Design Learning: A Reflective Model

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Abstract: In response to the changing university context, a model for the teaching of Interior Design was developed. Traditional lecture/project-based tutorial structures are replaced by an integrated and interactive model. Aimed to address the demands of the contemporary context, while enabling meaningful learning, it has proven to have much potential. The Model is introduced firstly, by outlining a learning strategy, secondly by describing its structure and content, and thirdly, by identifying key aspects of the learning context. Its achievements are also presented, while acknowledging aspects that could be improved. It offers an innovative alternative mode of learning and teaching interior design.

Keywords: *interior design, environmental design, design education*

Contemporary Australian university resources to service classes have reduced over the past decade (King 2001) This has impacted on funding, the number of fulltime and part time academic staff and the availability of teaching aids and support. As well, the differences among contemporary students with regard to age, work commitment, learning styles and attitudes are much greater than in the past (McInnis 2002; Bowser et al. 2007). The old and tested ways of delivering and engaging with discipline and other substantive areas of knowledge are being stretched to the point where they are in danger of being ineffective and, in some cases, even irrelevant. For these reasons, during our Faculty restructure, it was essential to re-evaluate and redesign our approach within the Interior Design undergraduate program, rather than simply adapting and refining our existing traditional strategies.

With this in mind, and with the overarching aim of delivering core content more effectively, a new approach to teaching Interior Design was created. This approach is referred to as a model because it encapsulates a mode of delivery, studio structure, as well as the learning context in which students and staff interact to facilitate learning. In addition, The Model to be discussed can potentially be integrated into a range of Interior Design units as it provides an adaptive educational framework rather than a prescriptive set of rules.

The development and implementation of The Model considered two broad areas of concern: a) the application of optimal learning strategies and principles; and b) the changing educational context in which contemporary students operate. The paper outlines the learning strategy and describes The Model before giving an overview of characteristics of the learning context and The Model's achievements. It is the purpose of this paper to describe this prototype model which promises to become the basis for best practice within the Design discipline and beyond.

1. Learning Strategy

Through the studio, students of design are exposed to a number of learning experiences which focus on two key aspects. The first is learning *how to design* by engagement with a process of designing or a suite of possible design methodologies. The second is to reveal knowledge about concepts and/or situations *through the act* of designing. Over a four year program, the emphasis shifts from facilitating an understanding of design and designing to focusing on the ability of design to reveal new understandings and challenge societal norms. This shift in focus recognises that students commence their undergraduate studies as novice designers.

Their lack of knowledge about designing, and the associated principles of design, initially makes it difficult for them to understand the concept of design and designing as a practice. In contrast, all students have experiences of the built environment as users and inhabitants. As a result, their understandings and everyday experiences can be used as a starting point to inform what is to be designed (for example, homes, schools, restaurants), the relationship between people and environments, and the associated design processes.

Two theoretical frameworks—hermeneutics and C.S. Peirce's logic of inquiry—complement this evolution of understanding. In addition, they provide a means to investigate the learning cycle. Firstly, hermeneutics, according to Gadamer (a founder), is an approach (rather than a method) which aims to reveal conditions that facilitate understanding—and is linked to *dasein* or 'being-in-the-world' (Debesay et al 2008). It takes into account both the learner and his/her context.

Hermeneutical understanding of a concept or practice—in this case design and designing—can be achieved by exploring and interrogating the parts in relation to the whole: and similarly, the whole through insights into its parts. The design heuristic (Heath 1984;1993), through which we come to understand the situation, project, or problem by engaging with it, is enabled by this process. Our existing understandings (or prejudices) of a situation are challenged or moulded as we are exposed to and work with parts of it.

As Debesay et al (2008) explain, when we attempt to make the unclear clear, the supposed misunderstanding is filtered through this exploration of the parts and whole (the hermeneutic circle) and we come to see the situation as a whole differently. In addition, the interplay between the parts and the whole helps a situation's essential qualities to be understood in more depth through our engagement (Ziegler et al., 2006). When designing, understanding is typically developed and represented interactively through making and drawing. As Gadamer et al. (1992) states, current understandings are based on our prior understandings. In addition, how we perceive something will be used or is applicable influences what we understand it to be (Debesay et al 2008; Peirce 1998/1923). By generating drawings and models, for example, the student can communicate with him/herself, peers, and teaching staff to reveal understandings and misunderstandings as they evolve. Thereby students (and staff) are also challenged to see their past assumptions and understandings in light of the new and emerging understanding as these evolve and to grow as beginning designers.

