



Centre for Teaching and Learning Seminar Room

What it is?

The University of Newcastle's next generation learning space is located in the Centre for Teaching and Learning (CTL) within the Auchmuty Library building of the University's Callaghan campus. It is adjacent to the Auchmuty Information Common, a dynamic student space incorporating a café, computer facilities, photocopying facilities, and information desk. The CTL Seminar room is primarily accessed by academic and teaching staff at the University of Newcastle.

The educational technology infrastructure cost \$43 500 and the cost of the refurbishment was approximately \$25 000.

Consistent with the commitment to create an environment for promoting student-centred teaching, core elements of the workshop and seminar space are flexibility of seating and desk space and cutting edge educational e-technology for optimal interactivity and participant engagement. So, tables and chairs can be arranged in multiple ways and are easily moveable. E-technology includes an interactive whiteboard, data projector, videoconference screen and facilities, 20 laptops with wireless connectivity, and most importantly, Genesis™ interactive technology. The latter allows for maximum interactivity, among workshop participants, and between participants and workshop facilitators.

Why it is?

The Centre for Teaching and Learning (CTL) was established at the end of 2006 to assume a leadership role in learning and teaching at the University of Newcastle. Its mission included improving support for high quality teaching and learning across the following five core function areas: Teaching and Learning Support and Development, Educational Resources Support and Development, Learning Support, Teaching Spaces Support and Office of the Directorate.

Critical to the successful achievement of the Centre's mission has been the design and development of its purpose-built spaces. The first, for Teaching and Learning Support and Development workshops and seminars, was designed in a way that would reflect and reinforce the University's commitment to fostering an environment that promotes quality, collaborative learning through the application of principles of scholarly teaching and student-centred learning.

An important component of the CTL's responsibilities is to develop and conduct workshops and courses that model, support and enhance teaching and learning for and with academic staff. Creating a technologically innovative and pedagogically sound seminar room for academic development had four core motivations:

1. To secure a purpose-designed space for academic staff development and support;
2. To provide a collaborative learning space for academics who facilitate the learning of students who use collaborative student learning spaces;
3. To resource the space with up to date equipment to support e-technology mediated teaching and learning; and
4. To provide opportunities for modelling best practice interactive learning experiences that can be transferred into the teaching of the participants' students.

Additionally, this learning space, through the application of multimedia technologies, complements the following aims of the overall academic development program, that include:

1. Modelling activities that engage learners, particularly those that utilise interactive technology and facilitate collaborative or peer-based learning;
2. Providing programs at different levels of sophistication for academics with different levels of teaching experience;
3. Fostering scholarship of disciplinary teaching and learning; and
4. Evaluating the quality of learning using educational technology.

A significant aspect of the planning and development of the space was the collaboration and input from staff from the CTL, especially the teaching spaces support team, University architects, facilities management, and information technology. Importantly, the collaboration occurred from the outset. Traditionally, teaching spaces support teams (or their equivalent) are responsible only for the technical aspects of rooms such as lecture halls, tutorial rooms, and computer labs. Typically, their role is to ensure that the computer systems operate efficiently and are called upon to fix issues that arise when users of the technology have problems, such as

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Lectopia™ not operating effectively. In the design of the CTL seminar room, however, this was not the case, with the teaching spaces support team involved in the planning from the initial stages.

From the outset, those with relevant expertise made decisions in either educational technologies or student-centred pedagogical practices. Importantly, the CTL, guided by information provided by the experts, was involved in the decision-making processes.

It is widely acknowledged that student group learning spaces incorporated in university library designs have become increasingly common in order to meet the learning needs of students (e.g. Bennett, 2006). Less common, however, are learning spaces specifically designed for the learning needs of academic staff. The CTL workshop and seminar room was deliberately designed as a dedicated space for academic development. Creating a space that enables meaningful social interactions and collaborations between participants in ways that encourage deep learning, was at the forefront of the design stages of this learning space.

