

## Marginal Voices: Capitalising on Difference in the Design Studio

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Attention has been drawn to the detrimental consequences of the ‘power asymmetries’ (Dutton, 1991) that remain commonplace within design studio. Yet, despite a growing interest in the development of pedagogies that seek to erode this phenomenon, thereby creating the basis for true dialogue, it is argued that the student voice still often remains peripheral.

Within architecture education the tutor-student dynamic is critical not only to knowledge construction, but to the process by which the tastes, culture, and ethical and value systems adopted by the profession are imparted; these fundamentally determining the language and behaviour of studio, as well as the criteria for assessment of student work. Through processes of professional acculturation the student is typically uncritically socialised into the status quo (Yanar, 2007). Equally, effective knowledge construction resides in the development of a culture or code that orders the nature and language of communication and tutor-student interaction, and which engenders a realisation that theory and knowledge are things that develop through the work and the dialogue surrounding them. Thus the early stages in the learning process require careful consideration in order to establish the template for future interaction and learning, and to imbue a strong sense of student motivation.

Within this context, what are the strategies that overtly respect difference? How might educational processes in design studio give greater voice to the individual on the periphery? This paper presents an experiment in which peer learning was used as a central tool for reducing the influence of power and enabling disparate perspectives to contribute meaningfully to the learning process, and the individual’s relationship to it.

"Diversity is not about how we differ. Diversity is about embracing one another's uniqueness."

Ola Joseph

## Introduction

This paper arises from a continued interest in, and consideration of, the relationship between teaching practice in design studio and related educational theory. It is argued that consideration of pedagogical theory, applied to the specific context of architecture education, is valuable in informing developmental change aimed at engaging and embracing the student as an individual learner. Equally, it is deemed central to achieving coherence and rigour in the development of pedagogic strategies. More specifically, the paper is concerned with the development of inclusive approaches to studio teaching that derive benefit from the full breadth of experience and viewpoint represented within a cohort<sup>1</sup>. It presents a learning model explored with the first year students at the Scott Sutherland School of Architecture & Built Environment in Aberdeen, which had the aim of creating an inclusive learning environment that engages and harnesses the diversity of the cohort as a constructive basis for learning. In this context the terms 'periphery' or 'margins' refer to the positioning of the individual rather than the nature of their view. Indeed it is recognised that peripheral views have real value within debate and ought to be included. However, whether or not this is achieved is contingent on student and tutor approaches, and the potential exists for the possession of a peripheral view to marginalise and exclude the individual.

<sup>1</sup> The paper consciously avoids project description, but instead focuses on the underlying pedagogic structure and governing principles. For information, Appendix A illustrates the teaching plan for the first semester of Session 2010-11, including indication of the thematic nature of projects.

## Theoretical Context

### *The Studio as a Setting for Social Learning*

It is clearly the case that many consider that studio culture, its behaviours, values, and norms, represents one of the most enduring qualities of architecture education, and one of the most memorable. Studio is the place that allows students to develop a social culture, and where students become progressively acculturated into professional beliefs and value systems. In this respect, studio is instrumental in the definition of the culture of a school, this having been identified as being as important to student learning as the specific curriculum offered (Nicol and Pilling, 2000). Yet despite the many positive dimensions of design studio, the common existence of negative factors, such as the 'power asymmetries' and dependencies first documented by Dutton (1991) is clearly recognised in the literature. Indeed, a number of studies have noted that, despite the intention of a creative, exploratory learning process centred on the individual, studio-based learning in reality constitutes a teacher-centred

experience (Dutton, 1991; Yanar, 2007). Equally, research has identified the lack of accommodation of the individual, despite the processes involved in design studio purporting to develop individual creativity and expression within the context of architectural design (Webster, 2004). At a time when much emphasis is being placed on the individual in learning, and the constructivist notion of the learner building personal knowledge incorporating lived experience, cultural background, and so on (i.e. the antithesis of the 'empty vessel'), the question arises as to how the social dynamic and properties of studio may be harnessed to give voice to the individual through the democratisation of the learning process. In the course of reviewing and re-developing the first year learning experience at the Scott Sutherland School of Architecture & Built Environment, this question proved a central concern, and this paper presents the resultant learning strategy and structure. Accordingly, this process of pedagogic development had the dual purpose of transposing the individual voice from the margins to the centre of the learning process.

