Rock Paper Scissors: Reflective Practices for design process in the landscape architecture novice

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Abstract: We describe a pedagogical approach that addresses challenges in design education for novices. These include an inability to frame new problems and limited-to-no design capability or domain knowledge. Such challenges can reduce student engagement with design practice, cause derivative design solutions as well as the inappropriate simplification of design assignments and assessment criteria by educators. We argue that a curriculum that develops the student’s design process will enable them to deal with the uncertain and dynamic situations that characterise design. We describe how this may be achieved and explain our pedagogical approach in terms of methods from Reflective Practice and theories of abstraction and creativity. We present a landscape architecture unit, recently taught, as an example. It constitutes design exercises that require little domain or design expertise to support the development of conceptual thinking and a design rationale. We show how this approach (a) leveraged the novice’s existing spatial and thinking skills while (b) retaining contextually-rich design situations. Examples of the design exercises taught are described along with samples of student work. The assessment rationale is also presented and explained. Finally, we conclude by reflecting on how this approach relates to innovation, sustainability and other disciplines.

Keywords: Reflective Practice, problem framing, landscape architecture, conceptual thinking, creativity, abstraction, teaching design, assessment, sustainability.

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Introduction

Student designers have inadequate skills and lack the ability to deal with the open-ended problems and unpredictable situations that characterise professional practice. This stems from the novice’s lack of experience. It is however also attributable to shortcomings in education – often resulting from economic pressures on those institutions. We believe that an educational program that develops the student’s design process and leverages their existing skillset and experiences can address these challenges. We propose teaching design as a ‘Reflective Conversation’. We show how this approach can firstly, develop the student’s design processes or rationale for creative decisions and secondly, expand on initial visual thinking capabilities to develop design experience. The approach taken is consistent with Donald Schön’s seminal work identifying ‘reflective’ professional practice behaviours (Schön 1983).

In this paper we describe this approach through example. The example is Look See Create, a design process that underlies a series of design exercises in an introductory (first year) course in Landscape Architecture design. The course curriculum, design process and assessment criteria were developed by author Lenigas. In this paper we describe Lenigas’ process of Look See Create by framing it in terms of (1) Schön’s work on Reflective Practice and (2) theories of abstraction and creativity.

The discussion of Look See Create includes sample design exercises, student work and the assessment structure used. The need for – and significance of – a design education that embodies Reflective Practice is explained next.

Design Education

Problems in design education can be attributed to the prevalence of ‘Technical Rationalism’: “…the application of scientific theory and technique to the instrumental problems of practice” (Schön 1983, p.30). As stated this may be caused by increasing economic pressure and the limited resources and high student to educator ratios that accompany it. However, the Technical Rationality model of knowledge does not equip professionals with the adaptive skills for responding to and managing unique situations. Furthermore, this model tends to manifest design problems where the answer is clearly apparent or sometimes even provided. Inherently reductive, it has the dubious benefit of supporting modular, repetitive education and, by extension, faster marking. Thus it often passes for an economically sound approach. However, we argue that it is not, in fact, a quality education product. This is because it does not equip students with the skills necessary for addressing real-world design situations; such as the ability to extrapolate problem variables or generate an independent ‘frame’ for understanding.

The long-term skills of the student are also lacking within this educational process, and for similar reasons. In design, professional practice is characterised by situations that are open-ended and that change. Hence, flexibility and adaptation are key to long-term survival. This is reinforced by architectural design researcher William Mitchell’s description of ‘ill-defined’ problems. For example, designing “…a house for a poet on a rocky bluff” (Mitchell 1990, 27) is an ‘ill-defined’ problem. It does not have a fixed set of design variables but is instead open to interpretation and the creation of new vocabularies. Furthermore, the design process is not routine and there is no single approach to solving it, nor is there a single answer (Mitchell 1990). Instead, as per our example, there are a myriad of architectural structures that could suit the poet. This range of possible solutions is characteristic of the ‘ill-defined’ problem and further
illustrates the uncertain terrain a designer must navigate to bring both meaning and spatial resolution to their work. The situation is further compounded by the lack of explicit definition and understanding of the design process that practitioners actually use. The Technical Rationalist approach inadequately addresses these challenges. However, the alternative approach of Reflective Practice (Schön 1983) can facilitate effective design education.