Essentially, constructivist pedagogical principles informed the development of the CTL seminar room, with particular attention being paid to principles relevant to, or able to be modified for, high quality adult learning. They are Vygotsky's social constructivism and Zone of Proximal Development (ZPD) (McInerney & McInerney, 2002), and an inquiry-based approach drawing on Dewey's theories of constructing learning (Dewey, 1966). Both Vygotsky and Dewey are aligned philosophically and the theories mentioned here encourage active learning processes within social, or group, contexts.

What happens here?

The CTL Seminar Room provides a space for the facilitation of experiential learning in a higher education context that is grounded in recognised pedagogy theories combined with the use of innovative multimedia technology. The University has a strong commitment to high quality student-centred learning, and many of the participants at workshops are adult learners. Facilitation of sessions in this space are, therefore, characterised by active and reflective, group-based and collaborative inquiry-based experiences that are designed to promote deep and continued learning. Workshop participants are encouraged to reflect on the relevance and importance of these experiences for promoting high quality learning among the students they teach.

Educational technologies are integrated in academic workshops in ways that contribute to the enhancement of participant learning, rather than being used principally because the technology is available. This is one measure used to align pedagogy and workshop outcomes, ensuring that facilitators acknowledge that

“Teaching is a scholarly activity and a life-long learning process with no single method or pedagogy that is most effective” (Ali, 2005, p. 243). This statement is taken with the view, in this context, that there are various ways to facilitate student-centred learning approaches in face-to-face learning contexts, both mediated through e-technology and not.

The pedagogical approach combined with the physical space encourages interaction between participants. In particular, sessions are based on the premise that participants will work with each other and facilitators on aspects of teaching and learning, rather than a didactic approach to teaching, which encourages passive learning, through an “... approach of transferring technical information...to students...” (Barraket, 2005, p. 67).



Figure 1. Participant logging in to Genesis™

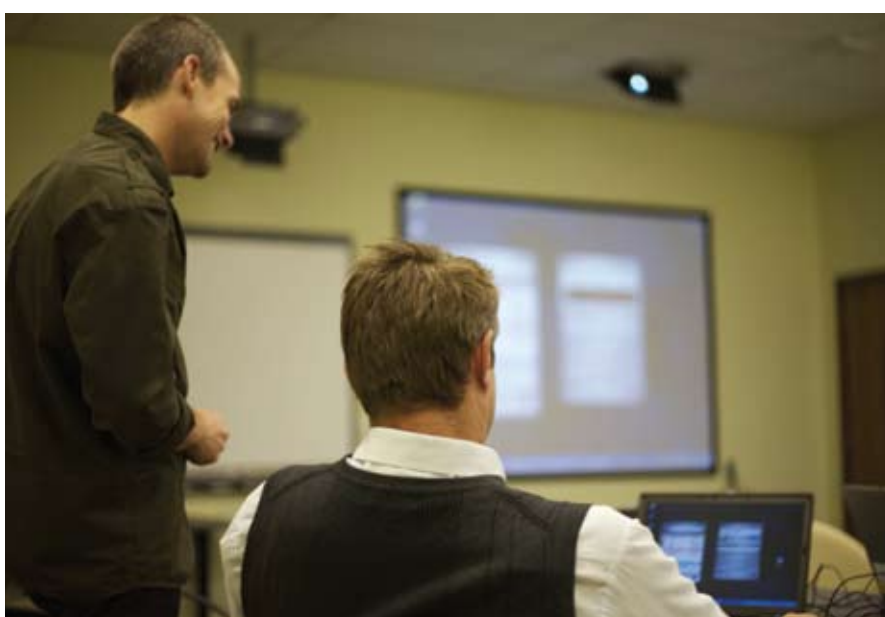


Figure 2. Facilitator guiding participant through Genesis™ chat facilities

These approaches are underpinned by the aim of the Teaching and Learning Support and Development team that is to support staff in taking a scholarly approach to teaching and learning. This approach is characterised by:

1. reflective practice, where teaching and learning is developed through: self reflection; peer review and feedback from colleagues; student feedback; and the scholarship of teaching and learning;
2. student-centred teaching;
3. teaching that engages students intellectually and develops their professional and practical capacities; and
4. engagement in open, critical dialogue about teaching and learning, and the exchange of ideas and strategies within and across disciplinary boundaries.

