

Chapter 6

Designing and Evaluating Learning Spaces: PaSsPorT and Design-Based Research

Shirley Reushle
University of Southern Queensland, Australia

ABSTRACT

This chapter discusses the purposes, design and implementation of a physical experimental learning and teaching space which forms part of the University of Southern Queensland's Australian Digital Futures Institute (ADFI). It identifies challenges associated with the initial design and offers some recommendations for addressing these challenges. The concept and principles of the PaSsPorT design model which has been developed to guide the redesign of the space are introduced, and a brief description of another ADFI space, the software research and development laboratory follows. The paper also introduces a process for evaluating the design and implementation of learning, teaching, and research spaces using design-based research to frame the model.

INTRODUCTION

The University of Southern Queensland (USQ) is a regional, multi-campus institution with more than seventy-five percent of its twenty-six thousand students studying at a distance in local, national and international locations. Given the geographical

spread of the students, the focus on an equitable student learning experience has always been a priority. Evidence indicates that USQ's students tend to be connected, active, resourceful learners familiar with interacting in a complex world of multi-tasked, community-focused activity. As USQ is not constrained by 'place', the need to further explore hybrid (physical and virtual) learning spaces is obvious. Grummon (2009, as

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cited in Bradwell, 2009, p. 63) makes the point that the world is in a “neutral zone” which she views as a time of “maximum uncertainty and time for creative possibility between the ending of the way things have been and the beginning of the way they will be” supporting the idea that infrastructure should not be built only around the needs of institutions as they exist already.

Developing effective spaces for 21st century learning is a key challenge across the world. Programs in Australia such as the Digital Education Revolution (DEEWR, 2009) and the Building the Education Revolution (DEEWR, 2009a) have been seen as opportunities to consider what effective 21st century learning spaces can look like and to implement strategies for achieving this vision. This is particularly the case for those working with learning technologies who have yet to see significant transformational change in education despite seeing profound change in society, the workplace and how learners live and work. In today’s interconnected, technology-supported and driven world, learning typically takes place in physical, virtual and remote places. It is often an integrated, highly technical environment in which learners learn. There is a need for a broad spectrum of opportunities for learners and teachers to interact and collaborate – through virtual and physical spaces using multiple communication streams and the ability for spaces to be accessed and used to cater for the continuum of difference in terms of learners, teachers and discipline areas.

This chapter does not examine all of the learning spaces at USQ but focuses primarily on one space which is part of USQ’s Australian Digital Futures Institute (ADFI) - a physical, technology-rich learning and teaching space - the Technology-Enhanced Learning Laboratory or TELL. It also briefly explores how the findings reported in this chapter can be used to evaluate another ADFI space, the software research and development laboratory (SRDL) where both physical and virtual activities occur. The purposes, design and implementation of the TELL are dis-

cussed and issues associated with the initial design are identified. The concept and principles of the PaSSPorT (Pedagogy-Space-People-Technology) design model (Reushle, 2009), an adaptation of Radcliffe’s (2009) Pedagogy-Space-Technology (PST) framework are then applied to the review and redesign of this space. A model for evaluating the design and implementation of USQ learning spaces using design-based research is also introduced (Reushle, 2009a).

BACKGROUND

ADFI is a research and innovation Institute established in 2008. The scope, focus and strategic intent of the Institute align with the University’s 2020 vision to be recognised as a world leader in open and flexible higher education. ADFI contributes to both the eLearning and the eResearch agendas and aims to form strong links and networks locally, nationally and internationally with like-minded individuals and groups. It has two physical environments: the Technology Enhanced Learning Laboratory (TELL), which provides a facility for staff and students to investigate technology-enhanced learning innovations and the Software Research and Development Laboratory (SRDL) which accommodates the software development team and provides some access to software and hardware for trial purposes. ADFI’s goals are underpinned by research with the relationship between learning and innovation at the heart of its overall agenda.

Technology Enhanced Learning Laboratory (TELL)

The increasing access to a variety of technologies and the need to investigate innovative approaches to learning and teaching led to the conception of the TELL. An initial proposal for a technology enhanced ‘sandpit’, submitted by two academics from the Faculty of Education to the Information

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