#### *Learning within Social Settings*

It is argued that the most significant attribute of design studio is the culture that it develops between students, as well as staff and students. Both the social dimensions of studio, and the opportunities for collaboration and sharing, act as stimulants to learning (Parnell, 2001). Indeed, it is ultimately not so much the project work that acquires lasting significance, but the culture that the learning environment propagates (Koch et al, 2002). Anthony Roberts (2003) goes further, arguing that studio represents an ethos that extends beyond the physical bounds of space, and that develops primarily from a collective will of people to work together. The ensuing dialogue produces creative debates, even conflicts, and it is this frisson that is the defining quality of studio working, one that positions it clearly at the heart of the educational process. Moreover, the contribution of studio culture out-with the formal curriculum has been referred to as the 'hidden curriculum' (Dutton, 1991), and it would appear that these aspects are as significant to student learning as the course itself.

Typically studio culture generates close bonds between individuals and a strong sense of community, this being advantageous to the learning experience as well as in future social and professional lives. These bonds can be very powerful and frequently endure over the course of a lifetime. Thomas Fisher describes this in terms of a 'fraternity' culture (Fisher, 2000). Indeed the process of learning through socialisation is a powerful component within the 'hothouse' environment of studio. It is acknowledged that one of the strongest mechanisms for supporting the diversity of learners within a cohort is the cultivation of a community that builds a strong interrelationship between the learning process and social activity. The role of 'cognitive conflict' propagated by multiple

perspectives, was noted by Piaget (1972), who also observed that this is achieved most effectively through a culture of co-operation. Moreover, the work of Vincent Tinto (1993) has highlighted the importance of the social and academic integration of students if they are to become and remain engaged in the education process. Yet, as revealed by Stevens (1998), architecture education does not historically demonstrate great social diversity amongst its numbers. At a time when there is considerable political impetus to widen access and broaden the social profile of university students, it is argued that the case for inclusive learning processes has never been stronger.

Through consideration of the writings of socio-cultural theorists such as Leo Vygotsky, Shaffer (2003) has observed how learning takes place through the internalisation of social processes of evaluation, and contends that therefore 'the norms of the community become a framework for individual thinking and individual identity'. A dichotomy clearly exists between the innate social potential of studio, and the apparent general lack of the strategic structured adoption of peer learning techniques in the learning process. Despite the strengths of design studio in fostering socialisation, consideration of peer learning as a core building block of formal learning strategies remains rare. It may be argued that forms of professional education that require to demonstrate competence at an individual level mitigate against this, but there needs to be a clear distinction drawn between the learning as a process, and the formal outputs of that process.

The work of Flavell (1985) and Stahl (1992) on the cognitive and metacognitive processes of knowledge construction dismisses the seemingly common assumption that knowledge can be effectively transmitted from, say, tutor to student. Instead, the learning of the recipient is contingent on the individual's 'schema', including the contextual knowledge and understanding that they have, against which new information is aligned creating either a 'fit' in which case knowledge is deepened, or leading to previous knowledge being revised. The work on metacognition undertaken by Weinstein and Rogers (1985) is relevant here, especially their observation that active learning strategies assume particular importance where learning involves the mastery of a task. The reflective functions within metacognitive strategies enable the student to review their own understanding of a situation of problem, and define actions that allow knowledge to be appropriately constructed or reconstructed. As a helpful illustration, Flavell (1985) uses the analogy of progressive archaeological discovery leading to the revision of histories over time. It follows, therefore, that the broadening of contextual perspective through the views and experiences of others represents a valuable agent in the construction of individual knowledge, particularly where the subject has an innate indeterminacy and integrates many fields. It may thus be argued that the aspiration of developing independence in

the individual learner is most effectively realised through the structured use of peer learning techniques and a degree of formalised social interaction. Within this context, what might a strategy be that overtly respects difference? How might the educational process give greater voice to the individual, and how might a peripheral voice be more clearly heard?

