

## **Architectural Education after Schön: Cracks, Blurs, Boundaries and Beyond**

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### **Abstract**

It is quite extraordinary that architectural education remained un-theorised until the 1970s when Donald Schön, following his studies of the design studio, put forward the notion that design studio learning simulated real professional action (1983, 1985, 1987). Schön subsequently presented architectural education as a paradigm for all professional education (1987). Schön identified a number of key elements in architectural education that together constituted his theories of 'reflective learning' and the 'reflective practitioner'. Central to Schön's understanding of learning to design were two concepts. Firstly, the necessity for students to engage in studio-based projects that simulated the complexities of real life projects. Secondly, the importance of reflection in the design process that was constituted of: reflection-in-action, reflection-on-action and most critically reflection-on-action that allowed students to observe and re-align their thinking with the 'expert' thinking of their tutors. Arguably, Schön's notions of reflective learning have framed most of the discussions about architectural education to date. This paper will argue, somewhat paradoxically, that Schön was a remarkably unreflective thinker. To evidence this claim the author will attempt to demonstrate a number of significant epistemological, ontological and methodological weaknesses in Schön's work. Further, the author offers a number of alternative theories of knowledge and learning that might begin to ameliorate some of Schön's weaknesses and thereby enrich the contemporary understanding of the relationship between architectural knowledge, practice and education.

**Keywords:** Reflection, Design Studio, Architectural Education, Reflective Practice

## We're All Reflective Practitioners Now

Arguably, over the last two decades or so, Donald Schön's pedagogic ideas have become the dominant 'theory of practice' for all professional and vocational education (i.e. learning 'for' disciplinary practice rather than learning 'about' a discipline or subject). Indeed, the notion of the reflective practitioner is now so ubiquitous that Barnett wrote, without irony, "We're all reflective practitioners now" (Barnett, 1992, p. 185). Yet, paradoxically, Schön produced notions of reflective practice at a time when there was a significant paradigm shift in the theoretical underpinnings of educational learning theory from 'behavioural' and 'cognitive psychology' to 'humanist' and 'situated' theories of learning. This paper will attempt to demonstrate a number of ways in which Schön's cognitive-based theories are severely limited by his inability to recognise their 'partial' or 'limited' nature. The aim is not so much to discredit Schön, but rather to point to the role that other theories of knowledge and learning might play in the development of an understanding of architectural learning and teaching.

Schön's generic theories on the nature of professional knowing and professional education are outlined in two key books: *The Reflective Practitioner* (1983) and *Educating the Reflective Practitioner* (1987). Schön begins both books with an attack on what he considered to be the technical rationality that informed most professional education (medicine, law, engineering etc.) at the time. According to Schön, this technical rationality resulted in a curriculum premised on the idea that students learnt a "body of theoretical knowledge..." and subsequently practice was "...the application of this knowledge in repeated and predictable ways to achieve defined ends" (Usher *et al.*, 1997, p. 126). Schön criticised this notion of education, firstly because it denied the complexities of the problems that professionals faced in the real world and secondly because it failed to account for how professionals actually worked in practice.

It seems somewhat fortuitous for the un-theorised field of architectural education that Schön used its core pedagogical tool, design studio learning, as a paradigm for all professional education. Curiously, architectural education, as neither art nor science, had historically occupied a rather maverick position in higher education and had largely escaped the clutches of the technical rationality that Schön talked of. Thus, in the 1980s, architectural education had a relatively homogeneous 'naturalised' form that originated in the 19<sup>th</sup> century when the articulated apprenticeship model (in which novices learnt to become architects through a mix of engaging in the work of an architectural office, observing and being coached by a master architect) was almost literally transferred into an educational setting. The dimensions of transfer might be summarised as follows:

- Pedagogic Space: the architectural office **became** the design studio.
- Pedagogic Tool: architectural design problems **became** simulated architectural design problems.
- Pedagogic Method: learning design artistry via coaching from the architect **became** learning design artistry via coaching from design tutors.