Insights can also be gained by interrogating an object, situation or process from different perspectives. Provisional beliefs about the something are challenged and repositioned in new ways. However, at any point, we operate 'as if' the current situation is real (Peirce, 1998/1923) and this implicit reality is the immediate context for all subsequent action (Shank and Cunnungham, 1996). With each additional vantage point, there is potential for further understanding. Therefore, a teaching strategy that facilitates interactive engagement with both the process of designing and design from multiple perspectives potentially enables understandings and innovation through the lack of prescription and in-built reflection. Peirce's *logic of inquiry* (Peirce, 1998/1893-1913; Kelveson 1998; Smith 2000) embraces the placement of unlike things together to generate new insights: their emergence is facilitated as they exist in the ill-defined liminal zone between more defined domains—in this case bodies of knowledge, methods and/or practices pertaining to interior design. By embracing hermeneutics and the Peircean logic of inquiry, the intention to liberate students from any one dominant paradigm is achieved. It facilitates students to explore, experiment, and propose provisional definitions of design and designing.

Therefore, the process of designing and the domain of design (the whole) were interrogated by our staff to identify a suite of possible strategies, methods, and concepts that inform and/or constitute the practice as well as an understanding of what interior design could be. In other words, a suite of parts (in hermeneutic terms) was generated. Within The Model (outlined below), students are encouraged to explore these parts interactively within the context of Interior Design. Such understandings, as they evolve through drawing and making, become tangible representations of ideas, and this *speaking aloud* as opposed to just *speaking silently to oneself* helps clarify the issue or idea potentially embedded in such texts (Weinsheimer, 2004), and therefore, the articulation of their applicability. As hermeneutics does not privilege one interpretation over the other, the aim of The Model is that the student will subsequently construct or generate their own process: one that is appropriate for the design project or situation as a whole. It is assumed that as the students mature in their design practice, the degree of coherence between staff, practitioners and students' understandings of designing will evolve to become closer although potentially distinct.

An appropriate foundation for a learning strategy for interior design students is thereby generated. It aims to facilitate understanding by:

a) deliberately interrogating both the parts and the whole in relationship
b) taking multiple vantage points while recognising the ill-defined boundaries between known domains
c) the generation of tangible open representation of ideas
d) creation of activities that maximise engagement through their perceived applicability.

As a result, a strategy to foster applied, active, and engaging learning (AAE Learning) was developed. The strategy also enabled us to address the diversity of learning styles within the student cohort while fostering the development of generic skills such as self directed learning and critical thinking. These characteristics constitute the learning context and will be discussed following a description of The Model.

2. The Model

Our previous studio format generally consisted of a lecture (or seminar) followed by project lead studio-tutorial for 6 hours/week. Tutorials typically centred around one to one interaction where staff and the student (or project team) discuss the student's design work. The new model differs from that unit delivery mode in three key areas: the organisation of classes, the establishment/recognition of key design concepts as core content, and the supporting resources. (The content of a typical week is provided in the Appendix.)

2.1 Class Organisation

Lecture theatres at universities remain the main mode of delivery, due to the concentration of audio visual equipment, and the increased size of individual classes. However, this did not always allow for a responsive or flexible environment when teaching design. Therefore, the model demanded a less formal, more collaborative approach, with smaller student groups. It was decided that content material would no longer be delivered in a lecture theatre but in a design studio setting through activities and Guidebook (Refer 2.3). This learning environment, then, replaces the traditional university lecture/tutorial format. Weekly, four hourly sessions – broken down into four by fifty minute sessions - are the teaching/learning focus of the model.

To overcome the impact of increasing numbers in the studio (approximately 80-90), students are divided into three groups for the first three hours of the studio session. Each of the three content strands (that is, tutorial sessions explained below) is conducted by two tutors (acting as facilitators) who rotate through the three groups. The last hour of the four hour studio class is dedicated to consolidation and integration so that students have a holistic understanding of the issue being explored.

