Design as a learning cycle: A conversational experience

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Abstract

This paper examines Diana Laurillard's Conversational Framework as a method for facilitating learning in undergraduate and postgraduate courses in design. The paper focuses on the Framework's underpinning notion of academic knowledge as fundamentally second-order, and uses the case of a design course set in a commercialised, experiential learning environment to explore the implications of this in constraining broader application. By suggesting a modification to the Conversational Framework to accommodate experiential learning in a design studio setting, this paper suggests that it is more widely applicable than previously assumed. It further argues that, as an integrative cyclical process, a conversational framework does not necessarily rely on the privileging of abstract knowledge and the exclusion of experiential learning processes.

Introduction

Design education has its roots in what is arguably the oldest formal mode of pedagogy in western culture, the master and apprentice model (Friedman, 2000). Artists and designers, following this tradition, have at least since the Middle Ages engaged in dialogic, experiential and project-based learning patterns. First formalised into art schools in the 17th century, and brought into universities in the 20th, these modes of learning have generally continued unimpeded, evolving separately from mainstream pedagogical tradition. For this reason, design has largely been overlooked by educational theorists as a possible model for academic learning. However, the distinctiveness of this discipline also presents the greatest opportunity and challenge to educationalists in defining academic education.

Contemporary debate in higher education has substantially critiqued the notion of 'transfer of knowledge' as a mode of learning, and acknowledges the role of the learner as "actively engaged in the formation of their ideas" (Laurillard, 2002, p. 13), challenging traditional transmission models of delivery. As a result, experiential learning in various forms has become central to much educational policy and teaching practice (Jarvis, Holford, & Griffin, 2003, p. 57). However, experiential and 'academic' learning are often dichotomised as two distinct types of knowledge construction (Jarvis *et al.*, 2003; Laurillard, 2002). Whilst the notion of 'authentic activity' has been widely used to illuminate the importance of an experiential component that operates in support of more traditional modes of

academic learning, it is still unclear how such activity can drive a cycle of learning where the primary goal is formal, abstract knowledge.

In order to undertake an examination of this problem, Diana Laurillard's Conversational Framework is examined as a lucid conceptual tool that not only provides a detailed graphic representation of a cyclical learning process, but also explicitly relates learning to activity within that process. However, the Framework is not designed with experiential learning environments in mind and, although student activity is included, this is not presented as the driver of high-level academic learning opportunities.

Against the background of this conceptual framework, the design studio case is then described, and some contemporary educational theory is discussed. The discussion focuses on three key learning themes: abstraction, reflection and feedback, in order to explore the experiential learning that might take place in a university context. This article analyses the notion of academic learning as primarily second-order and raises questions regarding the underlying assumptions. It contributes to the contemporary debate in higher education by the extension of the Conversational Framework to include experiential learning as a potential producer of abstract knowledge.

The Conversational Framework

The Conversational Framework (Figure 1) is detailed in Diana Laurillard's book *Rethinking University Teaching: A Framework for the Effective Use of Learning Technologies*, and represented more concisely in a later article, *Affordances for Learning in a Non-Linear Narrative Medium* (Laurillard, Stratford, Luckin, Plowman, & Taylor, 2000). Although the context of its presentation is learning technology, the Framework is described by Laurillard as being "applicable to any academic learning situation" (Laurillard, 2002, p. 87), and has been used as a conceptual structure for learning by researchers focusing on both online and face-to-face learning environments (Davy & Jenkins, 1999; Koppi & Chaloupka, 1997; Hannon *et al.*, 2002; Lizzio, Wilson, & Simons, 2002). It is based on a philosophy of education that emphasises student comprehensions of knowledge structures, and builds to a dialogic strategy (Hannon *et al.*, 2002). The strategy requires that:

> It [learning] must operate as an iterative dialogue;
> Which must be discursive, adaptive, iterative and reflective;
> And which must operate at the level of descriptions of the topic;
> And at the level of actions within related tasks.
> (Laurillard, 2002, p. 86)