Schön asserted initially in *The Reflective Practitioner* (1983), again in the RIBA publication *The Design Studio: An Exploration of its Traditions and Potential* (1985) and yet again in the better known *Educating the Reflective Practitioner* (1987), that by reproducing the apprenticeship model, architectural education had successfully given precedence to professional 'relevance' over technical 'rigour' (1985, p. 15). In his bid to put forward architectural learning as a paradigm for all professional learning, Schön renamed design artistry as 'reflective practice', a more generic term that could be used to describe all professional practice. Thus, Schön defined 'reflective practice' as occurring when skilled practitioners responded tacitly to situations of uncertainty, instability, or uniqueness, through a combination of intuitive "knowing-in-action" (1987, p. 22), "reflection-in-action" (1987, p. 26) and "reflection-on-action" (1985, p. 74). Schön went on to expand the scope of his theorising to outline a new generic epistemology of professional practice (the reflective practicum), professional action (reflection 'in' and 'on' action) and professional being (the reflective practitioner). Over the last twenty years or so Schön's theories have gained increasing purchase in professional education (teaching, nursing, medicine, music, art, architecture, etc.) and have informed radical revisions to both curriculum and pedagogy.

One might claim that, in recent times, the field of architectural education has vicariously benefited from the fact that a previously un-theorised method of educating architects, design studio pedagogy, has become the dominant theoretical model for professional education. Yet, now that architectural education has been 'theorised' one might suggest that architectural pedagogues are in a privileged position, because of the long lineage of the studio learning model, to reflect on the real efficacy of Schön's theories. Recent research suggests that Schön's notions of learning through action and reflecting on action (particularly with expert others) have a clear resonance for architecture students and tutors (Webster, 2004a). This research also provides evidence that Schön's notion of reflection has been used by tutors to enhance student learning (Webster, 2004a, p. 343). However, it might be argued that, whilst it has been expedient for architectural educators to adopt Schön's theories and the lineage of reflective theories that have followed (Moon, 1999; Brockbank and McGill, 2007), they have done so without sufficient understanding of their theoretical limitations and methodological errors: their 'cracks', 'boundaries' and 'blurs'.

The central section of this paper brings together the literature on education with the author's experience of contemporary architectural education to make a critique of Schön's characterisation of architectural education and to suggest other theories that might enrich our understanding of architectural knowledge, architectural being and educating the architect.

## **Boundaries: Technologies of Learning**

Design tutors who are familiar with Schön's ideas tend to be sympathetic to the notion that the term 'reflection-in-action' accurately describes the way architecture students tacitly act when designing. They also recognise the notion of 'reflection-on-action' as a description of the way students develop their design process/projects through repeatedly considering the merits and de-merits of their previous actions before deciding how to move forward. Further,

Schön's elucidation of the critical role of 'reflection-on-action' with an expert 'coach' as a means of bringing students' intuitive aesthetic values into alignment with those of the architectural field, seems to have particular purchase with design tutors. However, it could be argued that Schön's singular focus on design studio learning results in an overly narrow description of architectural learning. Firstly, Schön fails to recognise that there are other cognitive, affective and corporeal dimensions to learning that take place both within the design studio and in other settings (the lecture theatre, the refectory, parties, etc.). Secondly, Schön fails to recognise that students experience architectural education as the sum of its explicit and hidden dimensions and it is this total experience that effects the development of students from novices to professional architects. If architectural education is more complex, both as a structure and as a discipline, than Schön suggests then there is a need to look elsewhere for an explanatory framework.

