

First Year Experience and Planning Studio Pedagogics

Author

Bosman, Caryl, Dredge, Dianne, Dedekorkut, Aysin

Published

2010

Conference Title

2010 Annual Conference of the Australian and New Zealand Association of Planning Schools

Rights statement

© The Author(s) 2010. The attached file is reproduced here in accordance with the copyright policy of the publisher. For information about this conference please refer to the conference's website or contact the author.

Downloaded from

<http://hdl.handle.net/10072/37557>

Link to published version

<https://anzaps.net/past-conferences/2010-lincoln/>

Griffith Research Online

<https://research-repository.griffith.edu.au>

First Year Experience and Planning Studio Pedagogics

Caryl Bosman, Dianne Dredge and Aysin Dedekorkut
Griffith School of Environment Griffith University Gold Coast campus
c.bosman@griffith.edu.au

Abstract

Studio Pedagogy is usually the realm of Architecture and the Arts rather than Planning. As student numbers increase and academic institutions place pressure on staff to achieve more with less and to improve student retention and heighten the first year experience, appropriate and effective pedagogies become critical.

Planning studios in most Australian Universities have been re thought and re structured in recent years and Griffith University is no exception. Our paper will draw upon some of the literature on first year experience and studio teaching and learning in general and look at what is happening in other first year planning programs in Australia. We will draw upon the changes made to the first year planning studio at Griffith's Gold Coast campus and comment on possibilities for and relevance of planning studios; specifically in relation to the first year experience and as a means to address the institutional call for excellence in teaching and learning.

Introduction

Studios are invaluable learning and teaching contexts in many creative discipline areas (Ochsner 2000, Gore 2004). As a learning and teaching approach, their main value is that they shift the role of the student from passive receiver of information to an active and engaged learner (Tucker & Rollo 2005). This mode of teaching is widely used in architecture, urban and regional planning, fine arts, interior and industrial design, and has also been used in fields such as physics in an effort to assist students engage in hands-on learning (Loss and Thornton 1997, Jamieson 2003). In design, planning and creative disciplines, studios are often used as a means of engaging with stakeholders outside the university and engaging with community groups to solve real-life problems. Studios are also teaching spaces that provide the context for developing community oriented learning and student sociality. They provide the opportunity for teachers and students to explore problems and identify and reflect on solutions in a reiterative way. Students learn from their teachers' experience, their application of concepts and they develop deep understanding by doing. Likewise, teachers learn about students and their challenges in learning, in conceptualising problems and in engaging in the theorypractice interface. Despite the utility of studio teaching however, there is relatively little literature available which examines the studio as an educational environment, a learning and teaching approach, or how to evaluate studios (Ochsner 2000). Properly conceptualised and delivered, studios can provide students with confidence, self esteem, substantive knowledge about a topic and a range of generic skills including communications skills, creative problem solving and critical thinking (Loss and Thornton 1997).

In this paper we argue the importance of a studio teaching and learning environment as an important and valuable First Year Experience component in the Planning program, in addition to it being a significant pedagogical space. We first outline what we consider to be a planning studio, we then briefly outline some general characteristics of current first year students; the Gen Y cohort. This leads into a discussion on the First Year Experience and the

importance of studio as a valuable and meaningful contributor to this phenomenon. We end with a look at some of the changes made to the first year planning studio at Griffith University, Gold Coast campus and argue that the charrette model is a viable and valuable solution to address the institutional call for excellence in teaching and learning, to achieve more with less, to improve student retention and to contribute First Year Experience programs.

What is a planning studio?