Figure 1: The Conversational Framework for the learning process
Source: Laurillard *et al.*, 2000
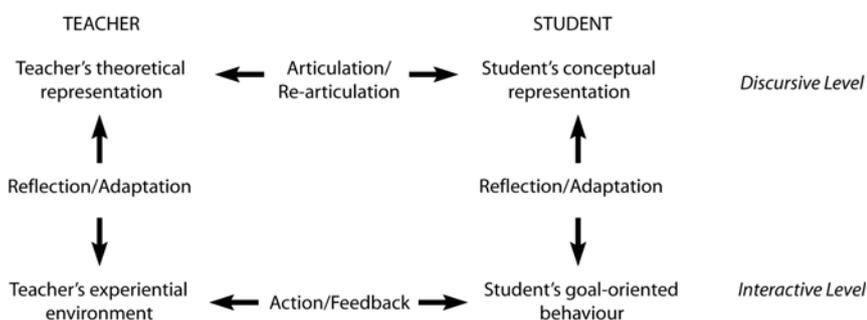
The Framework represents this graphically as an iterative process in which the teacher frames conceptual knowledge by descriptions, and student knowledge in the form of descriptions is returned. The task environment provides a forum for application in which descriptions are tested, and reflection takes place for the student as a result of these experiences of application. Adaptation also occurs as part of the process of reflecting on tasks, as a result of comparing the teachers' descriptions and the students' understanding as it is applied to the task. Also key is that the teacher adapts both their delivery of theory and the task environment as apparent (mis)understandings become evident from learner actions/articulations.

An important aspect of the Framework is this strong distinction between a discursive level (theoretical descriptions) and an interactive level (application of theory to task). The discursive level is comprised of the articulation and re-articulation by teacher and learner of theoretical and conceptual knowledge. For the purposes of this paper, I will use Laurillard's definition of discourse as:

> …the learning activity of discussion, or a medium that supports it. The discussion may be between students, or between student and teacher. Each interlocuter must be able to articulate a view, re-articulate it in the light of the other's utterance, ask questions, and reply to questions, though not necessarily synchronously. Thus letter-writing is discursive, whereas lecturing is not (Laurillard, 2002, p. 250).

Underlying this separation of discursive and interactive levels is another distinction: that is, between academic and experiential knowledge. Supporting this distinction is a definition of academic knowledge as second-order – "knowledge of descriptions of the world rather than knowledge of the world itself" (Laurillard, 2002, p. 53). Knowledge is mediated and transferred from the teacher to the student, whose role is to test their understanding and adapt to the teacher's view. In this way, the mediation and transfer of theoretical knowledge is owned by the teacher and is also implicated as the primary factor in creating academic knowledge. This is necessary because "everyday knowledge is located in our experience of the world. Academic knowledge is located in our experience of our experience of the world" (Laurillard, 2002, p. 21). The Framework is constrained to the academic, second-order world, therefore, and is "not normally applicable to learning through experience' (Laurillard, 2002, p. 87).

The definition of academic knowledge as second-order means that the principle educational goal of 'doing', or action, is secondary, a method of facilitating the learning of theory. In other words, theory must come before practice. Other writers dispute the underlying assumptions: Jarvis et al. suggest that whilst, until recently, theory was the sole province of education and knowledge was defined as theory, this idea has been challenged since the mid 20th century by writers such as Lyotard and Stenhouse. The demise of the 'grand theory' as the knowledge-base and task of the universities means that practice can create rather than follow theory (Jarvis et al., 2003, p. 7). Other writers contend that experiential learning is equally appropriate to an academic setting (Koppi & Chaloupka, 1997; Bowden & Marton, 1998). In any case, since this kind of learning is undeniably taking place in universities generally, and in design faculties in particular, it is important to explore how it might produce a kind of knowledge that could be considered 'academic'.

The case of a design studio

> More than ever, design education must prepare students for change. To this end, it must move from being teaching-centred to a learning-centred environment which enables students to experiment and to develop their own potential in and beyond academic programs. Thus, the role of a design educator shifts from that of only knowledge provider to that of a person who inspires and facilitates orientation for a more substantial practice (Icograda Manifesto, 2000).

Design education as drawn from the Atelier method is broadly experiential in nature. Established in 1919 by the German architect, Walter Gropius, the Bauhaus is considered by many to be the first design school, widely credited with creating the modern model of design education (Cheng & Liao, 2001). The school drew on traditional master and apprentice modes of art education, and the design through materials philosophy of the Birmingham Government School of Art in the late 19th century, but extended these to combine arts and technology, incorporating modernist imperatives of 'abstraction and experimentation' in workshop settings (McCoy, 1998). Although the influence of the Bauhaus model has been significant, contemporary debate around design education signals a period of philosophical transition (Buchanan, 2001; Niederhelman, 2001; Davis, 1998). Studio-based learning, once common and clearly drawn from the Bauhaus workshop model, has become increasingly difficult to define. Activity-based learning has expanded to project and problem-based learning, and the variations of teaching method, assessment practice and philosophy have multiplied exponentially. Nevertheless, the focus of design education remains an experiential learning process. Although the case that is presented is often characterised as a studio, this is primarily a reflection of the environment in which it takes place, and it is the experiential nature of the course that is examined for the purposes of this article.