The writings of Michel Foucault do not explore higher education in any forensic detail. However, throughout his early 'archaeological' writings, and particularly in *Discipline and Punish*, Foucault repeatedly referred to educational institutions as sites *par excellence* for the creation of the modern (post-19<sup>th</sup> century) subject (1991, p. 170). Foucault's archaeological writings attempted to 'excavate', through detailed archival work, the particular ways in which the new 19<sup>th</sup> century disciplines (medicine, law, prisons, and education) exercised power to effect the transformation of individuals into alignment with specific disciplinary norms and values. Foucault's research identified a generic taxonomy of devices ('surveillance', 'normalisation' and 'examination'), what Foucault called "micro-technologies of power", through which the new disciplines exercised their disciplinary power (1991, pp. 170-194). Thus, Foucault suggested that schools, colleges and universities, as examples of the new 19<sup>th</sup> century institutions of power, employed disciplinary specific 'micro-technologies of power' to transform students from one state to another. Subsequently, several historians of education have explored the character of these micro-technologies in more detail. For instance, Jones and Williamson explored the spatialisation of power in classrooms (1979, p. 59) and Hoskin and Macve explored the examination as a means of objectively evaluating and categorising pupils according to ability (1986). By extension, it seems entirely plausible to conceive of contemporary architectural education as a set of 'micro-technologies of power' (regulations, exams, timetables, spatial organisations, pedagogic encounters, etc.) that effectively 'discipline' students into 'becoming' architects. An additional tenet of Foucault's argument was that 'micro-technologies of power' work to transform the whole person i.e. both the mind and the body (1991, p. 138). Thus, it follows that architectural education might be understood as a set of 'micro-technologies of power' that alter the cognitive, affective and corporeal dimensions of students towards disciplinary norms. There is clearly much research to be carried out to elucidate the specific 'micro-technologies of power' at work in architectural education and the ways in which they 'discipline' students. The suggestion in this paper is merely that Foucault's writing on the archaeology of disciplines might provide a new lens on architectural education that could help to ameliorate some of the deficiencies of Schön's narrow viewpoint.

## Boundaries: formal and informal learning

Schön's explication of reflective learning uses the architectural studio as an example of a venue *par excellence* for learning artistry through action and reflection, both alone and particularly with an expert coach (1983, 1987). In *The Design Studio: An Exploration of its Traditions and Potential* (1985) Schön illustrates what he means by reflective learning in some detail. For instance, several pages are dedicated to a description of a case study reflective tutorial in which Mr Quist, the expert coach/tutor, 'corrects' the student Petra's action through a process of joint reflection on Petra's designs (1985, pp. 32-52). Schön tells us that, through a process of listening, watching and imitating Mr Quist, Petra learns how to design. Whilst it might be true that many tutors operate like Mr Quist, albeit a rather transmissive model of teaching, and many students do learn in the way Schön suggests, albeit a rather strategic approach to learning, the main contention here is that Schön confines his notion of student learning to formal pedagogic encounters. Once again, Schön's research looks at architectural education through a very narrow lens, yet somehow he feels able to derive grand theories of learning from the results.

Most design tutors have taught students who believe that they can succeed merely by following their tutor's weekly instructions. This is often a frustrating experience for tutors because they know, and repeatedly tell students, that engaging with formal teaching in a strategic manner is not sufficient to ensure successful progression through architectural education. Indeed, a recent study that investigated students' approaches to learning revealed that poorly performing students tended to take a strategic approach to learning whilst high performing students understood architectural learning as a more diverse activity involving informal as well as formal learning (Webster, 2005 & 2007). This latter group of students described how they had thrown themselves into the world of architecture by, for instance, reading expansively, visiting cities, buildings and exhibitions, attending lectures, spending long hours in studio, and living in houses with other architectural students. In effect, it appears that students who take a deep approach to learning by fully engaging with the world of architecture appear to gain an understanding of the culture of the discipline, including the tricky notion of aesthetics, and thereby establish a kind of 'feeling for the game'.

The twin notions that all people learn all the time, not just in educational settings, and that learning is inescapably 'situated' in real settings were put forward in the 1990s by Jean Lave and Etienne Wenger. In their seminal book *Situated Learning: Legitimate Peripheral Participation* (1991) Lave and Wenger drew on ethnographic studies of craftsmen apprentices to outline the ways in which formal and informal learning work to allow, or disallow, novices to move from the periphery (unskilled/un-aculturated) to the centre of a community (skilled/acculturated). Etienne Wenger subsequently suggested that educational experiences could be designed to facilitate the acceptance of novices into a particular disciplinary community (Legitimate Peripheral Participation) and effect their transition, via formal and informal learning, towards full membership of the community (1998, p. 263). In addition, Wenger's model of learning placed a high value on students' freedom to develop individual identities as well as their role in contributing to the development of the discipline. This dynamic view of both the individual and the discipline offers architectural educators a

plausible foil to the rather doom laden reproductive models suggested by writers from the Critical Pedagogy tradition, such as Giroux (1991, pp. x-xii) and Dutton (1991, pp. 165-194), as well as broadening Schön's narrow lens on learning.