There is no one definitive description of what a 'studio' is. A web search gives 'studio' as being: a room in which art (music, painting, sculpture, dance etc) is taught, studied and or practiced; a room in which music is recorded and an apartment typology. Most studios in the disciplines of architecture and design are teaching and learning places (as opposed to spaces) that are inhabited by students and staff in various ways (see Green & Bonollo 2003). The studio as a place is often characterised by creative disorder and a degree of messiness; that is the place is appropriated by the students to suit their needs. Planning programs do not have the same tradition of studio teaching and learning that architecture and design programs have. Nonetheless, planning studio we argue is an important element in an undergraduate planning program. Although there is no single definition for a studio as a teaching and learning approach, there are a number of features that are common to many forms of studio pedagogy and it is these characterisations that distinguish a planning 'studio' from a 'workshop', 'tutorial' or 'lecture'. The features that define a planning studio are: project and problem based learning, emphasis on active independent learning, a balance of theory and practice, use of multiple teaching and learning approaches, project based assignments and the physical learning environment. Each of these features is briefly outlined below.

Project and problem based learning

Planning studio teaching and learning is essentially project and problem based. In planning studios Problem Base Learning (PBL) is focused on the processes of the planning profession, that is, the studio format links the student to their chosen career path in a very direct way. This makes the teaching and learning environment relevant and meaningful to the student. PBL as a recognised teaching and learning approach has been around since the 1940s and has been taken up by different disciplines in different ways (Pawson, Fournier, Haigh, Muniz, Trafford & Vajoczki 2006). Generally PBL involves students working on a 'real' project to solve 'real' problems. Students frequently work in groups and sometimes individually to produce 'real' outcomes. The task of solving the problem becomes the means of learning. Goodnought (2006) argues that 'PBL is driven by open ended messy [or wicked] problems that require students to work in collaborative groups to find feasible solutions'. From a student perspective¹, PBL '*is a very exciting and interactive form of learning*'. PBL stimulates deep learning (Kotval 2003) which results in knowledge that is meaningful and long term. Importantly, PBL builds collegiality, albeit sometimes through dispute resolution, and allows students to be innovative and have fun in the process of finding solutions.

Emphasis on active independent learning

PBL requires students to participate in the teaching and learning process; students can not learn if they do not engage with the problem. This means studio attendance is

¹ All student comments are taken from anonymous student evaluations of first year planning studio 2006-2009 inclusive.

essential. It also means that the studio needs to become a safe place for students to challenge and grow the 'self', a place where students assess their own knowledge and skills and take responsibility for the project and its outcomes. This is demonstrated in the comment by a first year planning studio student, who wrote:

'Through the completion of this course I feel like a whole new person. Although this may sound corny I feel strongly about this as I have learnt things about myself and the world I would not have known otherwise.'

As this comment suggests, the planning studio is also a place where students can draw upon their personal life experiences to enhance their learning. The physical and pedagogical environment of the studio offers opportunities for students to take control of their learning and to learn at their own pace. Another student wrote: *'The studio is very practical and hands on. The environment is relaxed and here is a good atmosphere for discussion and learning.'*

Balance of theory and practice

Studio is not just about the 'practical and hands on' methods of teaching and learning. PBL requires an understanding of both theory and practice. This is supported by a student who comment that: *'The practical side [of studio] really helped make sense of the theory side. Bringing the two parts together well.'* In studio students learn skills in analysis, reflection, creativity in addition to those skills required for professional practice. The studio is a learning environment that brings together all strands of knowledge and experiences. Knowledge from other academic courses, different theoretical perspectives, personal knowledge and experiences are all drawn upon in the act of PBL. To support this pedagogy a variety of teaching and learning approaches are necessary.

Multiple teaching and learning approaches

Studio teaching and learning combines traditional lecture, workshop and tutorial approaches. It involves short presentations, given by academics and members of the profession, and instructions on various issues, techniques and skills. Teaching and learning approaches frequently include informal critiques of student work, student presentations, debates, small group discussions and learning by doing. Regular feedback is a key to studio teaching and learning, it also encourages and supports students in their learning process and generally results in higher student satisfaction. These teaching and learning approaches require longer contact hours than the more traditional lecture and tutorial approaches. To facilitate studio teaching and learning studios are timetabled in blocks and repeated twice or three times a week. Significantly, studio teaching and learning approaches require a higher staff student ratio than the standard lecture model. The optimum studio staff student ratio is about 1 : 15, more generally however it is about 1:20. A major benefit of having a larger number of teaching staff in one studio is that opportunities for divergent ideas and teaching approaches can occur and in doing so cater for an increasingly divergent (social, cultural and academic ability) student body.

