Spaces for Knowledge Generation

a framework for designing student learning environments for the future
The design of spaces to support the generation of knowledge by students themselves is an important and neglected field. Kornberger and Clegg (2003) argue that space is a hidden precondition for the processes of organisation, and that spaces could be designed in three different realms, borrowing Foucault’s (1970) idea of a ‘heterotopia’. Firstly, spaces for experimentation can “create new graveyards for old ideas and maternity ward for the new; generate playfully possible realities and real possibilities”. Secondly, spaces for new languages can allow new discourses “where one can hear voices that are not normally heard”. The third realm is a space for new identities, “in which we can play different roles” (Kornberger and Clegg, 2003: pp. 86–87).
Although the obvious purpose of higher education is the development of independent thinking skills and domain knowledge by and for students, the design, control and organisation of learning environments is primarily the responsibility of administrators and teaching staff. With large group lectures and seminars still predominant in higher education, the organisation of space and time configures students as receivers of knowledge until the point of graduation, at which time they are expected to produce knowledge of their own. The Spaces for Knowledge Generation Project examines models for making this student experience more coherent.
The SKG project is based on the philosophy that constructivist learning, as well as research and study, is learner–generated, making use of whatever technologies and approaches students favour, and that learning spaces must be organised to reflect learner–generated aspects of learning. The context of the learning experience necessarily changes over time with technological economic and social developments influencing the types of learning spaces learners and teachers require to achieve their learning outcomes. Another major change has been the shift from individual learning to the importance of peer learning through ‘networks of knowledge builders’ (Nespor, 1994: p. 7).
A collaboration

- La Trobe University
- Charles Sturt University
- Apple
- Kneeler Design Architects
Thursday, 25 November 2010

So where are we up to?
We are now into the Research & Development Phase: May 09 to Nov 09
Stakeholder discussions
Forum 1, May 28
Forum 2, Late July
(Interim project report)
Forum 3, October.
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Methodology

• Literature review
• Video/audio taped interviews & field notes from Study Tour
• Case study compendium
• Prototype designs developed during ‘prototyping workshops’
• Transcripts and notes from reflective exercises
• Invited papers, panel and plenary discussions
• Qualitative analysis of interview transcripts and notes

Initial Phase: a wide range of secondary data will be collected through desk research conducted by team members. This is aimed at building a collective understanding of the current landscape, particularly in relation to recent developments within Australia and overseas in the area of flexible learning spaces. Data may include relevant studies, project reports, papers, case studies, design documents and technical information. Drawings, photographs and walk-throughs will be collected wherever possible. This work will result in the development of a concise literature review in the area of knowledge production and student learning spaces and a compendium of illustrated case studies, as well as a list of references that will be compiled as a result of this phase of desk research.
Study Tour

- Stanford
- Apple
- MIT
- Harvard
- Kings College London
- Cambridge
- Open University
- TU Delft
- Sheffield
In 1999, this building was chosen to showcase Stanford's commitment to advances in the education process. The interior was completely redeveloped with a generous $15 million grant from the Wallenberg Foundation in Sweden. The Wallenberg Hall gift is the largest such grant from this foundation, and the first made outside of Sweden.
Bob Smith is Director of Technology Services at Wallenberg Hall, and we interviewed him as one of the main designers of the learning spaces there. VIDEO CLIP: “The building’s role...” (1.15)
One of the most rooms we saw at Wallenberg Hall was Room 127, a classroom designed for up to around 20 students. These control pads were in use in many of the learning spaces we saw at Stanford, and allow people to walk up and book rooms on the spot. Data feeds into a central booking system.
The room had a combination of features including:

* Videoconferencing
* Two Webster rear-projected whiteboards as well as “huddle boards” and other whiteboards around the room.
* 20 Macbook laptops (other spaces ran Windows)
* iSpace Software: Each laptop has software that allows users to push files from one computer to another and share control of the Websters. This experimental, open-source software helps students collaborate with each other and with faculty during class.
* Flexible Steelcase furniture. Everything was sturdy but also light, and these tables could be quickly folded and moved to the side.
* Breakout spaces
VIDEO CLIP: “The thing that works best is...”
Our next stop...
# Australian Universities

**Apple Executive Briefing**  
**Jim Henson Room**  
**Tuesday, January 13, 2009**

<table>
<thead>
<tr>
<th>Time</th>
<th>Activity</th>
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<tbody>
<tr>
<td>7:30-7:45</td>
<td>Arrival</td>
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<tr>
<td>7:45-8:00</td>
<td>Welcome and Introductions</td>
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<tr>
<td>Polo Swartzik, Business Development Specialist</td>
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<tr>
<td>Chris Feit, Higher Education Manager (Vic/Tas)</td>
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<tr>
<td>8:00-8:15</td>
<td>Briefing Objectives and Goals</td>
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<td>8:15-9:15</td>
<td>Apple in Higher Education</td>
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<tr>
<td>Kris Bazan, Director, R-10 Institution</td>
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<tr>
<td>9:15-9:30</td>
<td>Break</td>
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<tr>
<td>9:30-10:30</td>
<td>Apple Corporate Update</td>
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<tr>
<td>Josh Hoover, Director, Investor Relations</td>
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<td>10:00-10:45</td>
<td>Lunch at Caffé Mags</td>
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<tr>
<td>10:45-12:00</td>
<td>Creating a 21st Century Learning Environment</td>
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<tr>
<td>Scott Morris, IT &amp; Learning Technologies, Education Markets</td>
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<tr>
<td>12:00-1:00</td>
<td>Lunch at Caffé Mags</td>
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<tr>
<td>1:15-2:15</td>
<td>iTunes U and Mobile Learning</td>
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<tr>
<td>Mispel Young, Sr. Manager, iTunes U &amp; Mobile Learning</td>
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<td>2:15-3:15</td>
<td>Apple Technologies</td>
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<tr>
<td>Jack Quattlebaum, Consulting Engineer, EBP</td>
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<tr>
<td>3:15-3:45</td>
<td>Open Discussion: Summary, Evaluations &amp; Next Steps</td>
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<tr>
<td>Chris Feit, Higher Education Manager (Vic/Tas)</td>
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</tbody>
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One of the things we took away from our meeting with Apple that was not actually under non-disclosure was a useful metaphor. Apple’s Learning Technology expert Scott Morris likened higher education to a journey including the cave, the mountaintop, the watering hole, and a camp fire.