The program

The design studio Professional Practice subject is part of the Faculty of Design in an Australian university. The course has been in operation for more than two decades, and currently takes up to 40 students in a mixed-discipline (Industrial, Communication and Multimedia Design) cohort of honours and masters level design students. Traditionally the majority of students have moved into the course from the internal undergraduate programs, but students from external (national and international) undergraduate design courses and students with non-traditional educational backgrounds are also entering at honours level. There is a start-of-year and mid-year intake, and entrance is determined by interview.

The course takes place in a single teaching space within the Faculty building, which is exclusive to staff and students. The Director, and teaching and administrative staff all have offices within the design studio. Computers and software are provided, as well as administrative support, telephone, fax and 'business' email addresses. Operating within a design studio environment, the participants in the course undertake commercial, pro bono and internal design projects in communication, industrial and multimedia design.

The course aims have been broadly encapsulated (in course documentation) as:
- providing a professional learning environment that mirrors industry design and management practices

- providing a rich variety of real-life project experiences within authentic, open-ended problem-solving situations
- promoting collaborative and cooperative working attitudes in a safe, team-based learning environment
- supporting the development of conceptual design competencies and understanding of complex visual communication strategies through applied design research
- facilitating reflective attitudes compatible with lifelong learning and the confident engagement with new experiences
- supporting entrepreneurship, innovation and professional development with opportunities to extend personal experiences.

Students attend the studio three days per week, from 9 to 5, and work two 20-week semesters. Projects are undertaken in teams that comprise from two to ten students, and may be single or multi-disciplinary. Projects are always developed in stages, and students may move in or out of a project more than once before it is completed. To complicate matters further, students are rarely involved in only one project – depending on workload, they may simultaneously be involved in up to four projects that are in various stages of the life cycle. In those projects, they may be team leader or team member, and have responsibility for conceptual design, technical production or project management. Students simultaneously undertake a discipline-specific subject in a more traditional project-based mode.

The subject of this immersive environment is those processes and interactions that are part of the business of designing for others, what Cross (2001) refers to as the "tactics and strategies of designing". Whilst students are expected to have some practical and theoretical understanding of their design discipline as aesthetic and visual communication, and be able to execute design projects in these terms, the primary discourse is around contextualised design processes and critical reflections of the interactions between designer, client, market, and design teams. There is a philosophy of design as professional practice that rests on communication, value and usability of the product. This is implicitly promoted within the subject, but it is primarily articulated in conversations with clients in distinguishing this approach to design from design as aesthetic or as creative expression. This is as much a function of professional practice as an educational aim, couched in those terms, and is open to student debate.

Over the first semester of enrolment, students in the course are heavily supported by staff and, although they attend meetings, they have limited independent contact with clients. They also work in teams that are larger than would be required to execute the project in professional contexts, resulting in closely defined areas of responsibility. As students become more confident and knowledgeable about professional design management processes and develop their communication skills, they gradually take over the client contact and management of some or all aspects of projects, and the number of projects they are engaged with at any one time increases, whilst the size of the team reduces. The aim is to minimise personal risk for students – to provide a 'safe place' in which they can develop personal confidence. With each iteration of project engagement, students are given more opportunities to make individual choices and have independent control over the process. It is intended that this gradual hand-over prepares students to undertake their own practice or enter employment in a commercial design studio by providing them with a relatively holistic understanding of design practice, and reflects an emphasis on the tacit knowledge developed by experience.

This course is clearly and explicitly experiential, and is occurring in a university setting. What's more, it is occurring at the more senior undergraduate level. It is important, therefore, to examine the possibility that it is appropriate for 'academic' learning. In order to do so, a discussion of some of the contemporary theory around experiential learning is contrasted with the thinking that underpins the Conversational Framework. This is by no means an exhaustive survey, but opens the debate to a specific case and raises some significant questions about the idea of university learning. Some of the contemporary debate about the positive relation of experience to abstract knowledge will be examined, followed by further discussion of two specific areas that are deeply embedded in the learning and teaching philosophy of the course, and also in the Conversational Framework: reflection and feedback.