### **Boundaries: professional knowledge**

The third issue connected with boundaries concerns Schön's oddly limited model of architectural knowledge and learning. When Schön looks at architectural practice and learning he views it through a cognitive lens and this is problematic in two significant ways. Firstly, in his long explication of students' encounters with design tutors Schön suggests that the role of the design tutor is to 'correct' students' designs. For instance, when Schön describes Petra's tutorial with Mr Quist he describes the way that Quist both tells and shows Petra, via drawing over her designs, the correct way to formulate a design problem and the right way to place a building on a sloping site (Schön, 1985, p. 51). However, Schön seems oblivious to the notion that there might be more than one solution to any design problem and that Quist has no right to impose his solution on Petra. Schön fails to acknowledge that architecture is a dynamic and contested field or the ramifications that this might have on the design tutorial interaction.

Secondly, Schön's cognitive view of architectural practice fails to account for the reality that architectural identity is constituted of cognitive, affective and corporeal dimensions. Victoria Ellis made this point very forcefully during an address to the University of Illinois when she asked:

Why is it we enter [architecture school] with incredibly diverse backgrounds, interests and friends and we leave here with the exact same handwriting, muttering a language that prevents normal communication and exchange with almost anyone outside of our future profession – and we like it this way...?

(cited in Anthony, 1990, p. 38)

Anyone who teaches architecture knows that educating students to become architects involves more than just inculcating the knowledge, skills and abilities (learning outcomes) reified in the course documents. It is undeniable, although rarely talked about, that architectural education has a powerful 'hidden curriculum' that socialises and acculturates students into the values (particularly aesthetic, motivational and ethical values) and practices (including language, deportment and dress) of the discipline (Dutton, 1991, p. 167). Yet Schön's theories fail to acknowledge the existence, let alone the importance, of the affective and the corporeal domains of architectural learning.

Pierre Bourdieu, a sociologist/cultural theorist who carried out extensive empirical research on the French education system in the 1970s and 1980s, argued that a more holistic conceptualisation of the individual and the way individuals act in the world was needed to counter the determinism suggested by theoretical models of society that gave precedent to structure over agency.



Bourdieu suggested that individuals possess a *habitus*, which he described as:

...a system of dispositions, that is of permanent manners of seeing, acting and thinking, or as a system of longevity (rather than permanent) schemes or schemata or structures of perception, conception and action

(Bourdieu, 2005, p. 43)

Bourdieu's notion of *habitus* is very appealing because it accounts for the way in which a synthesis of the epistemological, ontological and embodied aspects of self informs how people act in real life situations. Bourdieu's notion of *habitus* is also appealing because it replaces notions of natural or generic inheritance with the notion that individuals continually develop their *habitus* through their experiences in life, including their education. This notion seems to provide a plausible account for the ways in which students bring their personal *habitus* to an architectural education and through engaging in a programme of formal and informal learning they slowly bring their *habitus* into alignment with the *habitus* of the discipline. Bourdieu's notion of *habitus* arguably provides a holistic notion of the individual that is missing in Schön's work. Consequently, it challenges tutors both to re-conceptualise the student (as an individual with a distinctive *habitus*) and to consider how formal teaching addresses all three dimensions of the student *habitus*.

## Cracks: Espoused Theory versus Theory in Action

In all his publications on reflection Schön draws on architectural education for examples that demonstrate his theories in practice. His favourite vignettes is the one-to-one design tutorial between Petra and Mr Quist her design tutor. Schön's long narrative of the Petra/Quist tutorial (1985, pp. 32-52), describes how Petra is stuck with her design and Quist, the expert tutor, comes to her rescue by re-framing her design problem and modelling a solution through a combination of words and drawings. Schön's narrative was derived from his interpretation of a transcript of a real tutorial made by another researcher (Schön, 1985, p. 99). This second-hand, un-triangulated reading of the tutorial interaction resulted in Schön concluding that, through 'telling and listening', 'demonstration and imitation', Petra learnt 'correct' professional action. However, these conclusions should be considered as rather suspect, firstly because Schön's methodology lacks validity and secondly because the evidence does not support the conclusions. In reality, Schön had no primary data that confirmed what, if anything, Petra learnt from her tutorial with Mr Quist.