Project based assignments

Another characteristic of studio teaching and learning is the type of assignments that are set. Assignments are project based, being tied into PBL pedagogies, and are usually in the

form of folios, log books or journals, posters, presentations and the preparation of professional documents; rather than exams, academic essays and tutorial exercises. Importantly, assignments are usually designed to be cumulative and progressive and capable of being undertaken in the studio with the supervision/support of staff and peers. These types of assignment are frequently problematic to assess because they are qualitative and subjective rather than being quantitative and objective. To address this problem, feedback is given to students, in studio, while they are undertaking the assignment. In some instances this feedback forms part of the assessment process. As with the previous characteristics of studio outline above, the type of assignments and the assessment of them requires students to attend and participate in the studio.

The physical learning environment

Because attendance and participation in studio teaching and learning is essential, the physical environment is important. Ideally the studio is a space in which students can create a 'place' where they can 'dwell', a place that students can identify with and make their own. It is important that the physical space of the studio accommodates flexibility, where desks can be re-arranged and the room layout can be reconfigured. For this to happen a dedicated space is desirable, however we acknowledge that this is not always possible given large student numbers and lack of facilities and funding in most universities around Australia.

In short planning studio uses problem based learning pedagogies, emphasizes active independent learning, provides a balance of theory and practice, uses of multiple teaching and learning approaches, sets project based assignments and utilizes a suitable physical learning environment with the aim to equip students with the skills, knowledge and practices that underpin their academic and professional careers. Importantly first year planning studio must be fun and challenging if students are to commit to completing their degree and thereby reduce attrition. These two points are supported by student comments: *'Studio has taught me invaluable skills that will be essential components of my career'* and *'Studio has played an essential role in stimulating my learning experience. This interactive course was quite fun, exciting, not to mention different.'*

Who are the first year 'planning students'?

Nancy Marshall and Christine Steinmetz (2008) argue that academics need to understand the learners themselves in order to know how to engage them. This includes understanding the likes and dislikes of the student cohort, understanding the lifestyle choices that they make and importantly understanding their aspirations and limitations. There is a plethora of literature on the Gen Y cohorts (17-32 year olds, born between 1976-1991) that gives some generalised indication of the character of many current planning students (Krause 2006, Williams, White & Tutty 2006). Gen Y students in Australia have grown up in a relatively stable and affluent world. Many are still living with parents and for most single parent families and same sex couples are considered a norm. Gen Y students purportedly respond best to instant gratification, are hard working and prone to depression and stress. Most of these students also have a consumer outlook to getting a degree and they expect choice and diversity in the offering of that degree. Significantly, most Gen Y students are in paid employment for the duration of their studies and they are strategic about how they spend their time in balancing work, study and social life. Given that Gen Y constitutes the majority of current and potential university students, many universities have taken steps to

address the needs and peculiarities of this cohort.

First year experience and studio teaching

The first year experience of a university student is significant, it can make or break a student and it sets the tenure for the remainder of their academic career, and indeed their career path (Upcraft, Gardner, Barefoot and Associates 2005). Annah Healy (nd p.5) writes:

The first year of university study is arguably the most crucial time for engaging students in their learning communities and equipping them with the requisite skills, not only to persist, but to be successful and independent in their new learning throughout their undergraduate years and for a lifetime of professional practice

Most Australian universities gage the quality of education they provide through a combination of performance indicators that measure student engagement, student attrition and the outcomes of student evaluations. As part of ensuring a high quality product that is competitive within the higher education market, many universities have established First Year Experience programs, policies and guidelines (see Zimitat 2006; Office of Teaching Quality, QUT 2009). In one such guideline Sally Kift (in Healy, nd, p.3) suggests that 'The focus of our student' First year Experience (FYE) should be their facilitated engagement with interesting and challenging new learning environments and communities.' This resonates with the need to address the characteristics of Gen Y.