Experience as a producer of abstract knowledge

The possibility that this kind of integrated environment, which places experience at the beginning and at the core of learning, might also be a primary producer of abstract knowledge is not explored by Laurillard's argument. The possibility is forestalled by a statement that knowledge has to be "represented formally to become generalisable and therefore more generally useful" (Laurillard, 2002, p. 16). However there is contemporary debate to support the notion of practice as an equally valuable producer of high-level learning. Koppi & Chaloupka (1997), drawing on the Kolb learning cycle (Figure 2), agree that experience is fundamental to building integrative knowledge, one of the key criteria of high-level thinking described by academic teachers (Laurillard, 2002, p. 12). Of course, integrated knowledge is not the same as abstract knowledge – the former relies on the synthesis of ideas from a number of domains, whilst the latter is a function of decontextualisation of those ideas. However, these are ideas connected by the notion of knowledge produced from, and useful in, multiple contexts, and it can be argued that neither are reliant on descriptions of the world as their starting point, but can occur equally in experience (Wenger, 1998, p. 48). Wenger argues that learning within practice produces powerful abstract knowledge, and that the process of 'doing' practice within a community produces negotiated discourses that often go unrecognised but are no less valuable or rigorous (Wenger, 1998, p. 48).

Figure 2: Kolb's learning cycle
Source: Jarvis et al., 2003
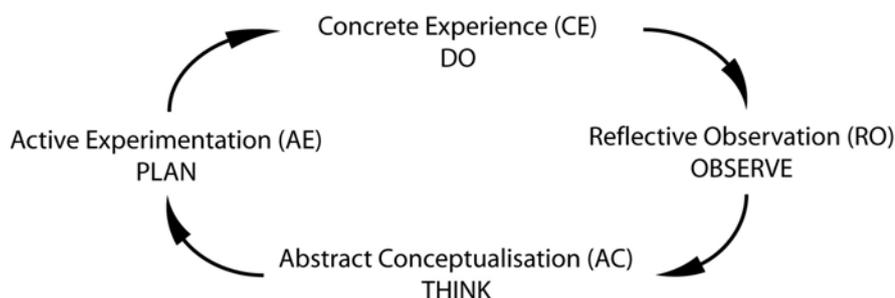
Within the studio course, as students undergo several learning cycles through projects and project stages, their experiences also occur in multiple contexts as the number of projects in which students are involved expands, and each situation shifts expectations. Crucially, understanding is tested by the range of interdependent and sometimes minor factors that are altered within the stages of a single project and across several; any new input will change the dynamic of a project and the requirements of the team – a new client, a new team member, a

revision of priorities, a suggested change to design, a new understanding of the user – all are significant. Implementations of understandings which may be perfectly valid in one context are challenged by a new context which is superficially similar.

The abstract knowledge that is drawn from these activities is not provided prior to experience, and does not exist external to the practice. It is driven and explored through experiences, and is organic as a result. In each project iteration, the cycle of testing understanding within experience, and experience within understanding, is completed many times, and includes peers, clients, teachers and shared reflections on process. The articulation required as evidence of abstraction and understanding occurs both through visual and process demonstration, and verbally, within team meetings. Students display increasing confidence in dealing with alignments of design with intention, the resolution of team and client relationship dilemmas and inconsistencies, and articulating learning.

Reflection

In developing an idea of experiential knowledge as a ground for abstraction, the concept of reflective practice is a valuable tool. Within the Framework, the connecting tissues between discourse and action, comprised of reflection and adaptation, are a means of developing abstract knowledge. Facilitating students' examination of their own understanding against both the evidence of experience and the reflections of others is a powerful tool for supporting deep learning and academic rigour. Maclellan (2004) describes this critical reflection as an appropriate "goal for all in higher education". Students provide evidence of a sophisticated level of reflection 'in coordinating understanding and evidence' and taking a questioning stance (Maclellan, 2004, p. 76). It is the cycling through multiple applications of discourse and experience, where reflection is the catalyst for change, which creates opportunities for deep understanding. This is the case whether the starting point is experiential or formal, teacher or peer-led.

