or retrofitting of castors to existing chairs to ensure flexibility; software be installed so that the IWBS can be independently controlled and flexible brackets be installed in the rooms so that they can be appropriately positioned; whiteboard/glassboard/glass or white walls be installed in the spaces.

Also, the lack of availability of suitably sized classrooms to maximise efficiencies needs urgent attention.

In addition, professional development that is long-term, localised and just in time and that focuses on technology and challenges conceptions is essential.

Finally, given the significant issues with technology experienced by staff in this project it would be beneficial for Property Services, Edutag and ITS to drive university wide consultation on:

- The various types of IWBs available and their specific value in the teaching and learning context
- The need for ongoing professional development and up-skilling in the use of IWBs
- The technical support provided to ensure this technology is maintained

3.4 Outcome Four - Dissemination and development

The “Lectorial” project was implemented across three schools in the College of DSC:

- School of Global Studies, Social Science and Planning
- School of Media and Communication
- School of Property, Construction and Project Management

Within each school there has been considerable interest in the “Lectorial” Mode, and a number of requests by staff to implement the mode in 2011.

Formal presentations have included:

August 2010

Presentation to College of DSC Strategic Learning and Teaching Group

September 2010

Presentation to College of DSC Executive (on use of IWB) by Dr Scott Mayson

November 2010

Presentation at LEARN Event: From Campus to Classroom
(See Appendix C1 and C2)

Inclusion in 2010 DVC(A) Online Publication

(See Appendix D)

In addition, a number of articles are currently being prepared for publication in A ranked journals in 2011 and 2012 and presentations for further dissemination in Schools.

4 Conclusion, Lessons Learned and Future Directions

The strategic objectives of this project were to support teachers to implement the “Lectorial” mode of teaching and learning, a mode seen as providing a positive student experience with enhanced student engagement. The “Lectorial” mode was predicated on three elements working synchronously.

Element 1: using New Generation Learning Spaces to support and facilitate the use of contemporary active learner centred-teaching methods.

Element 2: providing course content on-line underpinned by an interactive and guided instructional design.

Element 3: creating an active, engaging, enquiry based large class environment where students work collaboratively.

Through the “Lectorial” mode, students were provided with the opportunity to:

- become members of a community of learners,
- become active learners,
- have greater participation within the classroom,
- access and interact with learning resources and materials through the blended approach of using the University myRMIT studies online learning management system,
- use classroom based technology to share and capture knowledge, and
- develop a sense of empowerment and control over their learning.

A pivotal aspect for student learning was the provision of flexible, just-in-time and just-for-me learning. In this mode, knowledge was not seen as a passive, fixed resource; rather distributed, dynamic and interactive. Effort was made to help support teachers to shift from mainly using and privileging a traditional lecture mode to amore learner-centred one.

In assessing the effectiveness of the “Lectorial” project, data was collected on the impact and value of the overall approach, and on each of the three elements.

Selected findings are presented under each of the elements of the “Lectorial” mode below.

Element 1 – Using the New Generation Learning Spaces

By the end of the semester:

74% of students agreed or strongly agreed that the room in which they had Lectorials was set up to help their learning.

56% of students agreed or strongly agreed that they would like to see Teamboards used in more classrooms

51% of students agreed or strongly agreed that having multiple Teamboards in the classroom helped create a good environment for learning.

51% of students agreed or strongly agreed that they believed that Teamboards were an important part of Lectorials

Students told us that while the technology in the room stimulated interest, they also told us that we still have a lot to learn about Teamboards, with around only half of students agreeing with their usefulness.

Staff told us that while overall they found the spaces good to work in; there were challenges, notably in the use of team boards, with the lack of flexible furniture and the physical layout and size of some of the rooms.

Element 2 – Preparing students through Blackboard

By the end of the semester:

86% of students agreed or strongly agreed that the material available through the online learning management system helped them prepare for the “Lectorial”.

82% of students agreed or strongly agreed that the material available through the online learning management system connected with what they did in the “Lectorials”

75% of students agreed or strongly agreed that they visited the site regularly to keep up to date with the course materials

Students told us that the use of the online learning management system and the preparatory exercises were particularly valuable.

Staff told us that the use of the online learning management system to provide pre-work was a very important and a powerful aspect of the “Lectorial” approach.

Element 3 – Student centred collaborative learning

By the end of the semester:

84% of students agreed or strongly agreed that working in small groups helped them to learn from other students.

82% of student agreed or strongly agreed that working in small groups helped them learn from other students

76% of students agreed or strongly agreed that the activities they did in “Lectorials” helped their learning.

Students told us that they really enjoyed the approach and that it enhanced their interest and promoted positive active engagement.

Staff told us that the approach fostered student active engagement and challenged them to adapt their teaching approach and philosophy.

The project has shown that through the provision of structured and scaffolded learning in a blended learning environment (technology within and outside of the classroom), students can be supported to be active inquirers and collaborative builders of their own knowledge.