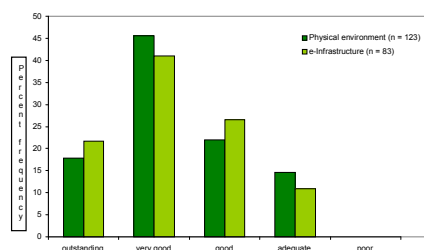


Figure 3. Satisfaction of physical environment and educational technology from 4 workshops

How is the space used?

The CTL seminar room is designed for seminar, forum and workshop-style events for up to 20 people. The space allows for maximum flexibility, particularly in the use of modularised furniture that can be configured in a variety of ways to suit the numbers of participants and the predetermined aims and outcomes of sessions.

There is a strong focus on modelling teaching and learning approaches that participants, who are typically academic staff with teaching responsibilities, can incorporate into their own teaching practice. In using the seminar room for academic development in the areas of enhancing teaching and learning skills for teaching academics, a principle of co-facilitating workshops between academics positioned in the CTL and faculty academics has been established. This way, the authenticity and relevance of the workshop by having a faculty academic as a co-facilitator, is enhanced.

Emphasis is placed on facilitating engaging activities that enable participants to examine their teaching and learning styles and activities that demonstrate collaborative learning activities. This approach also ensures best practice use of cutting edge educational technology, such as the wireless interactive technology of Genesis™ is modelled. Genesis™ is a classroom based teaching tool that enables participants to connect with each other and the facilitator through the use of laptops with wireless capabilities. Participants can communicate both one-on-one and through whole-class discussion.

How is technology used?

Combining educational technologies with student-centred pedagogical approaches used in order to present workshop content is an important aspect of workshop design and delivery. How pedagogies and educational technologies are combined and effectively integrated into workshops is explored here.

The initial conceptualisation of the learning space included a large focus on showcasing collaborative learning possibilities. Embedding the multi-media technologies in workshop planning has enabled this to be realised. As a result, learning activities take place which provide participants with a combination of interactive collaboration between participants, independent of the facilitator as well as collaboration between participants and facilitators. This is able to occur through the use of Genesis™. Figures 1 and 2

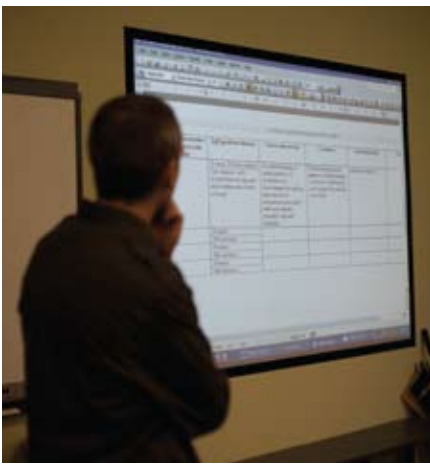


Figure 4. Whole group reporting using Genesis™

show Genesis™ being used by participants, with the guidance of a facilitator, in a collaborative learning workshop.

Vygotsky's theory of social constructivism plays an important role in mediating learning between the pre-existing knowledge participants bring to workshops and the tools used in the workshop, such as Genesis™ and the interactive whiteboard. These tools are used in order to extend the learner's knowledge, rather than as a reinforcing tool or merely a superficial learning activity. In this way, the 'tools' (for example, Genesis™) "... act as cognitive scaffolds that facilitate extension of knowledge into related areas" (McInerney & McInerney, 2002, p. 45). This transformative process has been successful in improving, amongst other things, the likelihood of participants to integrate learning technologies into their own teaching, as explained in the evaluation section below. Embedded within Vygotsky's theory of social constructivism is the Zone of Proximal Development (ZPD) (Daniels, 2001; Newman & Holzman, 1993), and an aspect of student-centred learning that is applied in workshop facilitation. In this way, mediating between educational technologies and workshop content, the facilitator assists, or scaffolds, participants through individual problem solving to achieve higher knowledge "under... guidance or in collaboration with more capable

peers" (Vygotsky, 1978, p. 86 in Daniels, 2001, p. 57), in this case peers being fellow participants who may have had experiences in either the content or the tools being used to learn the content.

