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**DESIGN EDUCATION ALL OVER THE PLACE:
On dimensions of design education, the peculiar place of RPDs and
assessment**

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Introduction

Design education is not a unitary practice.

For 'larger scale' disciplines (interior architecture, architecture, landscape architecture and urban design), studio is the central pedagogical paradigm. The principal pedagogical instrument is the design studio project ('DSP').

studios need to be understood in four essential dimensions: a studio culture/community of people; a mode of teaching and learning; a program of projects and activities; and a physical space or constructed environment.¹

France's École Polytechnique provided the original "studio" delivery mode in design education: teaching staff visited students working at their individual workstations on projects set by the studio master (Pfammatter, 2000).² "Studio" refers also to accommodations off campus in which students work, without necessity of instructor participation.³ It refers also to the multidimensional "design seminar", without fixed place, probably the commonest sense of "studio" in Australia.⁴

There are also adjunct design courses, separate from studio, without projects. These include units covering compositional analysis, design research, design thinking and philosophy, taught through lectures, seminars or workshops, employing other assessment tasks including workbooks, reflective journals, decision diaries, analyses

¹ Zehner *et al* (2009, vol. 1, p. vi).

² I understand that it is a requirement of American Institute of Architects' accreditation of architectural programs in the United States that such accommodations are provided in schools.

³ Probably deriving ultimately from the ateliers of the Beaux Arts tradition (Gu, 2003). Design studios, especially in design education and possibly for preference, allow the individualism of professional artists' studios rarely. Perhaps only the graduate programs at Cranbrook Academy of Art provide an example (Smith, 2014, pp. 119-137).

⁴ This a measure of the level of public funding of design education in Australia. In Semester 1, 2015, at the University of Melbourne's (graduate) Melbourne School of Design, for example, there were thirty-two such Architectural Design Studios and seven Design Thesis Studios that met twice a week for three hours each time, often in different rooms. In Semester 2, thirty-two students (from a cohort of 140 or so) undertook individual design theses (RDPs). Maturana (2011) examines the poor connections between schools' stated aims, aims of the professional body and what actually are the emphases of architectural design studios.

of past projects and manifestos (Missingham, 2003; Tregloan and Missingham, 2010). Schools schedule encounters with selections from this diversity in quite different combinations and sequences.

Design educational diversity ramifies with assessment. Assessed on criteria of complexity, assessing a SDP often involves assessment of process and the student on additional criteria.

Graduate education shifts emphasis from skills acquisition and development to students' control (mastery) of their own designing. Senior students are encouraged to undertake individual design Thesis projects and some later undertake PhDs by project (or by "creative works"). Both types of design project are research projects conducted through designing ('RPDs').

This paper first considers RPDs, briefly commenting on relations between creative works and accompanying texts. Its major focus is on assessment, noting that assessment of SDPs accompanies direct assessment of students. By comparison, assessment of RPDs is less parochial, comparative or competitive, positioned in a historical and global context. There are two key differences. The first is the assessment of a SDP's design quality compared to a RDP's contribution to knowledge. The second difference is the greater emphasis on RDP candidates' demonstrated understanding of their achievement.

Final remarks comment on what SDP and RPD assessments share. Taken together, the issues concern positioning project and self within streams of design and/or research precedent. The developing body of knowledge characteristic of a research tradition might only begin to accumulate when pre-professionals are required as part of their training to develop requisite habits.

RPDs

Missing from a convincing characterisation of architectural design as a research discipline is systematic documentation either of connections between intentions and outcomes or between ends and means, together with a consequently accumulating body of knowledge (Downton, 2003; Norman, 2010)⁵.

Design is itself multiply hypothesis-like. An architectural project is a cluster of propositions about a housed enterprise, the use of a building by more or less known people to more or less well specified ends, given knowledge of people's physical natures, hopes and desires.

⁵ Jonas (2012) provides a recent, relatively usefully comprehensive rehearsal of accounts of research by design.