**Reflection-in-action for design**

Reflective Practice (Schön 1983) emerged from case studies of professional practitioners across a range of domains – from psychology through to architecture. In the *Reflective Design Conversation* an account and protocol analysis, Schön identified a range of common behaviours in the professional practitioner. These include exercising ‘knowing-in-action’ and ‘repertoire’, ‘problem framing’, ‘listening to situation talk-back’, making ‘moves’ and working iteratively.

These behaviours have subsequently been employed as practice-based research methods to guide the process of making creative works and to generate knowledge and design insights. For example in author Seevinck’s practice-based research (2011) the approach involves both the iterative quality of the Reflective Practice methods to evolve design thinking and protypes; and it facilitates Reflection-in-action through self-critique and qualitative evaluations. Other research that also employs Reflective Practice methods for creative practice is the work at the Creativity and Cognition Studios, University of Technology, Sydney (Candy and Edmonds 2010; Candy and Edmonds 2011).

The foundation of this first year landscape design course, the *Look See Create* process which is shown in Figure 1, also engages with these methods of Reflective Practice:

Firstly, the framing behaviour describes how a practitioner constructs their view or understanding of a problem or situation. It is a way of setting the problem that enables a non-standard response to unique, unstable and uncertain situations. Framing therefore distinguishes Reflection-in-action from the Technical Rationality model because the latter relies on standard responses to problems. Framing is achieved by looking at the situation and trying to understand its characteristics. For an experienced designer, the framing process is assisted by their past experience because they know “...what to look for and how to respond to” it (Schön 1983, p.60). For the novice, this process of re-framing requires them to supplement their limited repertoire — the practitioner’s accumulated history of their professional work—through research, experience and guidance.

Secondly, as described by Schön, knowing-in-action draws on the practitioner’s repertoire and tacit knowledge in the field. Knowing-in-action stems from the common sense concept of ‘know how’. It is the tacit knowledge embodied in an action, where this action can’t be accurately or completely described (Schön 1983, p.50). A process of ‘reflection’ facilitates describing this knowledge and making it explicit: for example the professional designer can ask him/herself ‘what procedures am I enacting when I perform this skill?’ In so doing they move towards a deeper understanding of their process and the ability to apply it more flexibly and with greater control, rather than remaining reliant on intuition. However, the novice designer has very little knowledge of design, as yet. Our approach leverages their small skill to incrementally develop more sophisticated knowledge, design processes and eventually domain-specific skills.
Thirdly, framing a situation or problem and creating a response or solution to it both necessitates analysing or ‘listening to’ that situation. This framing process changes the understood meaning: that is, when a situation has been reframed it can be interpreted in a new way—or as a different hierarchy of relationships. Comprehending these changes in the situation is described as ‘listening’ to situation talk-back as the situation can be understood as ‘talking back’ to the practitioner. Situation talk-back is an active review that implies a degree of evaluation and in turn feedback on the part of the designer. Schön describes this as a process that “…spirals through appreciation and re-appreciation” (Schön 1983, p.131-2).

For both the novice and the practitioner, the newly-framed understanding needs to be tested by comparing the new frame against the situation and evaluating what possibilities and constraints it offers. Sketches or prototypes can be created to explore this framing. The result would be reviewed by listening to situation talk-back. The process repeats until the practitioner assesses the new frame as being satisfactory. These processes can be through self-reflection, self-critique, or external evaluation, such as through studio critique. The insights gained from situation talk-back or critiques affect the subsequent framing of the situation and subsequent design responses (or implementations of knowing-in-action).

**Reflection-in-action for novice design education**

We have articulated two problems with design education: supporting skills for dealing with open-ended or ‘ill-defined’ problems and the novice’s lack of experience. The lack of experience means that their design repertoire is limited. Finding the means to support problem framing given this lack of design expertise is therefore a key issue. However, this requires a problem space or situation that is open-ended enough to sustain exploration and a range of interpretations; namely an ‘ill-defined’ problem.