It is essential, however, that there is a shift in the ‘power balance’ within the classroom. This requires that both staff and students need to reassess their position, role and contribution to the learning environment.

What did the Staff identify as challenges?

Time – needing more time to develop teaching materials consistent with the Lectorial approach.

Technology – getting comfortable and confident with using technology.

Loss of control – not feeling confident to hand over power and responsibility to students.

Covering content – overcoming fear that using class time on 'activities' would prevent them from 'getting through' the course material.

Classroom management – managing students in large room when “Half of them have their backs to me and I don't know what they are doing”.

Class size – losing control a real challenge if class too big.

Conceptions of teaching – shifting approach to teaching required deliberate and concentrated effort “I just can't teach the way I want to in the learning space. It is set up like a wedding reception not a classroom”.

The “Lectorial” mode, thus requires a shift in paradigm towards student centred teaching. For some staff this was their existing approach, and preparation for “Lectorial” mode only required augmentation of skills in the use of technology and how to optimise the use of NGLS. For some staff it is a greater paradigmatic shift, and the process of professional development must go beyond skill development to a reflection of fundamental teaching philosophy and practice. Further work with the staff and the students to explicate the purpose and value of this learning and teaching approach may be beneficial.

What aspects of professional development did staff find helpful?

Access to peers experienced in learning and teaching, and the chance to 'talk to experts' and 'pick their brains’.

Spending time with some-one talking about and exploring their teaching approach.

Having a technology expert on hand in the classroom.

Having a PD person in the classroom to help prepare and debrief afterwards for lessons learned.

What would staff like more of?

More time for planning and have this included in work plans.

More training, support and practice with the technology (IWBs, clickers etc).

Help to work out how to use laptops more effectively in class, and encourage appropriate student engagement with on-line learning out of class.

More time to develop the curriculum and teaching and learning materials and resources, and more support around how these can be developed.

Help to get students using this approach as early as possible in their studies, so they too can build confidence and skills in student centred learning.

What do we need to provide more of?

Ongoing support for the development of the curriculum, materials and teaching and learning approach.

A bank of teaching ideas and materials, which can be shared and developed as other staff adopt the approach.

Significant support in how to use the technology and getting the right technology to fit the space and ensuring it works!

Opportunities to use the technology outside of class time (a play zone).

Future Directions

A move to the "Lectorial" approach is best achieved by focusing on the following:

1. Staff need to be helped to see the opportunities for more meaningful, challenging and interesting teaching and learning experiences through the "Lectorial" approach.
2. Staff require ongoing embedded in context professional development and support in their local contexts.
3. Appropriate technology needs to be made available to support the "Lectorial" approach. The technology needs to be appropriately selected, simple to use and well maintained.
4. Spaces need to be available to enable large classes to participate in student centred collaborative small groups, underpinned by sound pedagogy. The minimum requirements are; capacity of 50-120 students, open space, flat floor, furniture on castors, shared display space (whitewalls, glass walls, white boards, IWBs).
5. Spaces need to be made available to those staff wishing to use this approach, regardless of discipline, program, school or college.

It is essential that projects like this one continue to challenge the traditional classroom, since they provide a teacher-centred position, usually at the front of the room from where the teacher assumes immediate and ongoing control. Students are usually arranged in fixed seating facing forward. While this may seem to provide the advantages of visibility – the teacher can observe the students, and the students have a clear view of the teacher’s activities, it reduces the potential for peer-to-peer and collaborative learning, and the rich and rewarding learning activities that are only possible within a new generation learning space.

The project was for a limited period (one semester) in a limited range of disciplines in the DSC College. It is vital that there be ongoing trialling and evaluation of this mode in other areas and across the NGLS spaces at RMIT to triangulate the project findings and to gain further insights into the positive effects reported in both the wider educational literature and through this project.

The best learning happens when the pedagogy resonates with the environment.

5 Dissemination Strategies and Outputs

For a list of presentations and dissemination outputs please see section 3.4 project Outcome Four above and the Appendices.

In addition to the presentations listed in section 3.4, there are further plans for ongoing dissemination and development.

A set of resources were developed for the “Lectorial” project to assist staff in the preparation for, and implementation of, the “Lectorial” mode. Access was available to staff, and the members of the Lectorial Steering Committee, through the purpose built and dedicated site LECT2010 on the University online learning management system.

This material is currently being reviewed and modified for inclusion in an RMIT website (linked from the University and DSC College Learning and Teaching websites). Links will also be generated to the RMIT LTIF website from strategic sites.

Further dissemination, with the intent to create opportunities for conceptual change, will be focussed on ongoing, embedded and extended professional development opportunities using more effective strategies, such as observation and feedback on classroom techniques (including microteaching).

In addition, in 2011 the essential elements of the “Lectorial” mode will underpin two important DSC strategic LTIF projects, namely *“Activate: Enhancing active learning in DSC College large courses”*, as well as the *“Learning Segments: A blue print for reimagining postgraduate coursework masters programs @RMIT”*. This will provide further opportunities for the Scholarship of Learning and Teaching (SoLT) research.