The challenge in achieving Kift's vision is the need to know who the students are. Most planners are very aware of the complexities around engagement: one size does not fit all. What is critical in the case of this study is that engagement is crucial to studio teaching and learning. By engaging students in studio work, there will be flow on effects that address the First Year Experience criteria. The first year planning studio becomes a space/place of transition into academia and the planning profession. The studio project aims at capturing and stimulating the enthusiasm of many first year students and channelling this energy into positive learning and teaching outcomes.

Krause (2006) argues that for many Gen Y students 'the transition to university can be a significant battle in that it may constitute a conflict of values, a challenge to one's identity and a threat to familiar ways of knowing and doing.' The features that define a planning studio that we outlined above (project and problem based learning, emphasis on active independent learning, a balance of theory and practice, use of multiple teaching and learning approaches, project based assignments and the physical learning environment) offer a safe place for this 'battle' to take place. Studio teaching and learning involves learning together which develops collegiality and resilience within the student body. This type of learning also potentially reduces student attrition (Tinto 2003; Cross1998). Vincent Tinto (2002 p3) writes that 'learning is a condition of retention. The more students learn, the more value they find in their learning, the more likely they are to stay and graduate.'

Studio and first year planning programs in Australia

Based upon the PIA accreditation listing (accessed on 24.02.2010) we identified 17 undergraduate planning programs currently being offered in universities around Australia. From a web search of these 17 programs we noted nine programs that possibly included a studio in the first year. Of these nine only four programs specifically identify the first year course as a 'studio' and were, as far as we could ascertain from the web based material, in keeping with our definition of what a planning studio is. The four identified studio courses all related to design and or project related learning. Of the remaining five programs, one course outline suggested that the 'lecture' and 'tutorials' were similar to our definition of a 'studio', however the word 'studio' was not used. The other three programs were difficult to determine due to lack of web based information. Further research is required to gain a better understanding of how studios are practiced, if at all, in different planning programs around Australia. It seems however that the studio is not a common teaching and learning environment in the majority of undergraduate planning programs in Australia. This is of significant concern as the studio environment is a valuable teaching and learning asset; and in particular in relation to the benefits to the First Year Experience and outcomes for the University as a whole.

Case study: GU GC intensive mode studio

So far we have demonstrated the importance of the first year studio in the undergraduate planning degree as an integral component of the First Year Experience and as an essential element in stemming student attrition. As student numbers increase and academic institutions place pressure on staff to achieve more with less and to improve student retention and heighten the first year experience, appropriate and effective pedagogies become critical. The remainder of this paper draws upon the changes made to the first year planning studio at Griffith University's Gold Coast campus specifically in relation to the first year experience and as a means to address the institutional call for excellence in teaching and learning.

Data for our case study is drawn from anonymous student surveys and evaluations of the first year planning studio between 2006 and 2009. All the surveys and evaluations were undertaken as part of the University's policy on course evaluation and half of the survey sample followed a university wide standard procedure: in-class, paper surveys comprising 10 standard questions relating to course structure and delivery, with provision for limited written comments. These surveys were administered in the final week of semester (week 13) by non-teaching staff and processed through the University's central systems. The other half of the data used in this case study is drawn from an in-class anonymous paper survey handed out to students in week seven (the middle) of the semester. This survey was drawn up, administered and processed by the studio convenor with the stated aim of gaining feedback specifically on the studio teaching and learning environment, what students had enjoyed most and what their biggest challenge had been to date. The response rates to both sets of survey data averaged at 70% of enrolled students in the four year period 2006-09 (n80).

In 2009 the first year studio convenor reconfigured the studio course structure from three, two hour studios per week (ie 6 hours/week) to a combination of intensive and standard modes of studio teaching. This comprised an intensive three day charrette at the beginning

of the semester, followed by a number of drop-in studios up to week seven. From week eight to 13 students reverted to a standard mode (ie 3x 2hrs/week) of studio teaching and learning.