Social constructivism aligns with computer educational technology mediated learning, when the educational technology is seen as a tool to build on participants' prior understanding and knowledge of a particular topic. In recent years, with the wide spread use of computer educational technologies, there has been an increase in the publications that link constructivism as a good practice pedagogy to use with computer mediated learning within higher education contexts (Laurillard, 2002). In applying pedagogical practices to learning with e-technologies, Rubin (1996) asserts that when "Technology is viewed as a tool...in the context of solving problems" it enables participants to assist one another. Whilst Rubin discusses this in the context of the mechanics of technology, this can also be applied to content understanding.

In selecting the educational technology for the seminar room, targeting facilities that were able to effectively incorporate interactivity resulting in heightened participant engagement was important. Consequently, interactive whiteboard, video conferencing and most importantly, Genesis™ technology were selected to be incorporated in the seminar room. The selected technologies are non-intrusive, though play an important role in facilitating workshops and other sessions held in the seminar room. As mentioned previously, sessions often utilise movable laptop computers that go online via wireless network. The network, Genesis™, enables virtual interactivity between participants and facilitator(s) and allows all participants to observe the work of each other and provide feedback as appropriate; and use of the interactive white board.

How was the facility evaluated?

The space is systematically evaluated as part of participant surveying, occurring at the end of each workshop or course. Unsolicited informal feedback provided by participants, such as through emails sent post-event, are also being collated to inform evaluation and future planning for both the use of this space and future learning spaces.

Specifically, the physical landscape of the environment is evaluated through the following type of questions (adapted depending on the workshop held) in the survey tool, with responses marked on a five-point Likert scale:

1. I rate the physical environment of the workshop (for the context of learning) as:
2. I rate the convenience of the location of this workshop as:
3. The infrastructure of the classroom (such as computer technologies) enhanced my learning experience:
4. The layout of the classroom (eg desks, chairs) was conducive to providing good learning opportunities:

The space is also evaluated informally, through feedback based on observations of workshops from CTL and faculty-based facilitators. For example, through observation of participant movement and comfort during a number of workshops, it was decided that the furniture selected was too large for the space available. As a result, the furniture initially used was moved to another workshop space, and furniture that fitted more ergonomically in the seminar room was brought in. This has resulted in a more comfortable workshop environment, enabling interactions between participants to continue in a heightened way, and in the way initially planned.

Evidence from participants, gained through surveys, indicates that the workshop space has been rated a success, determined by post-survey workshops conducted in particular when the educational technologies are incorporated within the workshop delivery and content.

The quality of the CTL collaborative learning space was rated on a five point scale from excellent to poor by participants of workshops facilitated by the CTL during Semester 1, 2008. As figure 3 shows, a majority of participants thought the physical environment and educational technology (e-infrastructure) was outstanding or very good. Another 22 percent (averaged result) thought that they were good.

Analysed participant data indicates that in workshops where Genesis™ is used, the e-interactive technology has enhanced the experience of participants, with 100 percent indicating they strongly agreed or agreed that their experience had been enhanced. 83 percent of participants indicated the use of Genesis™ enhanced learning opportunities for participants through the facilitation of content. Demonstrating the transformative impact that modelling effective use of e-technologies has, 80 percent of participants indicated that they would consider using Genesis™ to support teaching and learning in their courses.

Supporting the quantitative data, one participant commented that a workshop using Genesis™ technology was a positive experience, due to the "Interaction, looking at the work of others really helped me understand the subject much better" (anonymous participant, 29th May, 2008).

The main types of learning and teaching that occur in the seminar room are workshops and seminars for academic staff. These sessions are guided by the pedagogical approaches identified already in this paper. Data of the effectiveness of the physical space, content of workshops, activities conducted and use of e-technologies is gathered through formal surveys completed by participants at the conclusion of workshops, and also through observations and reflections of the facilitators of sessions.

In terms of comparison with intended usage, there is a clear alignment. The purpose of the space was to model student-centred approaches through workshops designed for academic and teaching staff. Survey data, as reported above, has demonstrated that this has occurred. Future plans for the use of the seminar room include

teleconferencing with participants on multiple sites and to hold one-topic forums in the space. Both these endeavours will continue to promote and encourage collaborative learning as an important aspect of staff development activities at the CTL.