That list of requirements beloved of Assistant Deans (Research Training) could act as a plan of work: research questions, hypotheses, and null hypotheses.⁶ But, this misunderstands designing. Designing unfolds both in what it tries to achieve and what it finds *as it proceeds*. The findings of RPDs have their own nature, best explained and their research value elucidated *a posteriori*.⁷

RPD PhDs in design disciplines (and individual Design Theses at Masters level) accord with colleague Alex Selenitsch's categorisation of tendencies.⁸

Design projects illustrating or testing theory (text comes first, with focus on theory) – the designer conducts experiments (McGaw, 2007) or illustrates;

Design projects provided with exegesis or explanation (text mostly retrospective) – a very common kind of RPD in design disciplines (Bruns, 2000; Smith, 2014)⁹; and

Projects with ideas and designing mutually provocative – the research goal is clarified both in text and through experiments constituting the project (Selenitsch, 2007; Wright, 2012; Easton, 2014; and Chrisp, 2014; Falvo, 2015).¹⁰

These characterisations are sketches. The third category may actually encompass all RPDs with the other two designating ends of a multi-stranded spectrum.

Assessment of SDPs

Learning Objectives are pedagogical units' reasons for being. In a Constructive Alignment perspective, assessment tasks test whether the Learning Objectives have been met (Biggs and Tang, 2003).

Assessment of SDPs usually confounds assessment of the project with assessment of the student. Assessment determines whether students progress. Measures toward fair and transparent assessment include using experienced assessors (usually tenured design staff augmented by practitioners), collective moderation of grades across studios and rubrics.

⁶ As at UNSW's COFA.

⁷ Darby (2010, p. 59) notes the idea of 'Emergent Criteria' for assessing project quality in art-based PhDs by project, with the implication that the unique features of individual such PhDs may lead to the establishing of appropriate criteria for evaluation only during and as part of the process of the PhD's undertaking.

Is this something of what is meant by 'Magic' in discussing SDPs?

⁸ In conversation. The elaborations are mine.

In my direct experience of over fifty PhDs since 2000 (as supervisor, panel member, consultant, examiner), RPD PhDs are a small proportion. The experience in equivalent departments at Monash University's MADA, RMIT University or UTS should be quite different.

⁹ This is described as the "practicing exegesis model" of RPDs in Haysom (2010, pp. 151-153).

¹⁰ These last two are the kinds of RPD that most closely resemble art practice.

1 Assessment of SDPs: Criteria

SDPs are assessed on at least five criteria: **Scale** (ranging from jewelry piece to coastal park), **Programmatic complexity** (from simple warehouse to complex metropolitan teaching hospital), **Range of issues addressed** (including, say: function, aesthetics, cultural history, sustainability and urban design),¹¹ **Range of scales addressed** (from master planning to detailing), and **Intellectual Ambition** (from pragmatics to cultural philosophy) – all measures of complexity.

2 Assessment of students: Criteria

Students are commonly assessed on **communication** (drawings, models (digital and/or physical), diagrams, reports, speaking), **against studio expectations** (did they play the studio's game?)¹², **against themselves** (stretching their capabilities, improving in subtlety or depth of understanding, design skills or coping with greater complexity, perhaps)¹³, and **self-assessment** (of achievements and limitations of their SDPs – particularly important in graduate school).¹⁴

3 Indicators of student outcomes

The most comprehensive review of studio teaching in art, design and architecture in Australia discusses assessment in four steps, stressing 'indicators of student outcomes' (Zehner et al, 2009, vol. 1, p. vii):

Three dimensions of assessment: Assessment of the **Product** (SDP, above) and the **Student** (as above) and of the **Process**.¹⁵

(2) Differences in emphases of these dimensions across the disciplines:

Art	1 Process	2 Person	3 Product
Design	1 Process	2 Product	3 People
Architecture	1 Product	2 Process	3 People

(3) Detailed dimensions of assessment: besides those noted in 3.1 and 3.2, above, including Interdisciplinarity and Self-management. Additionally, the very difficult to define dimension of Magic is noted, readily recognised in studio (with

¹¹ This is one place where Process may be assessed in SDPs.

¹² That this is a social rather than a pedagogical question doesn't deny its relevance as a criterion bearing on future professional capacity and capability. This is also where Process may be assessed.

¹³ I once failed a student who drew up his whole design proposal over the weekend before the hand-in date. It was by far the best design by a student under my charge. But the student had learned nothing through the exercise. The quite experienced son of an architect, he had simply demonstrated his pre-existing capabilities. The forms of study contract in use at RMIT University at that time were very explicit about demonstrating substantial growth in capabilities over the Semester. He rose considerably in my estimation when, a week or so later, he ruefully admitted I was right to fail him. He never again made that mistake.