It is intended that students graduate from the studio experience with tools that will allow them to flourish in an industry setting and be confident about their own decision-making, particularly when conflict or ethical situations arise. This relies on the course providing them with transferable skills and practices that will enable application of knowledge to any situation. They should not only be capable of understanding the discourses and undertaking related tasks, but also of reflecting critically on both to understand inter-dependence and question inconsistency. The learning process in the course utilises the notion of reflective practice to support both the questioning of discourse in task, and the questioning of task in discourse.

In order to achieve this, students are required to be reflective as a matter of daily engagement in the studio environment. As a design project progresses, reflection is undertaken in order to develop, refine and present work to others. Students are encouraged to act on reflections in adapting their process or understanding on a daily basis in order to further examine situations or concepts of which they are unsure. Students submit written reflective reports related to project stages that are articulations of the process of experience, reflection and change, with the aim of encouraging students to identify their learning and areas in which they require further experience. In the same way as abstractions are made evident, the outcome of this process may be in a written or verbal form, but is also found in the visual narrative of design development.

Feedback

The Conversational Framework incorporates feedback into the cycle explicitly as 'feedback on action', and it is also implicit in the re-articulation phases of the discursive level, where the teacher re-describes or clarifies student articulations. However, it is important to note that the feedback is tied most strongly to activity rather than descriptions, and in this manner it is embedded in a concept of experiential learning. The reason for this value-laden situating of feedback within interaction is the separation of two kinds of feedback: extrinsic and intrinsic. Extrinsic feedback is described by Laurillard as an external 'comment on an action', and is thus situated in discourse. A teacher's assessment of work as 'good' or 'bad' is both extrinsic, and thoroughly unproductive. Good extrinsic feedback is constructive: for example, describing the reasoning behind a value judgement, or providing guidance as to how the learner might improve. Intrinsic feedback, by contrast, is that which is a natural consequence of an action and is situated within it: for example, in design, an example of intrinsic feedback might be the discovery, by testing, that a design concept cannot be produced in the manner expected, or simply fails in its function or objective. The distinction also maps directly to conceptions of objective and subjective feedback familiar to all teachers. Extrinsic feedback has characteristics that reflect subjectivity – it is social, symbolic and external to the action. Intrinsic feedback is natural, immediate and unmediated – reflecting the aims of objective feedback (Laurillard, 2002, p. 56).

Interestingly, the notion of feedback is absent from much of the discussion on experiential learning. The focus instead is on assessment, although that may be formative or summative, formal or informal. This reflects an ongoing difficulty with the quantitative requirements of a university degree, and a concern that the teacher is in control of learning (Jarvis et al., 2003). Given Laurillard's description, it is clear that good (intrinsic) feedback is primarily concerned with student learning, not with teacher intervention, and although it may be a result of informal or formative assessment, it is not reliant upon it. Although the teacher may use feedback as a method of improving student understanding, intrinsic feedback is situated within the action of a student, not in the assessment of their actions by a third party. In other words, where the learning situation allows for it, feedback will occur as a result of student actions, with or without the teacher's assessment of progress. This is not to deny that the teacher's role in providing assessment, guidance and appropriate frameworks for actions is important, but it does disrupt the idea that feedback is inherently tied to mediation.

Embedded in the studio course philosophy is the notion that intrinsic, formative, feedback occurs constantly for students as a result of processes attempted, ideas revised and new attempts made at a resolution or understanding of the distance between anticipated and actual outcome. The natural consequences of actions that are unreflective or inconsistent are visible to both the student and the teacher – artwork that won't print or doesn't follow through on intention, client confusion or disinterest in presentations, files that can't be found, or teams that become difficult to operate within. It is also an awareness of this feedback, and reflection on feedback, that is reviewed in summative assessment as a measure of learning and abstraction. The teachers' role is in illuminating the intrinsic feedback that is occurring and allowing students to make mistakes so that intrinsic feedback supports a deep learning process.

In contrast, extrinsic feedback occurs primarily in areas where students are not assessed and that are officially outside the scope of the subject – design direction, quality of artwork, technical ability, understanding of design discourse, theory and

history. These areas receive attention in day-to-day conversations, and are verbalised in feedback that may come from clients, peers or teachers. As Laurillard points out, this extrinsic feedback is situated within discourse, being a secondary and external reflection on actions and articulations. These areas certainly add to the richness of the learning experience, but they are outside of the official subject scope and are unmeasured, specifically because of their location in dominant discourse. It is intended that in this way students are empowered to develop their own views and, with the removal of summative assessment from the discursive level, there is no requirement for students to take on the views of the teacher in order to get a good grade.

