

# **THE NEED FOR A CULTURALLY INCLUSIVE ANDRAGOGY FOR COLLABORATIVE DESIGN LEARNING**

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## **ABSTRACT**

In recognition of the apparent paradox between the cultural-systems of Asia and the West and the teaching and learning styles they promote, this platform paper aims to propose how research might investigate differences between achievement and diverse learning preferences at various stages of the design process in the multi-cultural studios of Deakin University. The paper presents a Strategic Teaching and Learning Grant project currently running at Deakin as a reflexive research program aimed at resolving the learning difficulties of international students collaborating in three undergraduate design studios. The primary aim of this program is to inform a new culturally inclusive andragogy for problem-based design teaching through experiential learning theory.

## **KEYWORDS:**

Collaboration, internationalisation, studio pedagogy

## **ENABLING COLLABORATION THROUGH CULTURALLY INCLUSIVE DESIGN TEACHING**

Although collaborative problem-based learning reflects the design process in successful professional practice, the approach is not without shortcomings as a teaching and learning archetype for design. The major hurdle is not the application of the concrete knowledge itself, but the ability of students to navigate the process of transition from theory to practice in a collaborative setting. Students are not educated

in the skills needed to work in an effective collaborative environment, and this hampers the development of their design skills in the studio. Moreover, in the context of multicultural studios, the western model of effective team-working may not necessarily be appropriate for multicultural teams (Bosley, 1993). Although successful changes to models of assessment, teaching and group formation have been informed by recent studies (Tucker, 2005), further research is needed to establish best-practice principles informed by statistically significant data for the teaching of collaborative design projects that are culturally inclusive.

In recognition of the apparent paradox between the cultural-systems of Asia and the West and the teaching and learning styles they promote, newly commenced research at Deakin, internally funded by a Strategic Teaching and Learning scheme, aims to develop a new and culturally inclusive andragogy (the theory of adult education) for experiential collaborative learning in the design studio. Building on previous studies advancing conceptual frameworks to guide and support internationalisation through university curricula (Jacobs, 2000), the research aims to lessen the collaborative learning adjustment difficulties international students, particularly those of Asian origin, experience through their transition into Deakin University life in the cross-cultural studios of the School of Architecture and Building – where 20% of students originate now from South East Asia or are the first generation children of immigrants from this region.<sup>i</sup>

Previous research has suggested that internationalisation can have a positive effect on both economic and educational systems growth at local, national and international standard and in promoting Australian education as a growing export commodity.<sup>ii</sup> Cultural inclusiveness is, moreover, acknowledged by Australian universities as an important goal,<sup>iii</sup> and one that can enrich teaching practices. In line with this contention, the research posited in this paper recognises that the recent increase in the internationalisation of Australian higher education provides an opportunity to exchange cultural experiences and has potential to radically improve tertiary teaching methodologies at a number of levels across all spectrums of design through the collaborative process of exchanging new information, technologies and ideas that is open to renewal and innovation without denying a commitment to cultural origin and

tradition. Yet in order to achieve such standards in the design studio, teachers need to update their skills, knowledge and attitudes through cross-cultural practices.<sup>iv</sup> We shall now investigate how this might be achieved through research.

### **CULTURALLY INCLUSIVE SUSTAINABLE DESIGN TEACHING: UNDERSTANDING THE EFFECTS OF LEARNING STYLE PREFERENCES ON THE DESIGN EDUCATION EXPERIENCES OF INTERNATIONAL STUDENTS**

The pedagogical shift needed to emphasise collaboration is commonly compounded by the increasing cultural diversity seen in Australian higher education. Department of Education, Science and Training figures (DEST, 2004) reveal that the number of international students, the majority of who are of Asian origin, enrolled at Australian universities has doubled in less than a decade. In 2004, 1,577 out of the 6,571 students enrolled in built environment courses were from overseas. For these high numbers of students of different cultural backgrounds faced with, when starting at a new university overseas, many social obstacles as well as an educational background structured around an almost antithetical teaching perspective (Bradley, B & Bradley, M. (1984), collaborative design presents a difficult and frustrating academic challenge (Bosley, 1993; Biggs, 1994). The average mark, for instance, of international students at Deakin University in early collaborative design projects has over the last three years been seventeen percent lower than for home students (data derived from 2005 Deakin pilot study. See also Burns (1991) on the problems of first-year overseas students. By working towards an inclusive andragogy recognising diverse learning preferences to increase international students' academic success rates, research at Deakin aims to increase international student retention and enrolment rates as well the collaborative skills they require to co-operate in the design of buildings.