6. Linkages

The 2010 LTIF Lectorial Project drew on a number of projects which have been completed and/or are ongoing, both nationally (through the ALTC) and locally through RMIT LTIF grants.

ALTC projects (completed)

Retrofitting University Learning Spaces

Queensland University of Technology (QUT), Charles Darwin University (CDU) and Edith Cowan University (ECU).

<http://learnline.cdu.edu.au/retrofittingunispaces/index.html>

A comprehensive learning space evaluation mode

Swinburne University, the University of Queensland, Victoria University

<http://www.altc.edu.au/project-comprehensive-learning-space-swinburne-2008>

- *Underpinned and contributed to seminars and workshops on evaluation of NGLS.*

ALTC projects (ongoing)

e-Teaching leadership: planning and implementing a benefits-oriented costs mode for technology enhanced learning

University of New England (Lead)

Australian Catholic University, CQUniversity, University of Southern Queensland

Professor Belinda Tynan (Project Leader), Professor Yoni Ryan

<http://www.altc.edu.au/project-e-teaching-leadership-une-2009>

- *Drew on costing modes for new approaches to teaching and learning.*

Educational technologies: enhancing the learning of scientific inquiry skills for bioscience students in Australian universities

The University of Melbourne (Lead)

La Trobe University, Monash University, The University of Queensland

Dr Kristine Elliott (Project Leader), Kevin Sweeney

<http://www.altc.edu.au/project-educational-technologies-enhancing-melbourne-2008>

- *Used to inform evaluation of the effectiveness of in-class technology to support student learning.*

Learning and teaching technical competence in the built environment using serious video game technology

The University of New South Wales (Lead)

Associate Professor Sidney Newton (Project Leader), Russell Lowe

<http://www.altc.edu.au/project-learning-and-teaching-technical-competence-built-environment-using-serious-video-game-techno>

- *Underpinned discipline specific (PCPM) innovations in use of technology to promote student learning outcomes.*

Learning to teach online: developing high-quality video and text resources to help educators teach online

The University of New South Wales (Lead)

Monash University, The University of Queensland, The University of Sydney

Mr Simon McIntyre (Project Leader), Mr Rick Bennett

<http://www.altc.edu.au/project-learning-to-teach-online-unsw-2009>

- *Underpinned blended learning developments..*

RMIT LTIF projects (completed)

The 2010 LTIF “Lectorial” Project built on the work of a number of completed LTIF projects, including:

2009

Engagement and Innovation Through Student Response Meters

Professor Emilio Badoer and Dr Jeremy Keens

<http://www.rmit.edu.au/browse:ID=27yajvcmjyf6z>

- *Used links to the use of technology in classroom.*

Student Engagement Through e-Learning: Using Online Simulation for Small, Medium and Large Classes

Kathy Douglas

<http://www.rmit.edu.au/browse:ID=tbydlpqeue76z>

- *Drew on blended learning to enhance student engagement and learning outcomes*

2008

e-Innovation in large lectures: student response meters

Jeremy Keens

<http://www.rmit.edu.au/browse:ID=ffj84f60ikwv>

- *Adapted in class use of technology to engage students in large class settings*

RMIT LTIF Projects (2011)

Activate: Enhancing active learning in DSC College large courses

Barbara de la Harpe: Deputy PVC L&T, DSC College

Felicity Prentice, LTIF Lectorial Project Research Fellow

- *Further development of "Lectorial" mode in large classes with identified low CES.*

Learning Segments: A blue print for re-imagining postgraduate coursework masters programs @RMIT

Barbara de la Harpe: Deputy PVC L&T, DSC College

Colin Fudge: PVC (Academic), DSC College

Ian Palmer: PVC (Academic), Bus College

Peter Coloe: PVC (Academic), SE&H College

- *Further development of new modes of teaching and learning*

7. Evaluation of project outcomes

Key evaluation question	Project Steering Committee	Project Team	Teachers	Students	Documents	Observation	Outcomes
Source of information	Monthly meetings	Continuous reflection and development	Interviews and observations	Surveys and observations	Guidelines, resources for Blackboard shell, and Steering Committee progress reports	Observation of over 50% classes across three courses.	
1. To what extent have the intended outcomes been achieved?	✓	✓	✓	✓	✓	✓	✓ Outcomes as stated in proposal achieved (see report)
2. Were there any unintended outcomes? What were they? How did they enhance or detract from the project?	✓	✓	✓	✓	✓	✓	✓ New insight and knowledge on NGLS and particularly IWB/Teamboard, added value to project. Insight into best practice professional development for staff.
3. What were the outcomes for the students and the teachers?	✓	✓	✓	✓		✓	✓ Increase in skills and professional development for staff. New and improved experiences of L&T for students.
4. How engaged were the students and teachers in the project?	✓	✓	✓	✓		✓	✓ Very high level of engagement and involvement, with rich feedback and data.
5. What factors were critical to the success of the project and what factors impeded the achievement of the project outcomes?	✓	✓	✓	✓	✓	✓	✓ Success – good governance and close assoc with staff for professional development. Challenges – timelines too short for extensive/repeat data