Short, sharp, experiential learning activities characterise the strands. This strategy is in strong contrast to the original, passive lecture mode that many students chose not to attend (when, for example, submissions from other units were pressing, or because of personal commitments - such as paid work). Student attendance in this model is designed to be high as these active sessions are the conduit of key concepts/core material. The subsequent Consolidation session is equally important in assisting the student to integrate theory, application and skill.

2.2 Content Organisation

The content is driven by two overarching themes - or core concepts - of the design process itself. (Refer Figure 1). The first relates to essential substantive knowledge and skills (labelled and conceptualised as Design Language); the second to a way of thinking within the design process (Abstraction). Weeks 1-7 focus on the Design Language, while Weeks 8-13 focus on Abstraction (while still considering and applying the Design Language).

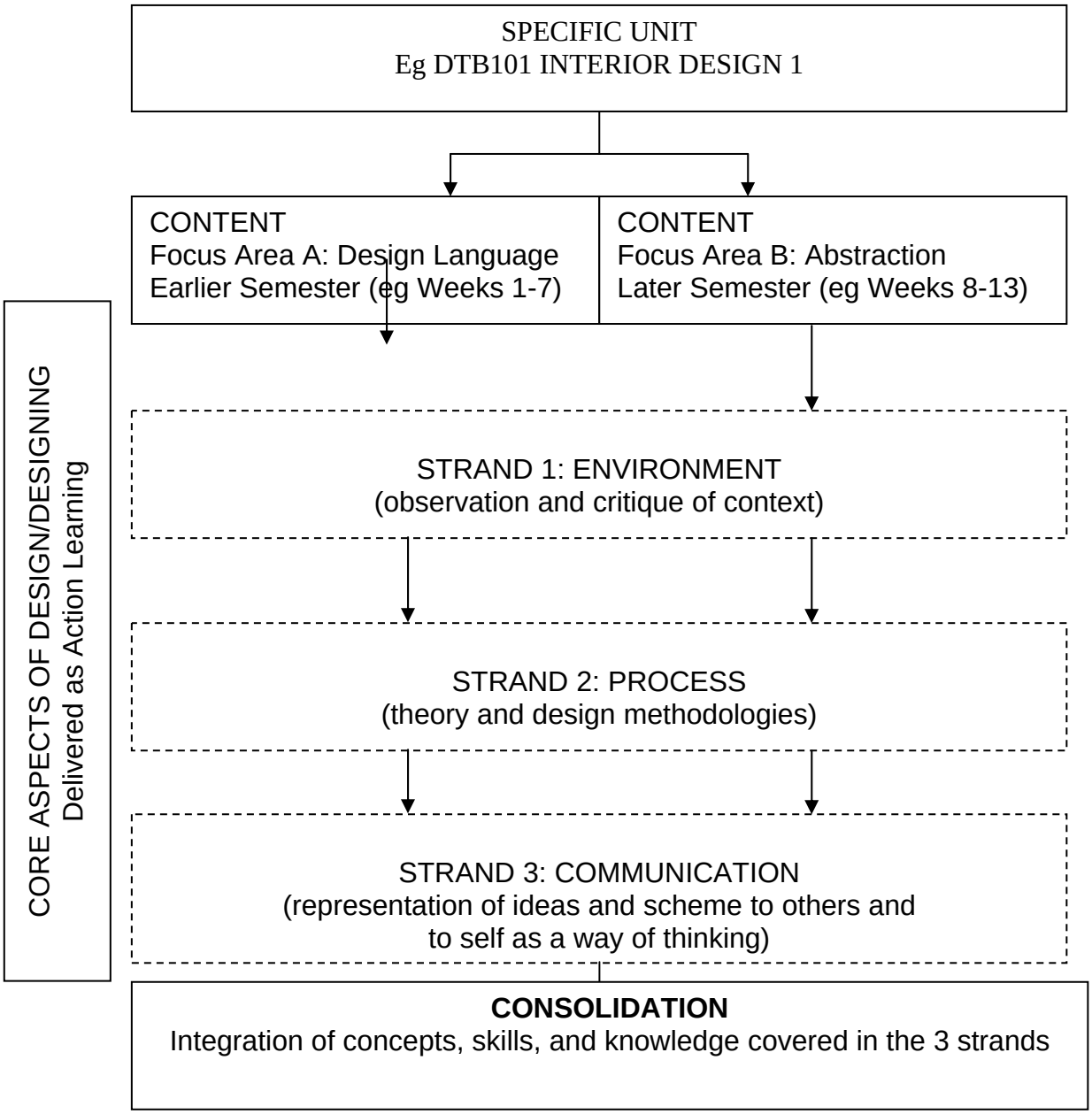
Each of these concept or content areas is delivered through three interactive strands – Environment, Process and Communication – as explained below:

*(a) Environment Strand***:** an introduction to the importance of Nature as a teacher of the fundamentals: the elements and principles of design. The ability to identify, critique, describe, and represent these is the focus. In addition, the relation of the individual aspects to the whole is explored (e.g. the interdependency of a vein to the leaf; leaf to the branch; branch to its tree; and visa versa). These ideas are discussed in relation to the built environment during the consolidation sessions.
*(b) Process Strand***:** an introduction and exploration of the techniques, issues and modes of thinking commonly used when designing. Relevant theory is introduced to facilitate the exercises. The focus is on the process, not on the completed work.
*(c) Communication Strand***:** an introduction to a variety of techniques of visual communication, particularly two dimensional representations, in the context of design language and the process of abstraction.

Each strand, therefore, focuses on a particular aspect of the design process (eg critical thinking, creative processes), to assist the student to engage deeply with the core material (eg design methodology). The Consolidation session brings all students together to explore the integration of the content and skills covered in the strands and Guidebook. The focus is on integration, reflection and consolidation. The application of these to design, and particularly to project work, is raised.

This core material is related to two specific design projects. The first is a group project - an 'Assemblage installation' - focusing on the understanding and application of the Design Language. Each group's assemblage is made from urban recycled materials and is located along a major walkway adjacent to the river in the Brisbane Botanic Gardens. The design explores and captures the concept of connection, which also encourages the students to

investigate the natural context in a more holistic way. The second is an individual Set Design through which students are able to demonstrate their understanding of abstraction in



NB: Session times are 50 minutes (for example)

Figure 1: Typical Unit Structure

association with the design language. This concept was generated from one of the social or cultural issues such as gender, power, or identity embedded in the play *Summer of the Seventeenth Doll*, by Ray Lawler.

2.3 Resource Materials

Several core resources support the strand exercises: the unit Guidebook, a student Process Journal, Visual Diary, and the Online Learning and Teaching (OLT) website.

The Guidebook: Most importantly, the Guidebook, which includes all substantive content and weekly readings, enhances student learning. It functions as a reference tool, and also supports the new studio format. In this manner, although replacing the content of the traditional lectures, it is not a text book or a recipe book to follow and generate the 'perfect design'. Instead students can revisit past concepts in new situations, forward plan to develop the design projects by applying and developing key concepts, and integrate substantive knowledge into the new situations presented.

In order for students and staff to engage in the studio format, the substantive content is not seen as 'stuff' to learn, or to circumvent and be addressed later. The learning occurs through focused engagement with the material which, in turn, is seen as a resource to be critically selected, reviewed, and interrogated through the activities. The design of the Guidebook is, therefore, critical in encouraging visually-orientated design students to access it in a meaningful way. It also ensures that students from other disciplines, who have divided commitments, or those with differing learning styles and attitudes, can access the material at any time, for any purpose, outside university hours. It is a vital tool and a resource beyond the limitations of a textbook.

*The Folio***:** The Folio includes all student exercise responses, projects and reflections, visual diary, process journals and project work. It is submitted in the final week of the semester.

*Process Journals***:** The Process Journal includes all exploratory and reflective work in response to the activities introduced in the strands and in relation to the set projects. This enables the student to externalise their processing and both student and staff to subsequently use it as a basis for reflection. This activity encourages core design skills as well as generic capabilities such as self evaluation and reflective practice. We have found through experience that, by referring to the Process Journal, we have a more substantial and informed basis on which to evaluate the final work. In other words, it is a tool that facilitates both student learning and staff /student engagement.

*Visual Diary***:** The Visual Diary is a vehicle to record and to graphically critique the physical surroundings. Through this means, students develop skills in drawing and visual representation.