The Cave: (working on your own) independent, reflective.
The Campfire: (listening to stories) formal learning, listen and absorb knowledge.
The Watering hole: (hanging out with others) informal learning, discuss & create meaning.
The Mountain top: (speaking to an audience) presenting and publishing. Demonstrating understanding.
The so-called “Student Street” at the Stata Center at MIT is by far the most impressive informal learning space project we have seen on the study tour. The building opened in March 2004.
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This large area acts as a wide walkway through the center and includes food outlets alongside a variety of spaces suitable for private and group study. We returned to this place a number of times in the two days at MIT and we noticed that every one of the spaces was used extensively, yet it never seemed crowded.
Breakout space
VIDEO CLIP: David Silverman “I still really like this building...”
Technology Enabled Active Learning (TEAL) Lab, MIT. John Belcher, Physics.
Technology Enabled Active Learning (TEAL) Lab, MIT. John Belcher, Physics.
VIDEO CLIP: “What I like best about it is the ability to interact with the students...”
John Belcher likes being able to hear what students say.
“Getting an education at MIT is like taking a drink from a fire hose.” John Belcher was highly skeptical about this view of learning, and cautioned us not to assume that students are retaining anything when we bombard them with information in standard lecture style sessions.
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Former MIT President Jerome Wiesner (1971-1980) coined this colorful description of the MIT educational experience:

‘Getting an education at MIT is like taking a drink from a fire hose.’

Most students and faculty agree that the analogy is appropriate. ...In 1991, a group of hackers managed to embody this sentiment by turning a fire hydrant into a working drinking fountain in front of the largest lecture hall on campus, 26-100.”

Ira Haverson and Tiffany Fulton-Pearson, editors. “Is This The Way to Baker”
VIDEO CLIP: John Belcher on the importance of evaluation. TEAL was evaluated in terms of student learning outcomes. “We had really good assessment from day one.”
Stephen’s photo from MIT: Group
Stephen’s photo from MIT: Booth
Stephen’s photo from MIT: Recycle
Thursday, 25 November 2010

Stephen’s photos of Sheffield: Classroom
Thursday, 25 November 2010

Stephen’s photos of Sheffield: CILASS (Centre for Inquiry Based Learning into the Arts and Social Sciences)
Stephen’s photos of Sheffield: Research & Study area
Stephen’s photos of Sheffield: Sofas
Stephen’s photos of Sheffield: Flexispace
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Stephen’s photos of Sheffield: Flexispace 2
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Stephen’s photos of Sheffield
Thursday, 25 November 2010

Stephens photos of Sheffield: Silent study sign
TU Delft, The Netherlands

- Founded in 1842
- About 14,000 students (13% international)
- 14 Bachelors programs
- 41 Masters programs

TU Delft (or Delft University of Technology) is the biggest Technical university in the Netherlands
Informal learning spaces were everywhere at TU Delft. You may just be able to make out that there were power outlets beside these table in a hallway.
The TU Delft Library is an iconic building on this campus, with its conical tower rising up above ground level and allowing light to filter down. This reminded me of Parliament House.
Thursday, 25 November 2010

I took a few photos of students lying down and relaxing here. Library staff told me that these cushions had been bought with this kind of study in mind, but they were happy for people to sleep if they wanted!
Thursday, 25 November 2010

I was particularly fascinated by this ‘rooftop space’ (above an eatery) which is actually indoors inside one of the very big buildings.
I didn’t speak to this group, but they look like they might be a class group of postgrads. This was informal space designed to be conducive to group work.
So what is coming out of the Study Tour for the SKG Project in terms of research data? Firstly, During the site visits we have been conducting a series of semi-structured interviews with people involved in the design and management of learning spaces at each institution. We ask them about what has and hasn’t worked in each of the spaces. These interviews have been very enlightening and we anticipate making extracts available on the project website.
Case studies

- Room 127 at Wallenberg Hall, Stanford
- Student Street, Stata Center, MIT
- Northwest Lab building, Harvard
- Digital Laboratory, Kings College London
- and many more...

We now have a growing list of likely case studies from the Study Tour. We will document these using photographs, drawings and descriptions based on the interviews and other discussions. The plan is to do a cross case analysis of these and other case studies drawn from the project’s reference group and other existing sources. We are aiming for a range of spaces, including formal and informal, and indoor and outdoor learning spaces, with an emphasis on student peer learning and active, research-style work.
• Further data collection...


• **Questions and comments?**

• **Project website**

  http://www.skgproject.com/

Study Tour Photos by Matt Riddle, Mike Keppell and Stephen Jones
Video shot by Stephen Jones and Matt Riddle and edited by David Manzin

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