¹⁴ And is the primary basis of advancement based on assessment in the Industrial Design program at TU Eindhoven (Lawson and Dorst, 2009, pp. 101 and 103).

¹⁵ For SDPs, Process has a relation to Product analogous to Methodology in respect of RPDs.

pleased surprise when a student's SDP goes beyond what had been anticipated).¹⁶

(4) **Five principles for application of the indicators:**

- (a) ***Flexibility:*** not all indicators need be assessed every time.
- (b) ***Applicability at both individual unit and degree level.***
- (c) Dimensions and associated indicators ***can support developmental assessment*** as students progress.
- (d) ***Indicators can inform design of studio assessment tasks and development of assessment rubrics.***
- (e) ***Indicators can be discussed with students,*** aiding development of a shared understanding of what is being assessed and why.

Comparisons

1 Projects

RPDs are not assessed in the same way as SDPs. Studios exist in inherently comparative educational frameworks with competition between students for prizes, scholarships and, at the undergraduate level, grades toward places at graduate school. Assessment of SDPs supposedly allowing relatively objective comparisons of students. Design quality is discussed as a condition, individually, for professional entry and, collectively, for school accreditation. Moreover, the assessment context is usually parochial: within the school and with local professional bodies providing both additional assessors and accrediting systems. For RPDs, that directly comparative element is absent.

Consider the following and ask what they share:

The garden designed by a former film-maker inspired by a Nathaniel Hawthorne short story and films of Jacques Tati (Bruns, 2000)¹⁷;

Craft studios and increasingly autobiographical houses designed by the artist-architect developing a scheme derived from traditions in music, literature and painting (Selenitsch, 2007)¹⁸;

¹⁶ Magic is there noted as a dimension of all three Dimensions of Assessment: Product, People and Process.

I do not discuss Process, here, because it has been, in my experience of SDP assessment, a relatively rare feature. The increasing prevalence of parametrics-based studios may be changing this.

¹⁷ The first completed RDP PhD in architecture at RMIT University.

¹⁸ The first completed RDP PhD in architecture at the University of Melbourne.

Installations in Melbourne lanes devised jointly with homeless women to explicate Bloomer's notion of a minor architecture (Bloomer, 1993; McGaw, 2007)¹⁹;

Phenomenology-based studios run jointly by Ross T Smith and Byron Kinnaird, the Smith studio at Frank Lloyd Wright's Taliesin, Wisconsin, and an argument for remote residential studio teaching in architecture (Smith, 2014); and

The soffit of a street canopy, walls of a tunnel from a garage, a corridor in a private apartment and three exhibitions by a reductive abstract painter all inspired by private Chinese garden principles (Easton, 2014).

For RPDs, assessment focuses on contribution to knowledge – determining a context both historical and global (with at least one examiner usually being from another country). Additionally, both the relations between text and creative work in RPDs and the balance in assessment of RPDs between assessment of work and candidate are considerably more subtle and richer than with SDPs.

For PhDs, explicit treatments of methodology bear on readers' comfort with evidence produced. What RPDs share is that both research methodology and the (collection of) methods employed are likely to be unique to the project (in the mixtures of methods, how they are used or how their relevance is argued).²⁰ This suggests RPDs contribute to knowledge by that very fact.²¹

But, few design researchers prefer methodological outcomes over creative works outcomes.

Now, I have previously claimed that ...

A proposition is creative if ...

- It is relatively novel for its domain ("I don't think I've seen this before"),
- If it adds value to the total information content of the domain, it enriches or enlarges it ("This adds to what we used to think"), and

¹⁹ The second completed RDP PhD in architecture at the University of Melbourne. The description is of part of the whole only.

²⁰ Another Selenitsch observation, in conversation.

Koskinen *et al* (2011) provide a comprehensive review of research methods used over forty years of RPDs. Methodology and methods for RPDs are paralleled, more or less, by considerations of Process in SDPs.

²¹ Mind you, that might not be enough for a PhD in Britain, when it is usually required that the candidate demonstrate a critical understanding of the research method options pertinent to their task rather than only of those actually used (Dunin-Woyseth, 2005, pp. 87-88), presumably a requirement of PhDs considered as research training devices.