*OLT Site***:** The Online Learning and Teaching site provides a means of disseminating information and additional instructions can be given throughout the week. Critical readings and references are also available on the site. To date, (and surprisingly) however, students have indicated their preference for hardcopy guidebooks and face to face interactions with peers and staff.

All of these materials support student-initiated Self Directed Learning Sessions. These sessions involve the exploration of the weekly content and the application of the theory to the projects. In addition, students engage with the material to suit their own learning needs.

3. Characteristics of the Learning Context

The contemporary student, whose life is often fractured between work, family commitments, personal issues and study, contributes to the nature of the context in which they learn. Curriculum Design requires cognisance of the way students learn and how these outside pressures can influence attitudes and abilities to engage with material and processes. Critical characteristics which constitute the learning context of The Model include: applied, active and engaging learning (AAE Learning), recognition of learning style diversity, and the development of generic capabilities which will now be outlined.

3.1 Applied, Active and Engaging Learning (AAE Learning):

It is well described that passive learners do not engage fully with content nor reach deeper understandings. For example, after only 15 minutes concentration levels decline and the student learns only approximately 50% of what is delivered in traditional lecture format (Ali, 2005). In contrast, 70% of what they say and 90% of what they say while doing is remembered (Ali, 2005). Active learning involves an environment which facilitates students to build, test, and repair their understanding of what is being learned (Michael, 2007). Many academics have sought ways to maximise learning through activities that support engagement: strategies such as personalising learning, expanding activities beyond the classroom, using student first hand experience of complex issues, and targeting 'whole person development' (Robinson and Kakela, 2006). The aim is to foster students as active knowledge receptors, and in addition, knowledge constructors (Ali, 2005).

The Model described above incorporates AAE Learning by explicitly introducing students to the typical processes of designing in one strand and then engaging them in complementary activities in the other two strands. Activities include drawing, making, debating, photographing, interacting, and evaluating the environment. This approach incorporates diversity, exploration, and consolidation, as the student learns about designing by designing and critiquing design from the different perspectives of the three strands.

Figure 1:

Of further import to AAE learning within The Model is to ensure that students are undertaking each activity in each of the strands within a specific time limit. This means that there is significant momentum to produce the work. This leads to increased pace and reduces the time needed to produce tangible outcomes. In the design studios completed to date it is evident The Model helps to:

- build confidence in the majority of the students, enabling them to readily embrace the activities and to 'have a go',
- expose them to their own process and their outcomes, thereby normalising interaction, generating ideas, and exploration,

- expose them to others' work, enabling them to peer teach and to learn, with the potential result being an increased understanding and better outcomes, and
- enable students to also develop better group skills and improved interaction as many exercises are undertaken in pairs, teams or individually, at tables where others are also creating or exploring issues.

3.2 Student Diversity

The content of Interior design is not only spatial issues but moves beyond the vocational thrust of practice-based tasks to embrace deep understandings of the complexity of contemporary situations – psychological, social, cultural as well as physical—two approaches which are often seen by other programs as separate (Vischer and Poldma, 2003). Therefore, how is it best taught to a large cohort of students?

Different types of learners are present in a design studio. For example, Demirba and Demirkan (2003), describe four learning styles. These are: (i) *Accommodating learners* who work in an intuitive, trial-and-error manner but instead of their own analytic ability, they rely on others for information; (ii) *Diverging learners* who although they can synthesize and/or assimilate a wide-range of totally different observations are inhibited by theoretical depth; (iii) *Assimilating learners* operate symbolically and abstractly rather than the considering the practical implications; and (iv) *Converging learners* who are logical, pragmatic and unemotional learners who focus on the things rather than people. With this is mind, the model seeks to offer a breadth of experiences and opportunities to bring one's own approach to play. The studio context of The Model promotes the integration of abstract theoretical approaches applied to artificial settings through practical, hands-on experiences. Thereby, the students' focus is also toward learning design theory through active engagement and acquiring the necessary skills both in class, through self directed learning, and through reading the accompanying Guidebook as a source for information, stimulation, and theoretical content.

3.3 Generic Capability Development

The Model's structure (eg. self directed sessions) and associated activities structure (eg. group work, non-product focused exercises) emphasize deep learning through the integration of content, process and application. The intention is to assist the student to critically reflect, and to propose future actions based on consolidated knowledge. Generic capabilities are thereby foregrounded as part of the curriculum design.