Our solution to this is twofold: firstly, we believe that through abstracting and interpretation, sophisticated design thinking can be supported through technically simple problems. Secondly, it is possible to stagger skills development to gradually move the novice from simple to more technically involved tasks that are more deeply in the domain. This then occurs while simultaneously working on complex and unpredictable problems. It can be achieved by drawing on the theories and methods described above. The Look See Create process exemplifies this approach to facilitate novice student engagement with complex and uncertain issues. It is now described.

**Look See Create: a design process for novices**

The Look See Create process underlies the design exercises taught in this unit. It has come out of Lenigas’s professional design experiences. Lenigas is the lead educator in this design unit and a professional practitioner with an extensive design repertoire that informs his course design.

The first stage of the Look See Create process involves listening and experiencing the project ‘site’. The second stage focused on interpretation – where the student must pay attention to what and how s/he ‘sees’. This is where an understanding is formed of the place or design situation. It is essentially a point of framing that results in a new way of understanding the place but also in a design problem, “…to create a springboard for design inquiry” (Schön 1985, p.6). The third, ‘create’ step is where this problem addressed. This may be done by ‘amplifying’ the newly framed understanding of the
Abstraction, interpretation, creativity

Implicit in Lenigas’ Look See Create process is an abstraction of the design problem that is neither a dumbing down nor inappropriate to the situation, yet still simple enough for the novice to engage with. The key point here is that a simple task is not necessarily a ‘dumb’ task. We clarify this distinction by employing abstraction in the service of simplicity. It is therefore useful to clarify how ‘abstraction’ is understood here.

Abstraction is often understood as meaning “a reduced, often symbolic description of something” (Edmonds 2006). It can also be understood as a core idea behind something. For example, in the visual arts, abstraction allows the artist to focus on the "hidden relations between things" and not just their appearance (Gooding 2001, p.6-7). Abstract artists from early to mid-20th century were moving away from representing the world through "the imitation of natural appearance" (Gooding 2001, p.10), seeking instead to find new ways of seeing the world: “new possibilities of vision, changing the way in which things are seen and known” (Gooding 2001, p.10).

This shift in art also liberated the audience to interpret the various possible meanings of the work. Thus the abstract work gave rise to multiplicity of interpretations or, or as described by art theorist Gooding, “an unprecedented freedom of imaginative response” (2001).

The creative and interpretive role that the viewer of an abstract artwork can take is exemplified in Mondrian’s Composition with Yellow Lines (1933). In this work the lines never intersect on the diagonally placed canvas, yet it is possible to interpret a symbolic star. This is an ‘open-ended’ work; namely one with multiple interpretations or understandings. Moreover, here a viewer is needed to realise or complete the work –
the star does not exist without someone there to perceive it. The ambiguity and open-ended nature of Mondrian’s canvas is similar to the character of Mitchell’s ‘ill-defined’ problem in that both require creative acts of interpretation. For the designer, the process of interpreting the problem space is a process of assigning meanings to evolve design intentions: “Intentions may be very vague at the outset, then may evolve and sharpen as the design process unfolds” (Mitchell 1990, p.39). Interpretation is key to the design process. For the student it is a core capability that facilitates them in identifying new forms, shapes, connections and meaning in that situation.

The identification of new possibilities is integral to the creative design process, but not identical to it. While creativity is commonly understood as a “novel combination of old ideas” creativity theorist Boden argues that the novel outcome must be considered interesting or valuable in order to qualify as creative (1996). In addition to value and novelty, she also articulates creativity in terms of the ‘conceptual space’ of a discipline. She describes the conceptual space as a ‘grammar’ which can be explored to find novelty (Boden 1996, p.82) and states that this exploration of conceptual space is often considered creative. In addition to exploration of their bounds, conceptual spaces can also be transformed. She describes ‘negating a constraint’ as a common method for transforming the conceptual space of a discipline. One of the design exercises that the students reviewed requires them to resolve a ‘transformation of the discipline through engaging with a negated’ constraint. This is the ‘inverted landscape,’ a design exercise that is discussed later.

Orienting the students towards abstract thinking may also be argued as expanding their ability to think in terms of uncertainty – since as described the abstract is open to interpretation. This increases their versatility to deal with uncertainty in the real world. Furthermore, as argued above, abstraction may also facilitate novelty and creativity, leading to innovative responses to the uncertain situations that characterise professional practice.