### *Underpinning Principles*

<sup>2</sup> Appendix A illustrates the teaching plan for the first Semester of Session 2010-11

The Scott Sutherland School in Aberdeen has begun to explore a new pedagogic framework for first year<sup>2</sup> that seeks to address the issues introduced, and which adds greater clarity for staff and students regarding the intention, purpose and objective of the learning process and its constituent parts (e.g. studio projects). Additionally, the school has recognised the need for a more explicitly inclusive process that promotes dialogue and breadth of perspective, and reaffirms the pedagogic value of studio. At the core of the strategy lies reciprocal peer learning within the first year cohort, which encourages exchange between students of equivalent level, albeit with varied backgrounds, experiences and perspectives, which the learning process seeks to capture and build on. Of the ten different models of peer learning identified by Griffiths, Houston, and Lazenbatt (1996), the 'proctor' and 'learning cell' models were adopted as core components of the pedagogic strategy. Of particular interest was the notion of the learning cell, incorporating the formal use of structured interaction and peer group dynamics.

The developmental process began with the identification of four guiding principles drawn from the literature, as follows:

1. Recognition of each student as an experienced user and observer of the built environment, accepting that their architectural sensibilities that had yet to be developed and shaped. Students were encouraged to reflect on their experiences and observations through an architectural lens.
2. Commitment to developing ways in which the multiple perspectives and experiences of students could be shared and built on.
3. Rendering the learning process explicit, and the development of greater understanding of the process in the mind of the student.
4. Identification of ways in which the negative aspects of the power relationship between tutor and student could be minimised.

### *The Learning Strategy*

Using the above principles as a framework, further consideration of the learning process in relation to the underpinning theory led to the identification of three key 'strands' that structure the learning strategy. These three strands quickly became interwoven as the learning strategy was defined, creating a learning experience stronger than the sum of its parts. The learning plan attempted to create a blend of skills, tasks and

exercises that expressed a distinct and engaging learning process whilst developing new knowledge and skills readily understood to relate to architecture. These key developmental strands were as follows, each of which are subsequently described in detail:

- Architectural skills
- The Critical Self
- Professional persona

#### *Architectural Skills*

Aimed at developing core architectural skills, a series of tasks were run in parallel with other studio-based work throughout the session. In doing so, skills<sup>3</sup> were individually acquired within the group setting that could be immediately and progressively applied to other ongoing work. Moreover, the parallel nature of their workload introduced the student to issues of time management and prioritisation, this being considered essential to enabling the student to perform optimally. Early diagnostic exercises enabled the level of input and scope of the tasks to be reviewed to ensure that the entire cohort had the opportunity to achieve a threshold level over the duration of the session. These also allowed peer learning groups to be effectively structured to enable individuals to benefit from the collective range of personalities and aptitudes.

#### *The Critical Self*

The role of reflection in and on the design process has been documented extensively (inter alia Schon, 1983). Nevertheless, despite the fundamental role of reflection in studio-based learning, Nicol and Pilling (2000) noted that courses are very seldom designed around the act of reflection. Indeed, it would appear that typically little time is provided specifically to reflect on progress, and hence to make the reflective process explicit.

In reviewing the learning process, the incorporation of specific reflective functions was deemed crucial to developing critical awareness of personal progress relative to the overall learning process and, importantly, relative to peers. There is evidence to suggest that in the intensity of design studio, students can lose sight of the overall learning path, concentrating instead on the immediate task (McClean, 2009). However, it is argued that there is advantage in the student developing an understanding of the progressive development of projects, in order to develop a clearer mental map of their own learning as they progress.

Within the reflective process, students intuitively seek to position their progress and development in relation to others, and the conventional currency for doing so is grades. This is the culture that they are generally familiar with, bringing a level of expectation of, and reliance on, finite marking systems. Instead, as a means of weaning students from such

<sup>3</sup> Core skills included those relating to spatial awareness and composition, communication, research skills, critical writing, and conceptual thinking.

systems, greater emphasis was placed on feedback as a means of orienting the student with respect to performance from a more qualitative standpoint. A consequence of secondary schooling, with its focus on achievement, is that students can be conditioned to expect success, and that some will find subsequent weak performance alien, demotivating, and hard to accept. In transforming attitudes to learning through the process, a central objective was thus to convey that learning from mistakes is not only acceptable, but within the context of a reflective process, can produce a powerful learning experience. Through an explicit, purely formative process of reflection and dialogue, students were encouraged to confront and understand weaknesses, and this yielded positive patterns of students seeking to self-improve through a process of iteration. Where this occurred, it was a clear indication of students taking charge of their personal learning.