One example targeted is critical thinking, which involves both high order thinking skills and knowledge because it involves exploration, interpretation, evaluation and judgement (Kurfiss in Ali, 2005). Critical thinking occurs if students engage with the information when situations have the potential for more than one answer (Adams, 2005)—an inherent aspect of designing. Alternative approaches are identified and integrated, including problem-solving techniques, social considerations, hypothesis testing, as well as experiential learning. These approaches align with the characteristics of designer, design task, and design process (Stumpf and McDonnell, 2002)

Teamwork is another, essential generic skill in a contemporary world. In addition, design demands processes that embrace ambiguity and flexibility as well as the integration of discipline knowledge from a variety of disciplines. In addition, designers must relate not only to all their specialist consultants, but also to their clients and, hopefully, to prospective users as well. Students are situated in smaller tutorial groups where they can observe the realisation

of others' understandings through the drawings and models they create. They collaborate in pairs and small groups, as well as participating in Consolidation sessions which involve the entire class.

The Model provides tasks and opportunities that explicitly encourage reflection and application to professional situations embedded in complex and evolving design issues. Students are encouraged to reflect through visual diaries, process journals, discussion and project development and resolution. Due to the nature of the strands and the evolving design projects, student learning inherently involves a focus on process, where reflective learning, awareness and evaluation are integral.

4. The Model's Achievements

This paper has outlined one approach to tackle the education of undergraduate Interior Design students. The Model and its associated learning strategy and learning contexts were outlined to demonstrate how re-evaluation of accepted ways of delivering and engaging with the substantive areas of knowledge, can generate an innovative alternative. It addresses key learning goals while recognising the changing educational context in which contemporary students operate.

The major advantage identified by the students was the studio rotation, which covered a breadth of information and maintained interest: '…keeps lessons interesting, it breaks up the time and prevents you from getting bored. FANTASTIC – allows you to get to know more tutors and all the activities are related: love the hands on approach.' And: '…I like being challenged to try different ways of approaching design fundamentals'. Formal evaluation was carried out via ongoing staff reflection and formal student analyses of the unit delivery, using various evaluation instruments: PMI (Plus, Minus, Interesting), KWL (What you know/what do I think I want to know/ what have I learned/how can apply or add to what I have learned?), and Focus Groups. Information gathered is vital in helping to determine future development and refinement of the model. During Weeks 7-8, students were surveyed to gain their insights into the limitations and successes of The Model. In addition, two focus groups were organised to examine specific issues identified by the staff. All evaluation was facilitated by an independent research assistant to ensure that students did not feel compromised by the feedback process.

Critical reflection by the staff was inbuilt into the structure of the unit. Each week, staff worked in a team of two, so that reflection occurred at the end of each session within each strand, prior to facilitating the next session. This allowed immediate refinement and adaptation to occur to improve the week's studio. In addition, the six staff members met prior to the consolidation period during the studio break to reflect on the activities, and the students' handling of the content in the light of the objectives. In this way, the consolidation session was able to be tailored. (This session presented the most problems and was not entirely successful until the end of semester. Even so, some on-going refinement was possible due to the reflective process). Notes were also progressively entered in the Guidebook and used to inform and amend The Model for the subsequent design unit (Interior Design 2). Overall, the staff response to the new model was overwhelmingly positive. Students themselves generally cited the varied learning experiences, the environment that facilitated the giving and receiving of non judgemental, constructive feedback, and the relationships formed, as highlights of The Model.

A brief overview of the student feedback demonstrates the success in a number of ways. Approximately sixty students participated in PMT and KWIL surveys to gather qualitative feedback. The aim was to identify the students' perception of The Model and their experience within this learning context. The written responses were coded according concepts introduced by the student. Most student feedback centred on the three core components of the model: the project work (the focus of their applied learning), the tutorial strands and the support materials. Therefore, responses to these aspects were then analysed to identify key categories. Findings from the content analysis of the data are summarised in Tables 1-4. Each category captures the common aspects of the responses while the codes highlight subtle and important distinctions in students' understandings. In this paper, only the categories are included to demonstrate trends in student learning, and successes and limitations of The Model. (NB: Not all students responded to all questions or to all categories/question)