										gathering.
6. How did the project vary, if at all, from the original proposal and why? How did these changes affect the final outcome of the project? How did they affect the project management?	✓								✓	✓ No variation.
7. How useful are the deliverables of the project for the relevant stakeholders?		✓	✓	✓	✓				✓	✓ New insight into professional development, NGLS, use of Blackboard, in class technology (esp. IWB), aligned assessment techniques, large class/room management, monitoring small group work.
8. How will the project focus and outcomes be sustained beyond the project? To what extent are the project outcomes transferable to other institutions?	✓									✓ LTF 2011 Activate Project to utilise findings and outcomes. Incorporation of Lectorial mode into courses taught in 2011.
9. How could the project have been designed and managed differently and why?	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓ Review of required technology (ie not Teamboard in Big 9). Modification to data collection (replication of questions for greater statistical analytical strength)
10. What lessons have been learned from this project, particularly about project management and the processes of the project and how might these lessons be of assistance to other projects?	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓ Start early, get greater scope of data collection through CHEAN, commence data analysis early.

8. Final Financial Acquittal

A financial statement of acquittal of funds is included below in Table 1. This provides a statement of income and expenditure against the budget categories specified in the approved project proposal. Table 2 provides a breakdown of actuals.

2010 LTIF – The “Lectorial” Project

Document: Financial Acquittal Report
Internal Order: IO 360266 – “Lectorial” Project
Project Leader: Barbara de la Harpe: A/PVC Learning and Teaching, DSC College

Over all financial acquittal for “Lectorial” Project is outlined in table 1 as direct costs, salaries and other costs. The salary costs were divided 0.4 and 0.6 FTE with additional 0.2 FTE for online curriculum development this addition has not been reflected in line item ‘other operating’. The initial budget, line item ‘equipment’ allowed for purchase of four Teamboards this was transferred to DSC College as IO would not accept capital expenditure.

Table 1 Budget and Actual acquittal

	Budget	Actual	
Direct Cost			
Salary Costs	\$87,580	\$72,598	
Salary Oncosts	\$24,610	\$17,398	
Sub-total	\$112,190	\$89,996	
Other Costs			
Other operating	\$20,000	\$410	A
Equipment	\$42,000	\$39,567	
Sub-total	\$62,000	\$39,977	B
Total	\$174,190	\$129,973	

A. Additional 0.2 FTE for online curriculum development

B. \$33480 FOR 4 x 77" Teamboard interactive whiteboard was transferred to DSC College as this internal order could not accept capital expenditure

Incorrect salary charges were attached to IO 360266.

Figure 2, ‘C’ Silvana Cataldo, Business TAFE and ‘D’ Georgina Sheils, Applied Sciences have incorrectly charged \$175 and \$424 respectively to this LTIF project.

Table 2 Breakdown report of Actual

Cost Elements	2010 Actual	
511100 SAL-F/T & CONT-ACAD	29,572	A
511200 SAL-F/T & CONT-GEN	34,549	B
511300 SALARIES- CASUAL ACADEMIC	7,718	C
511400 SALARIES- CASUAL GENERAL	424	D
Salaries	72,264	
511900 SALARY ALLOWANCES- ACADEMIC	334	E
Salary Allowances	334	
Salaries	72,598	
513100 ANNUAL LEAVE LOADING - ACADEMIC	462	
513200 ANNUAL LEAVE LOADING - GENERAL	402	
514100 ANNUAL LEAVE EXPENSE - ACADEMIC	507	
514200 ANNUAL LEAVE EXPENSE - GENERAL	1,970	
Employee Entitlements	3,341	
521000 SUPERANNUATION- OTHERS ACADEMIC	695	
521300 SUPERANNUATION- SSAU ACADEMIC	4,075	
521350 SUPERANNUATION - OTHERS GENERAL	38	
521500 SUPERANNUATION- TESS ACADEMIC	873	
521600 SUPERANNUATION- TESS GENERAL	3,109	
Superannuation & Pension Schemes	8,791	
523100 PAYROLL TAX- ACADEMIC	2,165	
523200 PAYROLL TAX- GENERAL	1,940	
Payroll Tax	4,105	
524100 WORKCOVER PREMIUM- ACADEMIC	612	
524200 WORKCOVER PREMIUM- GENERAL	549	
Workers Compensation	1,161	
Oncosts	17,398	
Total Salaries & Oncosts	89,995	
531300 CONSUMABLE MATERIALS	323	F
Consumable Materials	323	
584500 EQUIPMENT<\$2000	869	G
584550 IT EQUIPMENT<\$2000	5,215	H
Minor Equipment, Repairs & Hire	6,084	
556380 MEETING/SEM(NO FBT)	79	I
Staff Administrative Costs	79	
557300 BANK CHARGES	8	
Finance, Legal & Other	8	
581750 STAFF DEV- NOT FBT		
Staff & Student Related Expenses		
Total Other Operating Expenditure	6,494	
Total Operating Expenses	96,489	
Operating Result	96,489	
163100 EQUIPMENT		J
Equipment		
Capital Equipment Acquisitions		
Total Capital Expenditure		
Cost Element Total	96,489	