The methodology of the Deakin study recognises that research in education entails organised reflective inquiry into teaching processes. As a consequence, the one-year program has been organised heuristically; progressively focusing and redefining the research as it responds to accumulated experience. The methodology is adaptive and responsive – it does not adopt a single, fixed methodological design. In many ways the antithesis of the linear, clearly defined hypothetico-deductive method, a variety of

methods will be employed and the research design, while carefully conceptualised, will not be so fixed and predetermined that it denies responsiveness to what is discerned. Rather, it will evolve. For as Connell has discussed (Connell, 1985), with increased experience and developing awareness, the flexibility of an evolving rather than a circumscribed model can promote creativity in research.

Such a research protocol is cyclical or iterative in nature. Commencing with the conceptualisation and articulation of the learning preferences to be explored, the design experiment will move therefore through a series of interventions which are evaluated and used to inform the next intervention. Schon's model of reflection-in-action (Schon, 1987) complements the iterative and investigative nature of this type of (action) research. The research program iterates therefore a one-year internally funded pilot project that took place at Deakin University in 2005 focusing on "Establishing Best-Practice Principles for the Teaching of Group Design Projects." The results of that project informed new teaching, assessment and group formation strategies for design studios. The 2006 research will further the 2005 findings, which were informed by personality-type and experiential learning theory, by conducting across a further year a study that builds upon the reflexive strategies of the 2005 project. The 2006 study will superimpose a further layer of enquiry exploring relationships between different learning style preferences, teaching approaches and cultural systems in design education.

In order to explore these relationships and differences, the research will focus on design studio teaching processes through the recognition of reported learning styles. The conceptual frame adopted in this will be the 'accommodating', 'diverging', 'assimilating' and 'converging' categories seminally defined in the experiential learning theory of Kolb (Kolb, 1984). Building on previous studies indicating that learning styles may differ from one culture to another ((Yamazaki, In Press); (De Vita, 2001)), studies will be conducted to explore the relationships between learning preferences and the performance of students during the design process of three key projects undertaken at Deakin. Two of the projects, in the first and third-year studios, will be evaluated to address the issues of acclimatisation reported by overseas students working in collaborative teams. The third project is a fifth-year collaborative multidisciplinary design studio that involves final year students of architecture and

construction management. The fifth-year design experiment will reiterate the team formation studies of the 2005 study at Deakin (Tucker, 2005) to build upon research suggesting that design identities and team-role preferences serve not only to differentiate design team members but also as anchoring points for discussions about design (Kilker, 1999). As well as students' team role and learning preferences, teachers' pedagogical preferences have a significant role in the collaborative studio. If there is conflict between the learning style of the student and the teaching style, the learning is likely to be severely impaired. In line with this the design studio experiments will assess, compare and reconcile the learning style and team-role preference characteristics of students of diverse cultural origins across the built environment disciplines to advance collaborative teaching models that are compatible with those characteristics and which recognise and draw upon different pedagogical approaches internationally and within Australasia. The aim of this experiment is not the development of an exclusive andragogy, but rather the broadening of teaching approaches to encompass and facilitate a diverse range of learning styles.

In common with the 2005 study at Deakin, the 2006 research will also include the formative, summative and illuminative evaluations of assessment models, effective studio collaboration strategies, group formation structures and appropriate teaching models in all three studios. In addition to these evaluations, in 2006 learning styles will be correlated with individual student academic achievement, feedback, studio observations and tutor reflections. The primary research questions for the evaluations and the design studio experiment are as follows:

- 1) Does structuring group formation by learning styles and team-role preferences have a positive impact on student academic and course satisfaction outcomes?
- 2) What combinations of team formation and teaching models and learning styles significantly improve learning outcomes?
- 3) For design students in different disciplines, and with different learning style preferences and cultural origins, are there any significant differences in performance scores, student satisfaction as measured through questionnaires and unit evaluations, and group working abilities and student participation as measured through studio observations?

- 4) Are there any significant differences across learning style preferences in different stages of design education and in different built environment disciplines?
- 5) Are there any further opportunities for making experiential problem-based teaching more culturally inclusive to international undergraduates during their early education?