We argue that Reflective Practice methods and abstraction theory can facilitate design skill development in the novice. We have shown how both the Reflective Practice method of framing and skills in abstraction necessitate interpretation; and believe that this can leverage students’ existing spatial and thinking skills while retaining contextually-rich design situations. In the next section we describe how this was achieved by detailing some of the design exercises within the first year landscape architecture curriculum and its design approach to Look See Create.

**Rock Paper and Scissors: setting a design problem that develops process in the novice**

The combination of theory and methods employed in the Look See Create process facilitates sophisticated conceptual thinking through site response and technically simple design exercises. Lenigas creates situations – or design programs – of controlled uncertainty. These, in turn, provide the students with opportunities for experimentation and exploration. These design programs or ‘ill-defined’ problems are now discussed with accompanying examples of student work.
**Design exercises**

These design exercises require little domain or design expertise to support the development of conceptual thinking and a design rationale. Furthermore, although they are separate design problems all the exercises are considered as a single managed experience to introduce reflective design practice.

The overarching intent of the design briefs is to manage the increase in the number of variables students must engage with in order to resolve their design outcome. Thus both their skills at abstracting, interpreting, etc. and their design process were incrementally expanded. For example, onsite exercises and lectures were created to ensure students both responded to the site and, simultaneously, understood that they were intervening in it; namely reframing their understanding of the situation and changing the situation (for example by the use of site surfaces for presenting ideas).

Framing in the design process as well as during initial problem formulation was also evident in the dual nature of the design exercises, as these operated on both a conceptual and on a material level. The conceptual levels were supported by the theory of abstraction and by a range of exercises in interpreting and working creatively.

**WHITE ON WHITE (DESIGN EXERCISE 1)**

This is the first design exercise that first year landscape architecture design students engage with. The problem was developed to be a conceptually rich landscape architecture question that could be explored through a single variable: white paper. Thus the brief was to create a paper collage with white paper.

This ‘white on white’ design exercise requires ‘looking and seeing’ landscapes in the city to identify a meaning in that place and distil it into words. It is a process of interpretation and abstraction as well as an exercise in problem framing. The students are then required to create paper collages in white paper, on a white background, to give their chosen words visual form. The overall design exercise leads the student through two cycles of abstraction: (1) from place to word and (2) from word to form. It also leads them through two iterations of Reflective Practice and two problem re-framings. These combined elements develop the students’ creative, design thinking and Reflective Practice skills. Moreover, the exercise does not require any domain expertise (such as plant species knowledge) to engage yet it promotes deep exploration of a single variable through the constraint of a single colour and material.

Importantly, the initial studio session was in the field to facilitate live discussion and on-site analysis. This served to engage students with the site on both a spatial and experiential level to broaden their opportunities for interpretation. It also served to challenge student’s preconceptions and assumed ‘ways of seeing’ or interpreting the site. The tutors were then able to guide and critique the students’ ‘look and see’ abstractions as well as showing them different methods to develop outcomes.

The accompanying lecture material focused on core principles but without direct examples. This provided a supporting framework but not a predetermined answer, leaving the student open to generate their own solution using their own framework (and needing to justify this). As is described later, such a pedagogical approach evaluates student performance in terms of exploration and understanding. It serves to encourage iteration, reframing/reinterpreting as well as self-evaluation of design solutions.
Table 1. Summary of White on White exercise’s impact on learning

<table>
<thead>
<tr>
<th>Compared to previous years</th>
<th>Learning outcomes</th>
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<tbody>
<tr>
<td>Early focus on abstraction</td>
<td>Abstraction became an introductory learning skill instead an advanced learning task occurring only in later years</td>
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<tr>
<td>No use of direct examples</td>
<td>Previously, direct examples of prior years’ work were shown</td>
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INVERTED LANDSCAPE (DESIGN EXERCISE 2)