The critical self embodies the aforementioned ability to establish, argue, and justify a personal position or stance. Indeed, early realisation of this on the part of the student was deemed instrumental in enabling the rationalisation of varying, sometimes conflicting staff opinion, and the acceptance of the indeterminacy of the subject. Of course, recalling Dutton's concept of 'power asymmetries' the management of the tutor-student dynamic was crucial to facilitating the development of individual positions, coupled with the ability to debate their legitimacy. Minimising the effects of power proved to demand careful reconsideration of the tutor role, this representing a fourth 'hidden strand'. The over-riding change that was introduced involved increasing the capacity of the tutor to listen, permitting the student(s) to openly express themselves, and enabling the staff to view both what is, and what is not, taking place. Attempts were made to invert the traditional tendency for the tutor to quickly dominate a conversation, thereby subverting and subordinating the view of the student. Students were routinely required to present their ideas and opinions, or respond to specific questions and issues, but in an effort to avoid over-familiarity and the establishment of predictable patterns of discourse, the format of the discussion was frequently changed. For example, whilst the group leaders<sup>4</sup> were typically oriented to leading the discussion, they were asked to take on a purely listening role within specific conversations. This democratised the dialogue, opening the door to less confident students who sometimes had strong ideas but were frequently denied a platform due to the strength of their peer(s). The technique also served a diagnostic role giving staff a much stronger sense of the individuals within the cohort.

### *The Professional Persona*

Design studio typically acts as the place where socialisation and professional assimilation begins to be developed, or as Dana Cuff (1991) elegantly expresses it, the place where 'the ethos of the profession' is

<sup>4</sup> Group leaders were appointed at various points in the academic session through a combination of volunteering and nomination

born. Accordingly, the developed learning process sought to disabuse the notion of architecture as individual endeavour, and instead instil an understanding of it as a fundamentally collaborative practice.

In previous years it had been observed that initial student understanding of the nature and role of the profession was often preconceived and narrow, and sometimes misguided. Moreover, a reluctance to discuss preconceptions and assumptions of the profession had been observed amongst students, for fear of appearing ill-informed or naïve. It was thus considered important to openly discuss the role of the architect, and the profession's evolving position within broader industry and societal contexts. Discussions were held with the students about challenges currently facing the profession, from issues of energy and resources to economics and professional unemployment. In this way the complexity of the professional world was confronted, beginning processes that lead to the individual developing thoughts about their own professional lives.

The defining nature of professions is that of a social grouping bound together by its specific knowledge and expertise, accepting that this is itself an evolving entity (Duffy, 1998). With the aim of establishing a professional ethos, the group functioned within a set of standards, codes, and principles of practice that conferred a degree of operational cohesion and unity. Whilst the ultimate objective was to develop the capacity in the student to independently engage in learning as an intrinsic component of their professional lives, the initial step on commencement of studies required that the student was appropriately oriented and supported. The impact of transition from secondary to tertiary education is significant, this necessitating that the pedagogy embraced and managed this change through an explicit articulation of difference.

In order to encourage sharing and co-operation, learning purposefully commenced in group format contextualised by discussion of the collaborative nature of contemporary practice. It was considered vital that the skills students already possessed, whether verbal, written or graphic were acknowledged and fostered to promote the levels of confidence that are central to deep learning and engagement (McClellan, 2009). The role of the tutor during this initial phase was crucial as, of necessity, cultivating student confidence and motivation took precedence over any defined or graded project output. The tutor was required to be vigilant and observant of inter-personal dynamics and of the characteristics of individuals, and operate flexibly to facilitate the accommodation of the full spectrum of diversity within the cohort. To be effective, this required to be done while avoiding the traditional 'observe and replicate' model defined by Bandura's Social Learning Theory (1977), which can discourage contributions from those on the margins of a group.