- A Scott Mayson salary from 24/2-31/12/10 (0.4 FTE)
- B Felicity Prentice's salary from 20/5-31/12/10 (0.6 FTE)
- C Payment to Felicity Prentice (\$7543) and Silvana Cataldo (\$175)
- D Payment to Georgina Sheils (\$424)

- E Allowance Payment to Scott Mason
- F Publication & CDs etc for Felicity Prentice
- G 4 x "VP-211k,2X1 auto Vga & Stereo audio"
- H 4 x " Mac mini + mouse + keyboard + mini display port"
- I LIFT meeting on 28/9/10
- J \$33480 for 4 x 77" Teamboard interactive whiteboard was transferred to DSC College as this internal order could not accept capital expenses.

Revised Expenditure Report	
Salary + Oncosts	\$89,995
Consumables	\$323
Minor Equipment	\$6,087
Meeting Expenses	\$79
Bank Charges	\$8
Capital Equipment	\$33,480
<hr/>	
Total	\$129,972
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APPROVALS

LTIF Project Leader: _____
Barbara de la Harpe

Finance Manager: _____
Eileen Luk

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Appendices

Appendix A

A1 Student Survey Instrument, Week 4

A2 Student Survey Instrument Week 11

Appendix B

Staff interview schedule

Appendix C

Powerpoint Presentation to DSC Strategic L&T Group

Appendix D

D1 Agenda for LEaRN event

D2 Powerpoint Presentation to LEaRN

Appendix E

E1 Final report to LTIF Lectorial Project Steering Committee, 13/12/2010

Appendix F

Contribution to 2010 DVC(A) publication

Appendix G

Student Survey Results, Graphs, Weeks 4 and 11

College of Design and Social Context - Lectorial Project

Student Survey

This is a questionnaire to find out your opinions about the way this course is being presented.

For each of the statements in this survey, please mark the box which most closely represents your opinion.

Just to explain:

- When we talk about Blackboard, we are referring to the Blackboard site for this particular course only.
- The face-to-face classes (but not seminars) are referred to as Lectorials.
- The interactive whiteboards in the classrooms are referred to as Teamboards.

<i>Thinking about the way Blackboard is being used in this course:</i>		Strongly Disagree	Disagree	Neither agree nor disagree	Agree	Strongly Agree
1A	I visit Blackboard regularly to keep up to date on the course material	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
1B	The material posted on Blackboard helps me prepare for the Lectorial	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
1C	I am not motivated to visit Blackboard unless there is an assessment requirement attached to the material	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
1D	When I access the materials on Blackboard I am inspired to follow up by visiting other web resources	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
1E	I have no difficulty accessing the Blackboard site	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
1F	Having the Blackboard site helps make me feel connected to this course	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

1. What would make the Blackboard site more helpful to your learning?

<i>Thinking about the way Lectorials (workshops/face-to-face classes) are being held:</i>		Strongly Disagree	Disagree	Neither agree nor disagree	Agree	Strongly Agree
2A	The room in which we have Lectorials is set up to help my learning	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2B	I get distracted when sitting at tables with other students	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2C	Working in small groups helps me to learn from other students	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2D	Working in small groups is mainly good for socialising	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2E	The activities we do in the Lectorials help me to learn	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2F	Often I have no idea what we are doing in the activities or why we are doing them	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

2. How could the Lectorials be improved?

<i>Thinking about the way technology is being used in class:</i>		Strongly Disagree	Disagree	Neither agree nor	Agree	Strongly Agree	Not Applicable
3A	Having multiple Teamboards in the classroom helps create a good environment for learning	<input type="checkbox"/>					
3B	Having the opportunity to use the Teamboards myself encourages me to gain confidence	<input type="checkbox"/>					
3C	Teamboards help me learn from other students' presentations	<input type="checkbox"/>					
3D	I would like to see Teamboards used in more classrooms	<input type="checkbox"/>					
3E	The use of technology like 'Clickers' (personal response systems) and laptops in class aids my learning	<input type="checkbox"/>					

3. How can Teamboards and other technology be used to help your learning?

<i>Thinking about your experiences in this course:</i>		Strongly Disagree	Disagree	Neither agree nor disagree	Agree	Strongly Agree
4A	Overall I would prefer to have a traditional lecture in a lecture theatre for this course	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4B	I think working in small groups is a good way of learning	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4C	I can see how the material on Blackboard connects with what we do in the Lectorials	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4D	Being prepared for class by visiting the Blackboard site is very important to help me participate in Lectorials	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

4. What improvements to the way this course is presented would you like to see?

Thank you for completing this survey.

Your responses will be completely confidential, and you can contact the researchers Felicity Prentice and Scott Mayson on (03) 9925 9632 if you have any questions.