The second design exercise that novices undertook was a one-day charette. They were required to design a planting system for an upside down tree. While they were given a domain specific reading in advance (soil requirements), they were otherwise unprepared. To facilitate the limiting of variables, the task used the familiar structure of the pot plant as a starting point. This familiarity also challenged them to see the effects of changing a single variable (the direction a tree grows) and in turn, register the impact of their design decisions. This exercise focussed design thinking into a short time period. Tutors modelled the iterative and reflective design processes, including methods of problem reframing and interpretation, by providing examples. In addition to evoking the mentor relationship, student interactions in a charette structure also facilitates the development of camaraderie and studio culture. The process for design relied on a strong integration of sketching and modelling. This reinforces the notion that (a novice’s) existing skill set can, through rapid experimentation, generate complex understandings. Overall, this exercise embodies the core concepts of abstraction and interpretation almost literally: by challenging student thinking about what a landscape
is and should be. It provides them with additional practice at generating new interpretations and exploring design spaces in their future work rather than assuming the first solution is the best, much less the only, solution.

OFF-GRID LANEWAY (DESIGN EXERCISE 3)
This was the first formal, or ‘real’ landscape architecture project. It was intended to transition students into a design practice where they impact on a site without resorting to derivative or uncritical responses. To enable this, the exercise was structured around both an unusual scenario and a theoretical framework that would re-cast a site that initially seemed familiar to them as unfamiliar.

This recasting necessitated students to research the site and theory to allow them to find their own understanding of the situation. As a means of scaffolding students during this investigation, the project was operated as an immersive experience whereby studios were repeatedly held on site as well as requiring analysis that encouraged returning to site outside studio times.

The theory used was Foucault’s theory on ‘heterotopias’ (Foucault 1967). This was a ‘core driver’ for the project that set the foundation for intellectual discussions and research. It challenged student preconceptions about appropriate types of space, prompting new interpretations and, as argued, innovative solutions. Thus the theory informed the design problem, generating Schön’s ‘springboard’ from which the students would generate their own interpretation and expand their knowledge of the discipline and design practice.

Assessment of this task explicitly addressed the difference between the abstraction for the design framework and crafting a spatial outcome from that ‘lens’. For their assessment the students were required to present two major studio critiques. During the first, 20 minute critique (per student) they had to test and support their conceptual frameworks. Communicating at this level necessitated the collation of an extensive body of work in order to evidence their reading of spatial experience, heterotopia theory and the physical site. The process of generating and communicating ideas serves to engage students in the development and testing of hypotheses. It also helps them meet the requirement to support each hypothesis with evidence, research analysis and, ultimately, a rationale or design ‘concept’.

In the subsequent design phase, forms that addressed the concepts critiqued were submitted. This final presentation was of a single proposal that they had selected, and therefore a much reduced scale.
Table 3. Summary of Off-Grid Laneway exercise’s impact on learning

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<tr>
<th></th>
<th>Compared to previous years</th>
<th>Learning outcomes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Increased level of critique</td>
<td>Level of critique mid project was new to first year and uncommon in the discipline in general.</td>
<td>Increased discussion and targeted development of potential strategies. Enhanced inter-student learning through exposure and participation in peer discussions.</td>
</tr>
<tr>
<td>Mid-project critique</td>
<td>Positioning the primary and extensive critique during the design process rather than at the point of summative assessment reweighted the role of critique from previous studios</td>
<td>Students improved reliance and understanding of their own reflective design process/practice due to the requirement to evaluate and defend their process from its inception.</td>
</tr>
<tr>
<td>Increased on-site studios</td>
<td>Extent of time spent on site with students was significantly higher than previously</td>
<td>Students had used their own body as a reference tends to lead to heightened spatial and experiential reading of the site.</td>
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</table>
SHADOW STUDY FOR A SUBTROPICAL ROOM (DESIGN EXERCISE 4)

This last submission for the semester was the students’ introduction to using landscape spatial quality as the primary vehicle to carry the design intent. Their site was the major urban square in the subtropical capital city of Brisbane, Australia. Students were required to design an environment and experience within this site.

The majority of design effort focused on students identifying an experience for the site and then spatially defining this experience using shadow. Thus many of the landscape variables (vegetation, spatiality, microclimate, and comfort) were compressed onto the single plane of shadow. This abstracted problem space helped to avoid overwhelming the novices with the complexities of species palette, something which has the danger of resulting in derivative compositions. Students also researched the qualities of light and its effects on shadow and related this to spatial and physical comfort in their subtropical climate. Once they had developed a shadow design, students were able to interrogate its qualities to ‘expand’ it to inform the creation of the final complex landscape assemblage.