Students were encouraged to work in the studio spaces as much as possible and run the groups in a semi-professional environment, keeping notes of formal discussions with design tutors, and regulating group workload and attendance. Groups were constructed after an initial individual diagnostic project whereby the first group leaders were identified. One student was appointed group leader on a rotational basis, and empowered to moderate group discussion and take final decisions, playing the part of the lead designer in a quazi-professional environment.

In a typical week, studio teaching occurred over two structured, though contrasting, formal tutorial days. The first combined group working with formal input such as lectures and skills instruction, as well as feedback and 'feedforward' sessions. The second day involved a wider team of tutors and senior students and consisted of group working and presentations. These exercises were designed to bring to the student consciousness the fact that the skills, attributes and experiences that they brought had a relevance and value to the subject of architecture. This celebration of ability - from drawing, to poetry, to dance - served to reveal a panoplae of skills both at the level of the individual and the collective. Moreover, the myriad of varying personal perspectives introduced the issue of subjectivity, as well as the fundamental role of opinion and critique, and the importance of adopting and justifying positions within an indeterminate discipline.

Initial learning was designed to systematically challenge the notions of determinacy and singularity that appear to be commonly acquired during secondary education, and to allow students to understand that the position of the tutor does not necessarily represent a position they are expected to adopt. From the outset the expression of diverse opinion was encouraged and celebrated as being vital to discussion and the ongoing development not only of students, but also of the tutor team.

#### *The Geography of the Learning Space*

Any form of pedagogic experimentation is necessarily governed by the available resources with regards to space, equipment, and academic staff. Together with the goal of a democratic working space, these resources provided the parameters within which the learning strategy was designed. A learning environment was sought that encourages critical thinking and allows the display of continual student development, through provision of both working and display areas akin to those defined by Fisher (Jamieson et al, 2000).

The studio was structured with the cohort being divided into groups of three, and combined 'supergroups' of six, depending on the purpose and stage of the exercise (see Appendix B). Each core group of 3 became the fundamental learning unit around which the learning process was organised, with one student at any given time encouraged to assume the

role of 'group leader'. The spatial organisation of the studio space was crucial to fostering debate and the encouragement of discussion from the outset. The sharing of variable and diverse skills between peers allowed students with different aptitudes to contribute to a forum which in essence became a vehicle for social learning and, in doing so, easing the process of adjustment and acclimatisation intrinsic to the transition to tertiary education.

Running along one edge of the studio was an informal gallery, where each student and group had defined space in which to display, record and reflect (see Appendix B). Ideas were democratically presented, allowing development to become explicit, and aspirations to develop through comparison and implicit competition. The integration of this space within the wider traditional studio context allowed students to familiarise themselves with the culture of practice which encompasses the processes of communication, discourse and critique which lie at the core of architectural education.

## Evaluation of Initial Cycle

<sup>5</sup> Student responses were both anecdotal in the form of conversations in studio, and formal through the results of the University's annual Student Evaluation Questionnaire

Student responses received from the initial year<sup>5</sup> of operation indicate a positive response, these being borne out by the views of tutors (who had the ability to compare with prior regimes). Encouragingly, the views of the senior students involved in peer learning sessions were also strongly supportive of the process, with some reflecting that they would themselves have derived additional benefit from a similar process. In terms of outputs, the process can be seen to have delivered strong, consistent, results, this view being supported by professional peer review through the external examination system.

The desire for inclusivity was both political in the sense of striving to achieve a more democratic learning environment, and pedagogic in seeking to capitalise on the innate collective resource represented by a cohort. Whilst recognising that the nature of cohorts can differ markedly, the first cycle of the experiment generated a richer, more open dialogue between peers and with tutors. However, it was the levels of confidence exhibited by students in the second half of the year that signified the greatest change; confidence about individual abilities and potentials, the ability and willingness to openly discuss matters relating to architecture, and confidence in personal suitability to the subject of architecture.

### *The Tutor Role*

Vital to the success of the experiment, was a coherence of tutor approach, attitude, and action. Herein lay a number of challenges as architecture education suffers from deeply engrained beliefs, behaviours and

orthodoxies; in other words a context in which achieving change can prove difficult.