KWIL:		
ENVIRONMENT Strand Categories		
The students identified they had learnt:	No Codes	Respondents
(1) **To be aware of nature and its relevance to design**	6	49
(2) The link between nature and the design process	2	4
(3) That drawing enables them to understand the subject matter more deeply	3	6
(4) Nature is a source of ideas and inspiration	4	8
(5) Is an aspect of interior design	1	1
PROCESS Strand Categories		
The students identified they had learnt:	No Codes	Respondents
(1) The process and the importance of the steps involved	8	29
(2) An awareness and understanding of the design principles	2	9
(3) That the process is not prescriptive but flexible and cumulative	2	5
(4) There are ways of thinking which are applicable for designing	9	21
(5) Skills to work in a group	2	4
(6) The importance of recording the process	3	3
COMMUNICATION Strand Categories		
The students identified they had learnt:	No Codes	Respondents
(1) Drawing skills and techniques	10	25
(2) The value of drawing in communicating ideas	5	13
(3) How to document ideas	1	2
(4) There are ways of thinking which are applicable for designing	5	5
(5) To be confident and enjoy drawing	2	4
(6) Freedom of expression	1	1
(7) The design language	1	7
(8) To integrate theory and practice	1	1
(9) Skills to work in a group	1	3

Table 1:
Aspects students identified as having learnt in each Strand by week 9 of 13 week semester

KWIL:		
ENVIRONMENT Strand Categories		
Students state they know:	No Codes	Respondents
(1) Elements and principles of design generally and in nature	3	8
(2) The link between nature and designing	5	7
(3) Awareness of the natural environment and its value for design (conceptually and graphically)	8	13
(4) Appreciation of surroundings' details	2	10
Minimal base knowledge prior to course noted	4	10
PROCESS Strand Categories		
Students state they know:	No Codes	Respondents
(1) Designing involves a process	4	9
(2) Basic steps and/or skills that are part of the process	9	13
(3) How to/importance of recording the process	3	4
(4) Creativity as an aspect of the process	1	2
(5) Skills to work in a group	1	2
(6) It is of little relevance	1	1
Minimal base knowledge prior to course noted	3	15
COMMUNICATION Strand Categories		
Students state they know:	No Codes	Respondents
(1) Drawing skills	3	8
(2) Drawing as communication	5	7
(3) Abstract (unrealistic) drawing	3	4
(4) The design language	1	2
(5) Composition and/or beauty	2	2
(6) Important skills /Need skills for success	2	2
(7) Can communicate of meaning	1	1
(8) Skills to work in a group	1	1
(9) They had previous knowledge	2	2
(10) Revised existing knowledge	2	4
Minimal base knowledge prior to course noted	4	7

Table 2:
Aspects students identified that they know relating to each Strand by week 9 of 13 week semester

PLUS and MINUS		
STUDIO STRANDS Categories	No Codes	Respondents
Positive Aspects students identified include:		
(1) The interconnected strands provide diverse viewpoints	7	26
(2) The studio has a positive atmosphere - interesting, engaging	10	25
(3) They are exposed to wide range of lecturer styles, methods, and experiences	2	13
(4) Integrates theory and or practice through hand-on approach	2	8
(5) Increases productivity, learning, understanding, and improvement	7	10
(6) Provides for a diverse range of ideas, viewpoints and activities	2	3
(7) Structure enables reduced class size, activities outside room, students to set up in one location	4	8
(8) Group work allows sharing and swapping of ideas, interaction	2	2
CONSOLIDATION STRANDS Categories	No Codes	Respondents
Positive Aspects students identified include:		
(1) Summarizes and links things together	7	13
(2) Clarification, consolidation or reinforcement of relevance	6	12
(3) Opportunity to see, hear and learn from others/group	7	25
(4) Helps broaden ideas and understanding	1	1
(5) The tutor interaction and characteristics	3	4
(6) Links activities/themes to projects, assessment	2	3
(7) Personal qualities - time to reflect, its reassuring	2	5
(8) It provides closure to activities	1	1
(9) The atmosphere; facilitates learning	1	1
GUIDEBOOK Categories		
Positive Aspects students identified include:		
(1) It is practical, clear, convenient, relevant and the like	7	19
(2) It is informative, essential, interesting, beneficial, excellent, useful and the like	6	12
(3) Assists with weekly studio foundation and preparation	4	21
(4) It is one resource	1	1
(5) Facilitates learning/ knowledge	5	10
(6) Stimulates ideas, imagination, research; provides tools	3	3
(7) Helps student reach their potential	2	2
(8) Saves/reduces time needed to explain issues in class	1	3