The reasons for this change are many. In addition to addressing the importance of the First Year Experience, the university is demanding efficient and effective teaching and learning on limited and constitutently reducing budgets. This is heightened by the continual increase of student numbers (from 15 studio enrolments in 2006 to 40 enrolments in 2009 and 100 in 2010). The increase in student numbers places increasing pressure on facilities, and especially the studio spaces. The university is also placing greater emphasis on teaching staff to be research active and to take responsibility for student retention. These concerns are university wide and they have very direct consequences on the teaching of planning studios and the outcomes of student evaluations.

In addition to the university's demands there are pedagogical reasons for changing the first year planning studio format. Student evaluations consistently commented on the need for an increase in the staff student ratio. Students also commented on the difficulties of time management specifically given the demands for studio attendance and the completion of assessment. Many students indicated that they worked eight to 16 hours a week in paid employment and increasingly more students travel over two hours to get to the university campus. Students also consistently commented on the need for more explicit and meaningful explanations about design and in particular the assessment components. There was not adequate time in the two hour studio to cover the necessary material and students may or may not attend the other studios timetable in the same week. Many that did attend the remainder of the weekly studios needed to be reminded of the material covered in the earlier studio. This inevitable was time consuming and sometimes resulted in conflicting information being given to students. Students also felt stressed by the assignments because they did not attend all studios and again the two hour time slot was in sufficient to gain much feedback and progress on their assignment task.

In response to the issues raised above and as a trial, in 2009 the first year planning studio in the Urban and Environmental Planning program on the Gold Coast campus, Griffith University was re structured with very positive outcomes. The intensive three day mode followed a charrette format that incorporated the key First Year Experience curriculum criteria. Following Krause (2006 p.7) these include:

- 1 the studio as a place where students feel that they belong and are known to staff and peers
- 2 feedback and assessment begins early and continues over the studio semester
- 3 studio learning is active and experimental
- 4 students learn from peers by working in the studio and working in groups.

A charrette, as used in this paper, is defined as an intensive design problem based teaching and learning environment. Our definition draws upon the charrette, or design by enquiry workshop, that is familiar to many urban planners. The structure of the charrette is informal and combines a variety of teaching and learning approaches: formal presentations, discussions, debates, quizzes, role playing, one-on-one support, group work and individual work. Planning charrettes are usually project specific and focus on a particular problem. Break-out groups form to tackle different issues related to 'the problem'. The outcomes of each break-out group are then presented to the group as a whole for discussion and debate. The final outcome is frequently a professional document that proposes solutions to the

problem presented. Following this charrette model, the intensive three day studio focused on the assignment as the 'problem'. Each of the three days were focused on a different assignment task, with students starting (and in some cases completing) the assignment exercise on the day. The three assignments were design problem based, cumulative and progressive. Each day students were introduced to the new assignment and provided with the theoretically and practical knowledge and skills to complete the assigned task. Students had to produce individual work, working within a break-out group under the supervision of a studio mentor and or staff member. At the end of each day students were asked to show and explain their output to their peers in neighbouring break-out groups.

A number of planning students from different years were engaged as studio mentors to work with first year students; to assist them in their learning, to foster engagement and encourage innovation; scaffolding that is necessary for achieving the studio learning outcomes state at course outline. In summary these were to equip students with the skill and knowledge to:

- 1 Identify, read and interpret a range of information on different types of maps and architectural drawings;
- 2 Prepare maps, plans and written planning reports;
- 3 Identify and critically discuss planning and urban design issues;
- 4 Identify and use various sources of data to elicit information and analyse planning issues;
- 5 Undertake site analysis using skills and techniques taught in class;
- 6 Work and learn independently and in teams to identify and solve problems, to generate ideas and synthesis a range of information.