These research questions will be implemented in two stages. The first will define the descriptive data and learning styles of the subjects. The interaction of learning styles and cultural origin will be considered through focus groups, student feedback questionnaires, and unit evaluations in the two first-year and third-year design units and the fifth-year multidisciplinary collaborative design unit. The second stage of the studio studies will be the design experiment. There are four different steps to the experiment through which the students will be asked to engage with different learning activities and design situations. These different steps will provide a forum for trialling different teaching methodologies and provide a basis for studying the interactions of these with different learning styles. The performance of students in each step will be correlated with their learning style preferences, cultural origin, discipline, studio observation records and feedback questionnaires illuminating the complex embedded relationship between teaching methods, assessment, group work and formation, learning styles and cultural-systems.

## **PROJECTED OUTCOMES**

As noted by Curro and McTaggart (Curro, 2003), internationalism is not a simple or easily compartmentalised concept for it bridges many aspects of social, educational and professional settings. The collaboration between design teachers and educators at Deakin that is described in this paper provides an appropriate vehicle for innovation that promises unique teaching approaches and better learning outcomes in architecture and the built environment, and, furthermore, the education of graduates more adaptable to the diverse requirements of a profession that is increasingly international in its sourcing and placing of graduates.

Like the concept of internationalisation itself, the internal and external ramifications of this project are inextricably entwined. The results of this project will be primarily focused on the comparison across years and subjects of student achievement, as

reflected in grades and graduate outcomes, and student satisfaction as reflected in student evaluations – two indicators that our research thus far has shown reinforces the need for further investigation into ways of advancing architectural design andragogy (Tucker, 2005). An analysis of how the embedded concepts of teaching methods, assessment, group work and formation, personality theory, learning styles and cultural-systems come to affect architecture and construction management student learning outcomes and satisfaction with the course in general will work to inform and promote more culturally inclusive teaching practices throughout tertiary built environment education. The development of such an andragogy will lead to a number of positive outcomes including reducing the alienation felt by international students and their consequential learning difficulties. This promises to free resources from time spent on remedial teaching, which will in turn relieve pressure on the sessional funding of design teaching – a pressure being experienced in the majority of schools throughout Australia and New Zealand.

Although the timing of this paper comes far too early to publish results or even to speculate upon them, the early stages of our study at Deakin have offered encouragement and reinforced the perceptions of those involved in the research that the questions being addresses by it are indeed important. For whereas last year’s study into “establishing best practice principles for the teaching and assessment of collaborative design projects” initially met with little enthusiasm from students, the demand by students to be involved in the early focus groups this year has been overwhelming. It would appear that for far too long international students have felt disenfranchised in the student design studio and anxious that the alienation and isolation they feel during collaborative design projects is detrimental to their learning. It is the hope of 2006 Strategic Teaching and Learning project team at Deakin that this anxiety will now be short-lived.

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## ENDNOTES

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<sup>i</sup> A ratio that is predicted to double in the next ten years.

<sup>ii</sup> See, for example, Zhang, C., Sillitoe, J. and Webb, J. (1999) In HERDSA International Conference Melbourne, Australia., who suggest that “Australian universities can capitalise on the rich cultural resources that international students bring with them. In the current climate of internationalisation of education, there are vast opportunities to explore, such as curriculum development using the resources of international students for deeper understanding across cultures in social, educational and business contexts.”

<sup>iii</sup> Kay Stevens' paper, Promoting and Advancing Learning and Teaching in Higher Education: The Messages from the AUQA Reports, written in 2005 for the Carrick Institute for Learning and Teaching in Higher Education, aims to support the development of individual and institutional good teaching practice by identifying key opportunities for action. Executive summary point 20, which is highlighted as needing immediate endeavour, identifies internationalisation as “an established dimension of Australian higher education learning and teaching.” This is echoed in Deakin University’s current Teaching and Learning Development Plan, which names “excellence through Internationalisation and Cultural Inclusiveness” as one of eight strategies for Teaching and Learning. In support of cultural diversity, the Deakin policy aims to “develop and promulgate strategies for inclusive pedagogy and teaching international students... [and] ensure that strategies in relevant equity plans address the diversity of the student body.”

<sup>iv</sup> As Zhang, C., Sillitoe, J. and Webb, J., state (1999), “It is important that there is awareness of the significant cultural factors which impinge upon the learning experiences of international students, and that effective strategies are developed to facilitate the learning adjustment of international students... [This] involves awareness of one’s own embedded cultural values or orientations about learning, and, at the same time, developing awareness of other people’s embedded cultural values

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and orientations...This shared awareness will help to prepare both the students and the staff to promote effective learning in cross-cultural situations.”