Even if Schön's claims lack an evidential foundation, there continue to be many tutors who approach tutorials in the same manner as Mr Quist believing, as Schön did, that students learn from this approach to teaching. Yet, those readers who have read the generic literature on learning and teaching or instinctively feel that tutors should avoid coercion will find Mr Quist's teaching manner deeply worrying. Schön's description of teaching is arguably akin to a teacher-centred model; described by the learning and teaching literature as a 'transmission' model of teaching (Ramsden, 2003). In recent years phenomenological and ethnographic type research has provided evidence that transmission teaching is not an

effective way to inculcate learning (Prosser & Trigwell, 1999). Subsequently, new theories of student learning that focus on what the student does rather than what the tutor does have gained popularity in higher education (Ramsden, 2003, pp. 14-19; Biggs, 2003, p. 12). These theories propose a new model for the teacher as 'facilitator', 'critical friend,' or 'liminal servant' (Webster, 2004b, p. 10). In light of the above, it is clear that Schön's conception of the way students learn in a tutorial situation is in urgent need of revision.

## **Blurs: Reflection-in-action**

On the surface Schön's notions of learning through action and reflection are very seductive. When one thinks of the act of designing and the kind of evaluative thinking that occurs at every stage of the design process (although notably not the forward looking creative thinking) the process might easily be defined as reflection-in-action and reflection-on-action. However, on further scrutiny one wonders exactly how reflection-in-action or reflection-on-action differs from the quintessentially human activity of 'thinking'? Could it be, as Eraut has suggested, that reflection is no more than a metaphor for thinking (1994, p. 145)? One also wonders about the plausibility of temporal aspects of Schön's concepts. For instance, at what point does action become reflection-in-action and at what point does reflection-in-action stop and reflection-on-action start? If reflection-in-action is in the same time frame as action then, if one thinks about creating a quick sketch, is it really possible to disaggregate unconscious and conscious thought processes into action and reflection-in action? Notably, Schön does not draw on any psychological studies of the design process to support his notions (Russell and Munby, 1991). It is all a bit of a convenient blur. Even those who have signed up fully to the reflective paradigm avoid confronting these issues and instead focus on the importance of critical reflection with expert others as the central means of ensuring transformative, as opposed to self-confirming reflection (Boud *et al.*, 1985; Moon, 1999; Brockbank & McGill, 2007). Clearly, reflection has an important role in designing. However, it is only one part of the design process. It might be more fruitful for architectural educators interested in understanding more about the performative act of designing to consult theories of innovation and creativity because they provide more rounded and nuanced models of the design process (Cropley, 2001; Lawson; 2005).

## **Blur: The Subject Agency Dialectic**

Arguably, following the late-20<sup>th</sup> century paradigm shift from enlightenment to post-enlightenment thought the notion of objective 'truth' and 'knowledge' have largely been undermined. We now accept a kind of relativism in which 'truths' are constructed by cultural groups and further that these groups are in constant power struggles with other groups to assert the dominance of their particular 'truths'. Struggles for power also occur within groups and in the field of architecture this is most obviously seen in the battles over aesthetics (i.e. what constitutes quality in architecture). So, if one accepts that professional knowledge is both 'constructed' and 'contested' both between and within groups it seems very odd that Donald Schön continually presents architectural knowledge as unproblematic (as opposed to 'contested' and 'contestable').