Overall, the space design and equipment has worked as planned. There were, however a number of minor problems that presented. For example, there was a plan to include couches and side tables, but the limited physical space of the seminar room prevented this from being actualised. As already detailed, changes in furniture were made as a result of using space and realising the desk configurations did not suit the desired workshop outcomes in a completely satisfactory way.

Problems to do with the use of Genesis™ presented themselves early in the delivery of workshops. It was realised that logging on in a consistent way presented a challenge to the facilitators, due to the number of steps needed to log onto the laptop, to the University server and to Genesis™ itself. Although these steps cannot be eliminated, focused training has enabled the process to be made clear and explicit to users of the technology. Ongoing issues with the University's wireless capabilities, beyond the scope of the CTL, have presented difficulties in using Genesis™. For example, when wireless connectivity is not working in the library, this impacts the seminar room, resulting in Genesis™ not being available. This negatively impacts the intended learning of specific workshops. The University network is continuing to be improved. The e-technology problems have highlighted the need to have a backup plan and hard copy resources.

Genesis™ enables collaborative learning to take place in a way that can be modelled in a user-friendly way for both experienced and inexperienced e-technology users. Figure 4 shows Genesis™ being used during a workshop for participants to report to the whole workshop group outcomes from a set activity.

What were the main lessons learned?

The effectiveness of the interactive technologies has been more positive than expected both in terms of improving learning outcomes of participants and in the positive attitudes displayed by participants using e-technologies in a facilitated workshop. The success and learning benefits of using Genesis™ over other face-to-face activities when sharing detailed information between participants was realised when for one particular workshop, Genesis™ was unable to be used, due to technical difficulties. An activity that had worked exceptionally well through the mediation of Genesis™, did not work as well when participants did not have the facility to display and thus draw on explicitly and honestly on their responses to a set activity. As a result, conversations between participants and the facilitators did not develop as deeply as it had in previous workshops. In this case, the benefits of using Genesis™ were made evident, and have encouraged its continued and greater use in workshops.

Plans are currently being considered to implement this style of innovative use of teaching space, through interactive video conferencing, with satellite campuses in Ourimbah (NSW Central Coast), Port Macquarie and Singapore. Additionally, planning is currently underway for another innovative learning space, to be accessed primarily by students seeking to use Learning Support services. Experiences from the design and construction of the seminar room and facilitation of workshops have informed the planning of two new learning spaces used by the CTL. Aspects of the seminar room that need modification, or have been problematic, have been detailed throughout this paper.

The main advice relates to the planning and development of such a space and to the real value of having all expertise and experience involved from the outset. The CTL workshop space was truly a collaborative endeavour, involving people from facilities management, IT, AV, and teaching and learning. All decisions, therefore, benefited from the expertise and experience of several key players.

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References

- Ali, S. (2005). Effective teaching pedagogies for computer science. *Mathematics and Computer Education*, 39(3), 243-257.
- Barraket, J. (2005). Teaching research method using a student-centred approach? Critical reflections on practice. *Journal of University Teaching and Learning Practice*, 2(2), 64-74.
- Bennett, S. (2006). First questions for designing higher education learning spaces. *The Journal of Academic Librarianship*, 33(1), 14-26.
- Daniels, H. (2001). *Vygotsky and pedagogy*. London: RoutledgeFalmer.
- Dewey, J. (1966). *Democracy and Education*. USA: The Macmillan Company.
- Laurillard, D. (2002). *Rethinking university teaching: A conversational framework for the effective use of learning technologies* (2nd ed.). London: Routledge.
- McInerney, D. & McInerney, V. (2002). *Educational psychology: Constructing learning* (3rd ed.). Frenchs Forest: Pearson Education Australia.
- Newman, F. & Holzman, L. (1993). *Lev Vygotsky: Revolutionary scientist*. London: Routledge.
- Rubin, A. (1996). *Educational technology: Support for inquiry-based learning*. Retrieved May 30, 2008 from <http://rapb.mspnet.org/index.cfm/8353>