LTIF - Lectorial Project

Student Survey 2

This is a questionnaire to find out your opinions about the way this course is being presented.

For each of the statements in this survey, please mark the box which most closely represents your opinion.

Just to explain:

- When we talk about Blackboard, we are referring to the Blackboard site for this particular course only.
- The face-to-face classes (but not seminars) are referred to as Lectorials.
- The interactive whiteboards in the classrooms are referred to as Teamboards.

<i>Thinking about the way Blackboard is being used in this course:</i>		Strongly Disagree	Disagree	Neither agree nor disagree	Agree	Strongly Agree
1A	I visit Blackboard regularly to keep up to date on the course material	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
1B	The material posted on Blackboard helps me prepare for the Lectorial	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
1C	I only access the material on Blackboard because it is part of the Assessment for this course.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
1D	I think Blackboard is the best way to deliver the learning material I need for this course.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
1E	I prefer to have learning materials in a digital format (such as pdf, MSWord, web based videos and web links) rather than printed format.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
1F	I would like to have more interactivity (such as wikis, forums, discussion groups and blogs) used on Blackboard for this course.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

1. What has been the most helpful aspect of the Blackboard site **FOR THIS COURSE to your learning.**

<i>Thinking about the way Lectorials (workshops/face-to-face classes) are being held:</i>		Strongly Disagree	Disagree	Neither agree nor disagree	Agree	Strongly Agree
2A	The room in which we have Lectorials is set up to help my learning	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2B	I think that being in a large class (more than 80 students) creates the best learning environment	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2C	Working in small groups helps me to learn from other students	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2D	The preparation work I do (from the Blackboard material) is essential for making Lectorials good learning experiences	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2E	The activities we do in the Lectorials help me to learn	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2F	Other students' presentations help me to learn	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

2. How could the Lectorials be improved?

<i>Thinking about the way technology is being used in class:</i>		Strongly Disagree	Disagree	Neither agree nor	Agree	Strongly Agree	Not Applicable
3A	Having multiple Teamboards in the classroom helps create a good environment for learning	<input type="checkbox"/>					
3B	I believe Teamboards work best when both teachers and students use them	<input type="checkbox"/>					
3C	Teamboard offers a variety of presentation formats (such as drawing) which stimulates my interest	<input type="checkbox"/>					
3D	I would like to see Teamboards used in more classrooms	<input type="checkbox"/>					
3E	I believe that Teamboards are an important part of Lectorials	<input type="checkbox"/>					

3. How can Teamboards and other technology be used to help your learning?

<i>Thinking about your experiences in this course:</i>		Strongly Disagree	Disagree	Neither agree nor disagree	Agree	Strongly Agree
4A	Overall I would prefer to have a traditional lecture in a lecture theatre for this course	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4B	I think working in small groups is a good way of learning	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4C	I can see how the material on Blackboard connects with what we do in the Lectorials	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4D	Having small class sizes (less than 45 students) creates the best learning environment	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4E	I would like to have the Lectorial approach used in more courses	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

4. What feedback would you like to give us on the "Lectorial approach" to learning?

Thank you for completing this survey.

Your responses will be completely confidential, and you can contact the researchers Felicity Prentice and Scott Mayson on (03) 9925 9632 if you have any questions.

Questions for Interviews with Staff in Lectorial project

Preparation of Students for Lectorials Through BlackBoard

- Do you feel confident using BlackBoard for this purpose?
- Has the practice of preparing students prior to class (via BB) been a success? What factors have aided/hindered this?
- How are you using the prep work in your Lectorials? Do you intend to change this for the rest of Semester?

Approach to Teaching

Thinking of the students as learners, generally, how would you describe them? (offer list of prompt words if required)

Prompt Words for description of students:

- | | | | |
|--------------------------|--------------|--------------------------|--------------|
| <input type="checkbox"/> | Confident | <input type="checkbox"/> | Enthusiastic |
| <input type="checkbox"/> | Mature | <input type="checkbox"/> | Stressed |
| <input type="checkbox"/> | Anxious | <input type="checkbox"/> | Passive |
| <input type="checkbox"/> | Independent | <input type="checkbox"/> | Motivated |
| <input type="checkbox"/> | Curious | <input type="checkbox"/> | Responsible |
| <input type="checkbox"/> | Silent | <input type="checkbox"/> | Active |
| <input type="checkbox"/> | Lazy | <input type="checkbox"/> | Distracted |
| <input type="checkbox"/> | Chatty | <input type="checkbox"/> | Indecisive |
| <input type="checkbox"/> | Autonomous | <input type="checkbox"/> | Challenging |
| <input type="checkbox"/> | Contributors | <input type="checkbox"/> | Involved |
| <input type="checkbox"/> | Tired | <input type="checkbox"/> | Connected |

How would you describe your preferred approach to teaching? (prompt with list of statements if required)

Prompt statements for description of teaching approach

- In my interactions with students in this course I try to develop a conversation with them about the topics we are studying.
- I encourage students to restructure their existing knowledge in terms of the new way of thinking about the course that they will develop.
- I think an important reason for running teaching sessions in this course is to give students a good set of notes.
- In this course, I provide the students with the information they will need to pass the formal assessments.
- I should know the answers to any questions that students may put to me during this course.
- I present material to enable students to build up an information base in this course

Collaborative Learning and Teaching Practices

- To what extent do you feel confident in using collaborative small group teaching in this context (ie Lectorials/ large classes)? (Prompt – the rooms are Collaborative Learning spaces by physical design)
- How do you think the students are responding to this approach?
- What would help you to feel more confident with this approach?