Students' output was notionally graded at the end of each day by the studio mentors and staff. Mentors and staff also took notes during critiques and discussions with students to monitor student engagement and progress. At the end of the three days students were well versed in the assignment criteria and had the knowledge and skills to execute the required exercises. The final submission was in the form of a professional portfolio for which the students had five weeks to complete and compile. During these five weeks three two hour drop-in studios were held to answer questions, and give help and support as needed. Attendance at these sessions was monitored and over 80% students attended each drop-in studio.

Student attendance during the three day charrette was also monitored and the results showed that there was a 100% attendance over the three days (n40). This was partly the result of a high degree of student engagement and demonstrated teaching and learning relevance to the planning profession. In addition, student and staff expectations were discussed and reiterated over the three days which kept students focused, challenged and engaged.

Partly because of the excellent attendance at the three day charrette, the in-class survey administered by the studio convenor produced a 100% response rate. In summary the in-class survey showed that 80% of the class experienced the learning environment as 'good'. Over half the respondents (n25-30) indicated that the studio had been challenging, fun and balanced theory with practice. Students expressed that they had experienced a sense of ownership of the studio over the three days and that they had developed friendships and networks that supported them in their learning. Student comments about what they enjoyed most about the studio include:

- *Challenging exercises with new ideas and concepts*
- *Learning the basic theory ... then beginning to implement that.*
- *coming back to uni after 5 years was a bit scary but this was the best way to start Uni again! Very interesting and fun*
- *I got interested!*
- *How to compile ideas onto a page and understand the many key aspects and rules of planning then putting them into practice*
- *The arch of Planning extends much further than originally given credit for. Had previously learnt many of the concepts but their link to planning was new to me.*

Concluding comments

Most Australian university structures are changing, and when the Bradley report is acted upon next year and student numbers are no longer capped, these changes will be felt by most academics and in particular those that teach first year courses. Dealing with larger and more diverse classes with fewer resources will be an ongoing challenge for academics and students alike. Under these circumstances the quality of planning education becomes a contested realm. Without comprising quality teaching and learning outcomes planning courses such as studios, which are resource intensive in terms of space, time and staff student ratios, need to be reconfigured.

The restructuring of the first year planning studio on the Gold Coast campus seems to have answered the call for more effective and efficient teaching and learning pedagogies while also addressing the critical First Year Experience agenda. Using the charrette model the studio environment brings together the theory and practice of planning in a collaborative and student centred teaching and learning environment. The curriculum and pedagogy of planning studio becomes more than just preparing students for practice, instead it focuses on 'diverse communities of practice' (Prior and Harfield 2008) and critical engagement with planning (Gurran, Norman and Gleeson 2008). Prior and Harfield (2008) argue that the purposes of a pedagogy of critical engagement is that it seeks to 'impose discipline on both the future 'practitioner' and on planning itself ... and [to ensure] that planning education ... [remains] proactive' The planning studio ensures that planning education remains 'proactive' through project and problem based learning pedagogies, emphasis on active independent learning, providing a balance of theory and practice, the use of multiple teaching and learning approaches, the setting of project based assignments and the provision of a suitable physical learning environment. The first year planning studio is therefore a critical component of the undergraduate planning program and deserves to be recognised as such.

We give the final recommendation on studio teaching and learning to the students to relate:

- *Studio has given me a greater reality and passion for the real-life activities of a planner. Over the first year I was not convinced that a planner was what I wanted to be, but this course has re-defined and re-enlightened a passion that was dormant for a while now.*
- *[Studio] has challenged my abilities in every way and forced me to think outside the box. ... I am more conscious of the world, and my place in it ...*