Conclusion: the Conversational Framework as an experiential learning model

The Conversational Framework provides a valuable visualisation of a learning process that allows students to develop understandings through cycles, rather than a linear/uni-directional progression through levels of difficulty. Although the Framework starts with a supposition about the nature of academic learning, and its distinction from experiential learning, it includes the key features of both. Articulations, reflections, iterations and adaptations are all present and are applicable to any learning situation. If we do not dichotomise, but think of the learning process as contextual, inter-dependent and fundamentally about both first and second-order knowledge, it is possible to explore any possible permutation of the elements and to retain the quality of learning and the level of thinking required for 'academic' learning.

The experiential learning process in the studio course suggests that Laurillard's clear distinction between discourse and action may be overly prescriptive – that formal knowledge could be an understanding of the nature of doing that is illuminated through the doing (Wild, 1998, p. 51), rather than the nature of knowledge. Although it is possible to fit the Conversational Framework to an experiential learning situation, the process of iterations that take place in the course suggests a slight modification to the Framework (Figure 3). In this modified framework, the 'interactive' level more clearly supports the interactions between discourse and practice, and the 'discursive' level emphasises the discussions that take place to contextualise and explore both task and theory. Although the teacher may still occupy the position of expert, their ownership of theory is no longer the starting point for learning, allowing students to more naturally take a questioning stance and diverge from the teachers view as experience develops their scaffold of knowledge. This is characterised as an 'equal value' conversational framework in order to emphasise the strength of its relevance to an integrated learning environment.

By including an experiential learning process so thoroughly integrated in the cycle, this model suggests new applications and indicates the potential for a conversational framework in design education and other experiential learning environments. In this cycle, as in Laurillard's original, reflection and articulation are present in constant iteration between descriptions and applications, creating opportunities for teachers and students to revise or expand their theoretical viewpoints and the way they approach activities. While the student adapts discourse to task and compares this with the adaptation of task to discourse, the teacher and student are involved in a process of contextualising and exploring both

practice and discourse in relation to one another. In practice, every project has the potential to open up new discourses for student and teacher, and adaptation is elevated from its position as a response to reflection, to describing the constant learning process in which this is taking place. In this process the adaptations are the learning process, and can be articulated or practised as befits an experiential integration of knowledge.

Figure 3: An 'equal value' Conversational Framework for the design studio
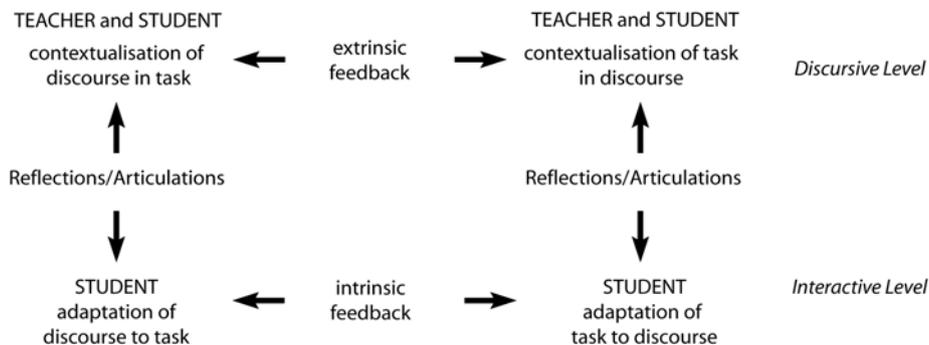
Reflection is also more broadly distributed in this cycle as a process of articulation that informs learning. The notion of critical reflection is deeply embedded in a process that first contextualises a task or a discourse, and then allows the student to apply or test that contextualisation. Misalignment of either provides a prompt for questioning the initial contextualisation, and provides support for critical reflection. The potential for the teacher's role in this model is as a presenter of options – a project brief is presented as a set of problems, or a context, and the student is encouraged to research against assumptions by contextualisation, and to test through application. In each iteration, the nature of the problems becomes clearer, or new problems arise. Articulations of the process allow students and teachers to reach agreement about the end point of the process, but it is potentially open-ended and does not need to be agreed to be valid as a learning experience. It is this open-endedness that provides its closest alignment with the ideal of the design studio, in which students are empowered to be independent thinkers and have the tools and desire to remain critical thinkers beyond their academic education.

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