Developing learning spaces in university

Science Learning Spaces and Transition into First Year Bachelor of Science

Significant investment has been made in the past ten years in universities and schools in regard to learning spaces and engagement and retention of students as well as preparing students for the world of work outside of the education system. A learning space is one where the teacher and student engage in learning, where a task is realised and the ability to adopt new ways of seeing the world are understood. Research looking at learning spaces and the interaction between architecture and education, show that there is a disconnect between the designing of the learning space and those that teach in the learning space. Student feedback on the success of the learning space is not often considered or is the transition of the students from a school learning space environment to a university/tertiary learning space environment.

Learning spaces have many different contexts – school spaces, university spaces, virtual spaces, however the area of interest for this study is the transition of students from an innovative learning space in a secondary school environment to an innovative space in a tertiary environment. When researching and gathering information, the premise is that space (natural and built environments) shapes practices and outcomes in teaching and learning, in particular with students moving from secondary to tertiary environments. According to Oblinger (2006), the relationship and social practices that make up learning spaces are only one aspect of the complex relationships of teaching that inform learning outcomes. However, a learning space can improve conditions and mediate relationships that improve student learning along with the physical, mental and cognitive indicators

(Oblinger 2006). The use and effect of learning spaces, particularly physical learning spaces are often related pedagogically and organisationally to changes in use and demands in any point of time. Arnot and Reay (2007) discuss an example any one particular space could be used for individual pathway planning, team teaching, personalised learning, teamwork, problem solving, community based learning, which can all be done in open multipurpose learning spaces that link the education to the real world environment. Bruckner (1997) and Nespor (2004) state that temporality is a key factor in how organisations, teachers and students respond to new learning spaces over time.

Souter, Riddle, Keppell, Sellers (2010) suggest that innovative learning spaces such as the purpose built spaces that universities are investing in today, should support a constructivist approach to learning and support student centred learning that is collaborative and experiential. Often spaces are built for design without considering the learning and comfort of the students, as well as the success and retention of students in a particular program. Designing built environments on sound pedagogical and architectural principles that are appropriate to community needs provides new opportunities for academics to create new partnerships and new pedagogical possibilities (Blackmore et al, 2011). However, Elmore (2007) indicates that this means focusing on the purpose and rational for change which include teaching and learning practices to support the learning environment and student needs. Currently there is a lot of research looking at the transition of students from secondary to university (Johnson, Johnson, Farenga & Ness (2005); Sleeter 2008; Zeichner 2008, 2010) however the

area of research looking at the use of traditional pedagogy and learning spaces at university show that there is a need for change (Zeichner 2010).

The DEECD authorised The Connections between *Learning Spaces and Learning Outcomes* : *A Literature Review* (Blackmore *et al* . 2010) which concluded that while the investment of building new spaces has been based on sound architectural and educational principals, there was little evidence that showed the connectedness to improved student learning, and how the spaces were used by teachers, students and communities pedagogically, as well as what effect they had on different student social groups. The question then is how does community and governance in higher education relate to learning, teaching and space? Temple (2008) suggests that this is an under researched area and one that may have significance in retention and enjoyment of students at university. Often what universities and architects think people think about their buildings is unsupported when university staff members and students are actually asked (Temple 2008). Student-centred approach to university design often focus on issues of pedagogy and the curriculum rather than the physical environment (Temple 2008). Some writers have noted that teaching and learning should drive design, rather than visa versa (Jamieson et al. 2000; Jamieson 2003).

1. Guiding principal for new learning spaces secondary and tertiary.
2. Case Studies – New Chem labs, physics learning space and GCF and Education
3. Perspectives on learning spaces and pedagogical needs.
4. Learning spaces and pedagogy
5. Retention and Attrition of students in tertiary education

6. Pat Sanders – Brighton Grammar Science lab, thorough case study
7. Scotch College – science labs
8. Comparative analysis of planning between case studies – planning, methodology and outcome

References

Arnot, M. and D. Reay (2007). “ A Sociology of Pedagogic Voice: Power, inequality and pupil consultation.” Discourse: Studies in the Cultural Politics of Education28(3): 311-325.

Bruckner, M. (1997). “ Eavesdropping on Change: Listening to Teachers During the First Year of an Extended Block Schedule.” NASSP Bulletin81(593): 42-52.

More and more high schools are moving to a block scheduling arrangement, which results in longer and fewer classes each day. Changes in teaching strategies are essential to the success of such programs, for without significant revisions in classroom time use, block scheduling results in lengthy lectures or multiple lessons forged together, sometimes without logic.

Nespor, J. (2004). “ Educational scale-making.” Pedagogy, Culture & Society12(3): 309 – 326.

The article explores the complexities of educational scalemaking. ‘ Educational scales’ are defined as the spatial and temporal orders generated as pupils and teachers move and are moved through educational systems; scales are ‘ envelopes of spacetime’ into which certain schoolbased

identities (and not others) can be folded. Scale is thus both an object and a means of power in educational practice. Using data from life history interviews with an elementary teacher in the USA, the article illustrates the multiplicity of scale-making processes, and raises the question of how certain scale definitions become more widely accepted and authoritative than others.

Oblinger, D. (2006). Learning Spaces. D. Oblinger, Educause.

Space, whether physical or virtual, can have a significant impact on learning. Learning Spaces focuses on how learner expectations influence such spaces, the principles and activities that facilitate learning, and the role of technology from the perspective of those who create learning environments: faculty, learning technologists, librarians, and administrators. Information technology has brought unique capabilities to learning spaces, whether stimulating greater interaction through the use of collaborative tools, videoconferencing with international experts, or opening virtual worlds for exploration. This e-book represents an ongoing exploration as we bring together space, technology, and pedagogy to ensure learner success.