References

- Cross, Patricia (1998) 'Why learning communities? Why now?', *About Campus*, July/August 4-8.
- Goodnough, Karen (2006) 'Enhancing Pedagogical Content Knowledge through Self-Study: An Exploration of Problem-Based Learning', *Teaching in Higher Education*, 11(3): 301-18.
- Gore, N. 2004. Craft and Innovation: serious play and the direct experience of the real. *Journal of Architectural Education*, 57: 39-44.
- Green, Lance and Bonollo, Elivio (2003) 'Studio-Based Teaching: History and Advantages in the Teaching of Design', *World Transactions on Engineering and Technology Education*, 2(2): 269-72.
- Gurran, Nicole and Norman, Barbara and Gleeson, Brendan (2008) 'Planning Education Discussion Paper', Sydney: Planning Institute of Australia.
- Healy, Annah (nd) 'Supporting Students in the First Year experience: A guide for academics in the faculty of Education', Queensland University of Technology.
- Jamieson, P. 2003. Designing more effective on-campus teaching and learning spaces: a role for academic developers. *International Journal for Academic Development*, 8(1/2): 119-133.
- Kift, Sally in Healy, Annah (nd) 'Supporting Students in the First Year experience: A guide for academics in the faculty of Education', Queensland University of Technology.
- Kotval, Zenia (2003) 'Teaching Experiential Learning in the Urban and Planning Curriculum', *Journal of Geography in Higher Education*, 27(3): 297-308.
- Krause, Kerri-Lee (2006) 'On being Strategic About the first year', Queensland University of Technology First Year Forum, 5 October, Keynote Paper.
- Loss, R. & D. Thornton. 1997. Students Model Professionals in Information Technology Rich Working Environments, *Australian Society for Computers in Learning in Tertiary Education (ASCILITE) Conference 1997*, Curtin University of Technology.
- Marshall, Nancy and Steinmetz, Christine (2008) 'Y Planning Education', *Proceedings from the ANZAPS Conference "Planning Education in a Globalised World"*, University of Sydney, 26-28 September, 189-94.
- Office of Teaching Quality, QUT (2009) Protocols: First Year Experience.
- Oschner, J. K. 2000. Behind the mask: A psychoanalysis perspective on interaction in the design studio. *Journal of Architectural Education* 53(4): 194-208.
- Pawson, Eric, Fournier, Eric, Haigh, Martin, Muniz, Osvaldo, Trafford, Julie, Vajoczki, Susan (2006) 'Problem-based learning in Geography: Towards a critical assessment of its purposes, benefits and risks', *Journal of Geography in Higher Education* 30(1): 103-116.
- PIA website : http://www.planning.org.au/index.php?option=com_content&task=view&id=132&Itemid=115
- Prior, Jason and Harfield, Steve (2008) 'A Vexed Terrain: Exploring Assumptions and Preconceptions around Planning Education in Universities', *Proceedings from the ANZAPS Conference "Planning Education in a Globalised World"*, University of Sydney, 26-28 September, 35-45.
- Tinto, Vincent (2002) 'Establishing conditions for student success'. Paper presented at the 11th annual conference of the European Access Network, Monash University, Prato, Italy.
Available: <http://aiea.syr.edu/vtinto/Files/European%20Access%20Network%202002%20Keynote.pdf>
- Tinto, Vincent (2003) 'Learning better together: The impact of learning communities on student success', *Higher Education Monograph Series*, Higher Education Program, School of Education, Syracuse University.
- Tucker, R. & J. Rollo. 2005. Fair assessment and blended learning in collaborative group

- design projects. *Proceedings of the Blended Learning in Science Teaching and Learning Conference*, University of Sydney September 30, 2005.
- Upcraft, M. L., Gardner, J., Barefoot, B., & Associates, (2005) *Challenging & Supporting The FirstYear Student*. San Francisco: Jossey-Bass.
- Williams, Greg and White Barbara and Tutty, Jodi (2006) 'Mainstreaming tablet classrooms: Engaging first year learners'. *Proceedings from the 9th Pacific Rim First year in Higher Education Conference*, 12-14 July, Griffith University Gold Coast campus.
- Zimitat, Craig (2006) 'Improving quality of teaching is part of improving retention: A study of first year students in an Australian university.' *Proceedings from the 9th Pacific Rim First year in Higher Education Conference*, 12-14 July, Griffith University Gold Coast campus.