Learning Space

- Have you experienced collaborative teaching spaces prior to the lectorial project?
- Do you believe that the learning space has had an effect on the way you teach? How so?
- How has the learning space affected the way the students learn? How so?
- If you could describe your ideal learning and teaching space (classroom) for this course, what would it be?
- Would you use the lectorial approach or parts of it in future teaching?
- Do you feel the students like the collaborative learning spaces?

Technology

Blackboard

- Do you integrate the DLS in to your teaching practice?
- Comparing your previous and lectorial classes how have you implemented blackboard as a part of your teaching practice?
- What features do you use in blackboard? Text, documents, links, video, gradebook, wiki et al.
- Has the student use of the DLS improved ?
- Has blackboard provided opportunities for improved learning?

Teamboard

- Have you previously used teamboards?
- Have teamboards impacted on your teaching style?
- Do teamboards provide opportunities for improved learning styles?
- Did you use power point or teamdraw software with the teamboard?
- Have you tried using other software with the teamboard?
- Did the students use the teamboard to present class activities?

Laptops

- Are laptops useful for learning in Lectorials?
- Do laptops create distractions in class? How did you overcome this?
- How have you used laptops for learning in class? Group/ individual activities.
- Did you integrate specific/ specialist software for lectorial classes?

Other technologies

- Are there any other educational technologies that you use in class?
- Were there any other inhibitors or enablers with the technology for the lectorial project?

LEaRN Event: From Campus to Classroom

24th November 2010

Learning Environments Spatial Laboratory
Frank Tate Building (Building 189)
University of Melbourne

9.30 – 11.00 Session 1: Campus and Master-planning

Presenter: Kristen Whittle (Bates Smart Architects)
Presenter: Philip Trengove (DEECD)
Chair: Rob McGauran (McGauran, Giannini, Soon Architects)

11.00-11.15 Break

11.15-12.45 Session 2: Online Learning, Virtualisation and New Pedagogies

Presenter: Gregor Kennedy (University of Melbourne)
Presenter: Tom Kvan (LEaRN Director, University of Melbourne)
Response/ Chair: Jan Ygge (Karolinska Institutet)

12.45 – 1.15 Lunch

1.15 - 2.45 Session 3: New Learning Environments, Drivers & Staff Professional Development

Presenter: Gerard Hogan (Catholic Education Office)
Presenter: Barbara de la Harpe Scott Mayson (RMIT)
Chair: Kenn Fisher (University of Melbourne)

2.45 – 3.00 Break

3.00 – 4.30 Session 4: Creating Effective Learning Environments

Presenter: Peter Jamieson (University of Melbourne)
Chair: Barbara de la Harpe (Director, LEaRN@RMIT)

4.30 – 5.30 Drinks

Contact: Alan Gilmour
LEaRN Executive Officer
alandg@unimelb.edu.au
p 03 9035 4084 m 0447 660 053

Preparing users of new generation learning spaces

Barbara de la Harpe, Deputy PVC(L&T) DSC, RMIT
Felicity Prentice, College of DSC, RMIT



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3 undergraduate courses
PCPM, Media and Communication
Over 300 students
9 programs

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discipline based non-formal embedded in local practices

RMIT University©2010 6



So, what did the students think?

Percentage of students who thought that having the Blackboard site helps them feel connected to the course

1. 20%
2. 52%
3. 83%
4. 98%

Percentage of students who thought that the material posted on blackboard helps them prepare for the lectorial

1. 20%
2. 52%
3. 82%
4. 98%

3. 82%

Percentage of students who could see how the material on Blackboard connects with what they did in the Lectorials

1. 51%
2. 61%
3. 71%
4. 81%

4. 81%

Percentage of students who thought that the room in which they have
Lectorials is set up to help their learning

1. 10%
2. 52%
3. 76%
4. 100%

3. 76%

Percentage of students who thought that working in small groups is a good way
of learning

1. 26%
2. 56%
3. 66%
4. 86%

4. 86%

Percentage of students who thought that the activities they do in Lectorials
helps them to learn

1. 15%
2. 35%
3. 55%
4. 75%

4. 75%

Percentage of students who thought that working in small groups is a good way of learning

1. 40%
2. 66%
3. 82%
4. 100%

3. 82%

Percentage of students who visited Blackboard regularly to keep up to date on the course material

1. 25%
2. 50%
3. 75%
4. 100%

4. 75%



Observations?