Part of this process required them to collect foliage samples and review these in terms of shadow and its components. This experimentation informed a subsequent design exercise: extrapolating the type of form that could create their desired shadow and its experience. Thus this exercise led the students from looking at the leaves and places they encounter daily to seeing these in a more abstract way by considering them in terms of experience and shadow. With this ‘lens’ students could move towards imagining a three-dimensional form that could cast such a shadow and engender this experience in their project site.

Students then worked with design tutors to extrapolate plant forms that could meet these requirements. In this way the students were able to develop sophisticated designs that revolve around the experience of landscape architecture and its subtleties of shade and temperature, while being novices in the use of a landscape palette.

The emphasis on shadow experience necessitated abstract thinking, interpretation and the interrogation of the processes of landscape architecture open to the designer. This scaffolded student immersion and engagement with complex, real-world, landscape design problems. Thus while they developed some specialised knowledge of landscape architecture, their primary vehicle for creating complex landscape outcomes was critical and interpretive thinking skills and iterative Reflective Practice methods.

Table 4. Summary of Off-Grid Laneway exercise’s impact on learning

<table>
<thead>
<tr>
<th>Compared to previous years</th>
<th>Learning outcomes</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Whole design process</strong></td>
<td></td>
</tr>
<tr>
<td>In prior years the design process was segmented. Here the variables were limited but the design process taught as a whole.</td>
<td>The design processes used here are analogous to those used in prior exercises, especially 1. Thus students could re-apply and cement their learning of design process. It also effected expansion of their repertoire and framing ‘ill-defined’ problems</td>
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Assessment

A single assessment structure was used for all the design exercises and presented at the start of the teaching semester. The repeated use of one assessment model based on the fundamental Reflective Practice of design, rather than several task orientated assessment models for each design exercise, is a deliberate choice. It reflects the focus on developing design processes rather than design objects; since in both our experiences, we have found that a specific, object oriented assessment model has the danger of being reductive and prescriptive, implying design object outcomes. It can reduce student and educator efforts to ‘ticking boxes’ and limit student efforts at interpretation that, as discussed above, is a key part of creativity. It also implies a predictable outcome. Instead we believe that an assessment model that refers to the design outcome in general terms and to the design process in explicit terms is better able to evaluate the Reflective Practice processes and the skills necessary for engagement with the uncertain real world design problems.

This particular assessment model was developed by Lenigas. It evaluates each criterion in terms of both exploration and understanding (Figure 7). Degrees of exploration and understanding are ranked along the Queensland University of
Figure 7 Assessment Criteria developed by author Lenigas focuses on the design process rather than design object.

Technology’s grading scale of ‘1’ (low fail) through to ‘7’ (high distinction) while the grade of ‘4’ is a pass. Exploration reflects the course’s emphasis on interpretation and iterative development and understanding reflects student engagement with and comprehension of content.

Five criteria that draw from the learning outcomes for this design unit were measured along this scale. Firstly, Critical thinking measures the extent of understanding and exploration of the design brief. Secondly, Design framework evaluates the rationale that the students developed for the problem at hand; something that would have been informed by some theoretical concerns such as the theory of Heterotopias or how the sun moves; or research, such as studying the site and people’s use of it. The third criterion Design resolution, looks at how critical thinking and design framework outcomes are synthesised into a unified whole and resolved and then finally interpreted to a design outcome. This is the weightiest part of the assessment model constituting almost half of the total marks at 45%. The fourth criterion is Communication. It evaluates how well the students have conveyed their design intention as well as how interesting their material is graphically. Finally, the last criterion evaluates Work practices, including student engagement with iterative design processes, studio culture (e.g. critiquing) and site visits.

The resulting effect of this assessment structure is an overall picture of where a student’s design strengths lie and what areas need improving. For example, when a student submits a derivative design solution, their score for design resolution would be low but their work practices would likely also be low because they did not iterate their
work enough. This assessment model allows the student to infer this as a correlation and consider that by increasing their work practices they may also increase their design resolution.