- Whether abstract, relational, or embodied in discursive, material or behavioural form, for example, is suggestively fecund or provocative for others to build with and on (“I can see what this might lead to”).²²

Satisfying these three criteria is a requirement of the RPD PhD, text and creative work contributing in different ways.

Satisfying the second feature is fundamental to research, contributing new knowledge. Satisfying the third feature might be how we understand that a contribution to knowledge has been made.

Creative works in RPDs are expected to stand well with like genre works outside the research framework. In a RPD, the provocation of design quality might alert the discipline (through its examiner representatives) that the third criterion of creative propositions has been satisfied. Conversely, satisfying these last two features of creative propositions might be what is meant by design quality.²³

2 Candidates and Texts

RPD PhDs are necessarily discursive, framed in words. For artists and designers focused on nonverbal outcomes, the difficult translation from the nonverbal to text is necessarily metaphoric yet must support the case for the candidate’s achievement.²⁴ Participation in the semantic ecology that is design production requires some rhetorical facility (Krippendorff, 2006).

Further, therefore, and finally, a RPD will be considered adequate research if the candidate ...

- can, through their discussion of it, demonstrate that the creative work outcome was intentional (even if in some restricted sense),
- can place the RPD in a context in which the discipline might presently be (persuaded to be) interested,
- demonstrates that they see, themselves, how the RPD satisfies the three features of creative propositions, noted above, and,
- in doing these last two things, demonstrates the candidate’s detached ability to evaluate their own contribution.

²² In Missingham (2010). There are thirty-eight other views of creativity in the same volume. A completely different, ‘deconstructed postmodernist’ view is noted in Ashton (2010, p. 23).

²³ Remember Darby (2010, p. 59).

hesitate to suggest it but an illustrative RDP, in the sense intended in 2., above, might not require great design quality.

²⁴ Francini (2010, p. 113) notes the anxiety that this caused her.

This transfer occurs both ways multiple times in RDPs where ideas and designing continuously feed off each other.

These are measures of the candidate accessed primarily through the text. A question of degree, the second difference between assessment of SDPs and RPDs entails much greater scrutiny of candidates' demonstrations of their understanding of their achievement.²⁵

Conclusions

Design studio might be the commonest form of design education but isn't the only form. Nor do studio design projects (SDPs) exhaust the instruments of assessment in design education. Assessment of SDPs is multidimensional and a proxy assessment of students, of their capacities as future design professionals. Direct assessment of students commonly occurs in assessing SDPs.

PhDs and Masters design theses RDPs are at the rarified end of design education, framed within a historical tradition of higher learning, positioned within emerging concerns of disciplines, with PhDs assessed in a global context. The embedded creative works have to stand as works within each discipline's own frameworks of evaluation, but the associated texts have to carry the case for the candidate, demonstrating the candidate's framing, positioning and evaluation of their achievement. That is, assessment of RDPs is likewise both multidimensional and proxy assessment of candidates, of their capacities as future design academics (and/or professionals).

Both assessments require originality of product. For SDPs, this concerns authorship and some measure of innovation but for RDPs the standard is higher: contribution to knowledge. With SDPs, bonuses for 'Magic' might entail something similar, but we don't usually preserve such outcomes with the same care (although digital archives might do). Some SDPs require emphasis of process. Were this to become more common, lessons might be drawn from how methodology and methods are treated with RDPs. The standard of self-aware argument is also expected to be higher for RDPs over SDPs. Taken together, these issues are about positioning project and self within the stream of precedent, of designs and/or research findings. Perhaps a developing body of knowledge might only begin to accumulate when, as part of their training, pre-professionals are required to develop the requisite habits. A school could emphasise design outcomes based on solid research and evaluate depth, cogency and skill in application of research findings.²⁶

²⁵ Universities (or countries) with the tradition of verbal defenses of PhDs, *viva voce*, or in-person presentations provide both the candidate and the assessors an advantage in this respect, stressful though it may be for the former. In those instances, the 'text' could be, in principle, entirely oral.

²⁶ See, for instance, the Domus Academy, Milan, website: <http://www.servicedesigntools.org>. The best RDPs at Master's level are beginning to do exactly this.

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