It is Schön's enlightenment view of knowledge as 'truth' that allows him to present Mr Quist's *habitus* as a paradigm of the architectural *habitus* (Schön, 1985, pp. 32-52). According to Schön, all the student Petra has to do to become an architect is to learn to be like Mr Quist: white, male and middle class! In Schön's model of learning there seems no possibility that Petra 'could' or 'should' be critically constructing her own architectural *habitus* or that her *habitus* might or might not differ radically from her tutor's *habitus*. Further, Schön fails to recognise that Quist, as a representative of a particular institutional *habitus*, uses his power to direct Petra's learning towards alignment with his normative *habitus*. The tutorial interaction Schön describes is a prime example of the primacy of structure over agency i.e. Quist provides little room for Petra to act independently or make her own choices.

The production of theoretical models that account for the structure/agency dialectic has pre-occupied many 20<sup>th</sup> century sociologists (Giddens, 1984; Foucault, 1990; Bourdieu, 1977). Yet, Schön fails to acknowledge that formal education (structure), with its curriculum, space, rituals, as well as its pedagogic encounters, sets the limits of freedom for students. Along with other apologists for the naturalised model of architectural education Schön puts forward design studio learning as a paradigm for liberal self-development. However, recent primary research on design studio learning has painted a picture of tight control, coercion and molding (Dutton, 1991, p. 167; Stevens, 2002, p. 187). When Matthew Hyland, in his Marxist critique of vocational education, wrote "I break the horses, I don't tend to them" he might well have been referring to architectural education (Hyland, 2004, p. 12). While this metaphor might be over egging the cake there is research evidence to suggest that there is a high degree of misrecognition among architectural educators, not least by Schön (Webster, 2004b). Contemporary literature on the role of power in learning and teaching suggests that education can be designed to either minimise or maximise the freedom of students (Paechter *et al.*, 2001, p. vii). Yet, to achieve the latter educators need to unravel 'what is really going on' through primary research and then develop pedagogical models that promote the freedom for students to critically develop their own *habitus* whilst simultaneously contributing to the changing *habitus* of the field. This is not new territory in the world of education and the ideas of all of the aforementioned thinkers could help.

## Beyond Schön

Finally, the aim of the above rather critical narrative was not to undermine Schön's theories totally but to demonstrate that, by looking at architectural knowledge, action and education through a particular narrow lens (reflection), Schön produced a very particular and partial epistemological reading. The limitations of this reading can be summarised as follows:

### Limitations of Schön's epistemology of architectural/professional practice

- Ignores many devices formal education uses to direct student learning.
- Presents a narrow notion of how learning takes place (formal interactions only).

- Demonstrates a limited understanding of the domains of learning (cognitive only).
- Uses research methods of dubious validity.
- Under conceptualises the notion of 'Reflection'.
- Does not recognise the structure/agency dialectic or the ways that structure can restrict individual freedom.

Although one might criticise Schön for being un-reflexive (i.e. he did not declare/recognise the limitations of his viewpoint) the intention of this paper was not to undermine the value of Schön's contribution to professional education. There is little doubt that Schön's ideas drew attention to the reality that professionals (in fact all people) act in complex contexts and can develop expert tacit knowledge through reflecting on experience. Further, Schön's suggestion that professional education should explicitly facilitate the development of expert tacit knowledge should not be under-valued. However, it is important that educators who value Schön's ideas on reflection recognise their 'partial' nature and avoid seeing them as a coherent epistemology of professional practice. It might be more helpful if Schön's work was valued for its rich description of the cognitive aspects of performative action.

At the end of this process of criticism one is left wondering why Schön, a philosopher by training, produced theoretical ideas that were so heavily based on cognitive learning theory. The answer might simply have something to do with the historical context within which Schön was situated. Schön was working at the time of a paradigm shift in educational theory and it could be argued that, as a result, his ideas sit in an unresolved position between the pre-1980s behaviourist/cognitive (enlightenment) and post-1980s social/situational (post-enlightenment) orientations to student learning. The suggestion in this paper is that educators now need to move beyond Schön's ideas and engage more fully with theories of situated knowledge, action and learning, whilst recognising that they also view particular issues through particular lenses. In this way those interested in the betterment of architectural education might begin to engage in a form of inter-textuality, a dialogue between theories, which might result in the critical scrutiny and revision to the theories themselves (including Schön's) as well as contributing towards the building of a richer and more complete picture of architectural knowledge, action and learning.

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