Students **did access information** on blackboard **prior to class** (but only one had an assessment component built in). This **pleased** and **surprised staff** and gave them more confidence in the student as responsible learners

The **space did work** (for most) and the **flexibility of the furniture** enabled a seamless transition from learning event to learning event

Multiple projection sites were useful, especially in the large class environment. IVBs encourage greater engagement and participation

There was a real **sense of community** among the students, but this was reported as being restricted to classes less than **45 in size**

I greatly enjoyed this approach. It made the class interesting and I actually wanted to participate and complete tasks.

It would have been nice to have Lectorials in the last 3.75 years of my degree instead of the last class only!



So, what did the staff think?



1. **time** – required to develop teaching materials consistent with the lectorial approach
2. **technology** – getting comfortable and confident with using technology
3. **loss of control** – feeling confident to hand over power and responsibility to students
4. **covering content** – overcoming fear that using class time on 'activities' would prevent them from 'getting through' the course material
5. **classroom management** – managing students in large room when "Half of them have their backs to me and I don't know what they are doing"
6. **class size** – control a real challenge if too big
7. **conceptions of teaching** – shifting approach to teaching required deliberate and concentrated effort "I just can't teach the way I want to in the learning space. It is set up like a wedding reception not a classroom"



access to experts and the chance to 'talk to experts' and 'pick their brains' spending time with some-one talking about and **exploring their teaching approach**

having a **technology expert** on hand in the classroom

having a **PD person in the classroom** to help prepare and debrief afterwards for lessons learned



Would like more training, support and practice with the **technology** (IWBs, clickers)

Would like to **work out how to use laptops** more effectively

Would like **more time to develop the curriculum** and teaching and learning materials and resources, and more support around how these can be developed

Would like to have **students using this approach as early as possible** in their studies so they too can build confidence and skills in student centred learning



sufficient **time** for planning and in workplans

ongoing **support** for the **development of the curriculum**, materials and teaching and learning approach

bank of teaching ideas and materials, which can be shared

significant support in how to use the **technology** and get the technology to fit the space and ensure it works!

opportunities to **use the technology outside of class time** (a playzone)

Explicitly **interrogate teaching philosophy and practice**, provide information up front about student centred teaching and learning which is supported by research and literature, and then help staff put it into their own meaningful context

It was hard to get my head around at first, but now I want to teach more courses this way. It's more interesting for the students, and it's far more interesting for me.



The best learning happens when the pedagogy resonates with the environment

Get it?

Hint: underpinning belief necessary for staff to effectively teach in new learning spaces



student centred

Thank you!

APPENDIX D

Contribution to 2010 DVC(A) Publication

Learning and Teaching Investment Fund Lectorial Project

Pedagogy tells us that learning is best when it is student-centred, active and collaborative. What if we could integrate the intimate learning and teaching style of a tutorial into a large class environment?

The 2010 Learning and Teaching Investment Fund (LTIF) Lectorial Project aimed to evaluate the feasibility and effectiveness of implementing a large-class, collaborative, interactive and enquiry-based learning environment. Traditionally, classes are taught through lectures, often followed by small tutorial/seminars. Lectures are generally teacher-centred and didactic. Students are passive recipients of information, resulting in low levels of engagement and superficial approaches to learning.

Literature indicates that shifting the emphasis to student-centred learning can significantly increase student engagement, problem-solving ability and learning outcomes. 'Lectorials' use three elements to provide a student-centred learning environment within a large class:

1. using New Generation Learning Spaces which provide flexible room design, enhanced with technology, to increase active learning
2. providing most of the course content online, underpinned by an interactive guided instructional design, for students to access before the lectorial—at a time and place that accommodates their life/study/work patterns
3. creating an active, engaging, enquiry-based large class environment where students work in small groups and have the opportunity to maximise peer-to-peer and student-to-teacher learning. Most significantly, through the preparatory online work, students develop a declarative knowledge base which deepens into higher cognitive domains of creating, applying and evaluating knowledge.

The LTIF project revised and offered three undergraduate courses using the lectorial approach. The courses ranged from first to fourth-year and included more than 300 students from across nine programs. Staff were given support in curriculum design, teaching and learning approaches, and—most significantly—the use of technology such as interactive whiteboards.

The results indicate that this is a significant and manageable step forward in the way we offer learning opportunities to our students.

"I greatly enjoyed this approach. It made the class interesting, and I actually wanted to participate and complete tasks."

"It would have been nice to have lectorials in the first 3.75 years of my degree instead of the last class only!"

"It was hard to get my head around at first, but now I want to teach more courses this way. It's more interesting for the students, and it's far more interesting for me."

The lectorial approach involves adopting new paradigms of learning and teaching—and that takes enthusiasm and vision. It is about being prepared to create a 'workplace of learning' that offers students more responsibility and choice. It is about acknowledging and supporting the incredible quality of learning and teaching that dedicated staff and students can achieve.