**CRITIQUES AND SUSTAINABILITY**

Critiques played a key part in both the design process and in assessment. For our Reflective Practice design process, critiquing is a form of reflection and evaluation and served to maximise inter-student learning by making the exploration additive across the studio group rather than isolated in individual ‘silos’: students advance their understanding of the creative possibilities by evaluating and comparing their own decisions and work against the range of ideas being explored in the studio as a whole. Furthermore, the Reflective Practice approach to critique, focusing on problem reframing and situation talk-back, enables deeper student engagement with their and peers’ work. For example, it enables them to read beyond the graphical components of the work (such as a striking shape or appealing illustration), which may be founded on uncritically applied pre-existing skills, to consider it in terms of the situation’s complexities (such as how it relates to the brief, to the theory, to the site and how it unifies these).

Formal assessment presentations were structured as intensive, group critiques. These studio activities involved all students, tutors, and also external practitioners. Prior to the critique’s commencement, we encouraged students to identify interesting works from their cohort by placing dot stickers next to their preferred designs. This allowed for student evaluative learning. It quickly becomes apparent that some works are implicitly understood as stronger than others. The tutors and subsequent critique provide a means of explaining why this is so.

Making this design knowledge explicit builds all the students’ design knowledge and capacity for self-evaluation and reflection. The process and learning also enhances student trust and ‘buy-in’ into iterative design. Ultimately this enhances the students’ passion for learning. As the students’ own desire for design knowledge and ability for critique grows, the course structure has the potential to shift from an ‘educator push’ to a ‘student pull’ or ‘student driven’ learning. This is complemented by studio cultures where students can gain from each other through mentoring, competition and shared interests and discussion rather than solely relying on the lecturers for their learning. As described studio culture is both directly facilitated in design exercises such as the charette and it is assessed through the work practices criteria. These factors have the potential to reduce the pressure on the educators, further increasing the economic sustainability of this approach.

**Reflections**

The design exercises and assessment structure shown here have been focussed on developing the creative design processes and skills in novice landscape architecture design students. In particular Reflective Practice methods such as problem framing and skills in abstraction such as interpretation were taught, in order to facilitate student capabilities for engaging with unpredictable, real-world or ‘ill-defined’ design problems. A significant point here is that these can be applied to a range of situations and not just landscape architecture. Thus we believe that our students are gaining a highly sustainable education because the skills they acquire are applicable to a range of design and professional domains.
The course described is grounded in an approach and methods from Reflective Practice and theories of Abstraction. These serve to scaffold the novice’s learning and challenge their preconceptions; moving them towards creative and innovative processes as well as solutions. Learning has been both constant and tapered: complexity and sophisticated thinking have been required from the start; while the level of domain specific knowledge has gone from very little, as is consistent with the novice, to slowly increase. While the focus of the course has been on process rather than technical skills, it is also worth noting that the level of technical accomplishment of this course’s cohort appears to have surpassed that attained by students in prior years where the course was explicitly focused on those technical skills.

While the work presented here is based only on the first initial offering of the design syllabus, it is our intention to continue reviewing its impact over several years of student cohorts. However, as has been shown, there have been positive outcomes. Thus we propose that the design process learned by our students has expanded their repertoire in qualitative rather than simply quantitative ways. For example their increased skills in reframing and interpretation allow them to take similar experiences and, using analogy, apply them to current problems. This also contributes to their versatility in dealing with uncertain and ill-defined design problems. Furthermore, as has been argued, abstraction can facilitate novelty and creativity, leading to innovative responses to the uncertain situations that characterise professional practice. In this way we are able to engage the novice at a sophisticated level and equip them with expert level skills. In developing the student’s capability to deal with the uncertain situations that characterise professional practice, these processes implicitly increase both the relevance of their education to the ‘real’ world and its sustainability.

Acknowledgements: The teaching presented here would not have been possible without the students, teaching team members and staff at Queensland University of Technology, School of Design. Special thanks to Carla Ramsland.

References


Seevinck and Lenigas

Colorado Council for the Arts, the Denver Art Museum, the Center for Integrated Arts Education, Mesa State College.