In order for the individual to have their views openly acknowledged, for liberation of discourse, and for the peer-based process to become established, the tutor role took on a form that effectively inverted that of the traditional academic leader, although of necessity aspects of leadership never disappear. The crux, however, was enabling a spirit of democracy and trust between students, and between students and staff. This demanded greater staff self-awareness in terms of the power relationship with the student, and careful consideration of how to manage this changing relationship at key points in the learning process. Additionally, greater emphasis on observation and listening imposed new challenges for staff, as did the ability to carefully manipulate group dynamic to ensure equity within groups.

Effective learning necessitates an engagement with new material and information leading to the individual taking ownership of it in ways that are personally meaningful. The tutor therefore becomes the facilitator of the learning process, helping 'bridge the gap between the structures of the discipline and the structures in the students' minds' (McKeachie, 1992). For this process to be effective, the clarity of objectives and processes is paramount, and required weekly briefing / discussion sessions, which also served as points where progress could be reviewed. Moreover, such sessions were vital to ensuring levels of mutual staff confidence in the light of changing practice, as well as consistency in teaching and observation.

One of the most important roles for the tutors was to maintain discreet observation of group performance until the group was ready for tutorial discussion. As the groups worked in the school's studio spaces, staff would observe initial group discussion and dynamics prior to a formal meeting. The agendas for discussions would be tabled by the groups in the first instance encouraging students to take the lead in the process. Tutors initially worked together to set standards for the studio and then individually to the defined agenda, encouraging all students to participate. A consistent and equitable level of contact was maintained for all groups, with tutors mixing the groups half way through the teaching program to discourage familiarity and to offer additional opportunity for students to become accustomed to varying inputs.

Finally, there were pitfalls in developing such an approach. Dillenbourg & Schneider (2009) recognised the fact that interdependent learning is more palatable to some students than others, and this was supported by experience. Equally, the avoidance of stereotype was important in the grouping of students, this highlighting the importance of the diagnostic exercises introduced at the outset. Both issues point to the further development of both process and skill in future iterations.

## Summary Conclusions

The work presented in this paper constitutes the initial steps in the development of a learning process that carefully utilises the peer-oriented social setting of studio in order to create an inclusive learning process that introduces a number of precepts that are fundamental to architecture education. Moreover, it argues that careful and inclusive utilisation of the peer group can enable disparate perspectives to contribute meaningfully and valuably to the learning process, and the individual's relationship to it.

Three 'strands' were employed as the structure for the learning strategy. The need to teach appropriate architectural skills in the formative years is well established. A particular strength in the initial iteration of the experiment was the incorporation of 'lived experience' into projects showing where this experience could be related to the study of architecture whilst simultaneously breaking down initial inhibitions and facilitating social interaction. The 'critical self' sought to strengthen individual awareness, seeking questioning and reflective capabilities, utilising both multi-media and formal reflective journal techniques. In most instances this was deemed successful, although some students were not able or willing to record the process and preferred open forum discussion and summative conclusions. The 'professional persona' allowed students to conceptualise learning in the context of the profession, and to develop a greater initial sense of the evolving professional context.

It became evident that vestiges of traditional tutor model remained, and it is clear that the transition to a new system of peer-based pedagogy will take several iterations to fully develop and hone. This is perhaps especially true with respect to the nature of first year students, whose introduction to studies coincides with developing individual identities, and the freedoms and challenges of university culture, new ways of working, and greater self-sufficiency in life.

In conclusion, the initial implementation of a learning process that consciously placed peer learning at its heart, derived positive results with respect to the objective of achieving inclusivity and associated benefits in relation to student confidence and engagement. Further iterations will permit refinement of the model, as well as a more thorough longitudinal evaluation of its strengths and weaknesses. However, of all the observations made, what is perhaps most interesting is that the nature of the projects (as vehicles for learning) did not significantly change from previous years. What did change was the level of deeper consideration of the educational structure and objectives that were played out through the projects. This brought a greater rigour and is beginning to provide opportunities that enable learning to fully benefit from the whole student group in ways that hitherto it had not.

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