Table 3:
Positive aspects of the structure and the guidebook identified by the students (Week 9)

PLUS and MINUS		
STUDIO STRANDS Categories	No Codes	Respondents
Negative Aspects students identified include:		
(1) Insufficient time for strand activities	1	39
(2) Amount of content to comprehend	1	2
(3) Some confusion in requirements	3	5
(4) Limited interaction with others in course	2	3
(5) The need to purchase materials	1	1
(6) Not all strands of equal interest	1	1
(7) Routine order of strands	2	3
(8) Time with tutor	1	1
(9) Inadequate space	1	1
CONSOLIDATION STRANDS Categories	No Codes	Respondents
Negative Aspects students identified include:		
(1a) Sessions are too long	1	7
(1b) Sessions are too short	1	3
(2) At times hard to understand	2	4
(3) Schedule – at the end of studio when tired	2	7
(4) Logistics – seating, space	2	3
(5) Disorganisation – requirements, time, tutor instruction	1	8
(6) Consolidation activities repeat issues in strands	1	5
(7) Group difficulties	3	8
(8) Time spent with tutors too short	1	1
(9) Not knowing how to reflect	1	1
(10) Students unwillingness to reflect/participate	2	2
(11) No minuses	1	1
GUIDEBOOK Categories	No Codes	Respondents
Negative Aspects students identified include:		
(1) Not provided as a book	1	2
(2) It is not always clear what and when to read	2	12
(3) Level of detail insufficient	2	2
(4) Extra work outside class	2	3
(5) Level of interest	1	1
(6) Amount of reading/week	1	7
(7) Readings not explicitly discussed in class	1	3
(8) Requires adjustment as not like other classes	1	1
(9) Imposition – if forget to do/ don't want to do	1	2
(10) Needs explanation of self-directed learning	1	1
(11) No minuses	1	1

Table 4:
Negative aspects of the structure and the guidebook identified by the students (Week 9)

The results indicate that the students were aware or had learnt key aspects of the strand content and that the learning experience was largely positive. The immediate need to address the focus of the Consolidation period, to monitor the amount of work required/strand activity, and to recommend readings/week reinforced the staff's reflections.

Characteristics of The Model's achievements include quality of student work, student engagement, understanding content, usefulness of resources, and development of generic capabilities.

4.1 Quality of student project work

Based on the staff's collective experience as academics (including teaching first year), projects were deemed to be of a higher standard than previous years. This was evident due to the increased awareness of substantive content, integration of issues, as well the standard of its execution. The first, the group project, demonstrated students' ability to work as a group to define and execute the design of a life size installation in the City Gardens. The second, an individual project, showed a developing sensitivity to the subtleties of the social and cultural issues embedded in a set play through design. Assessment of the work was based on a Criteria Reference Assessment matrix. Criteria included an understanding of design elements and principles, integration of theory and practice, responsiveness to context, quality of physical setting, ability to abstract ideas, ability to interpret social-cultural issues, and ability to communicate ideas

Figure 4:
Students' installation project exploring the concept Connection in the City Gardens.
It represents the tension between the indigenous population and white Europeans through the application of colour, line, scale, direction, repetition, and rhythm to a natural setting.

Figure 5 (a, b):
Students' installations exploring the concept Connection in the City Gardens.
These installations integrate colour, line, scale, direction, repetition, and rhythm—through reusable materials—with the elements and principles already existing in nature.


Figure 3 (a, b):
Students build their installation project exploring the concept *Connection* in the City Gardens in approximately 2 hours. They demonstrate links between social and cultural themes and the physical context through the application of the design elements and principles in three dimensions at a scale of 1:1.

4.2 Level of student engagement

The level of engagement and level of interest was very high. Reservations held by staff were quickly removed as students accepted that the interactive process was normal. For example, the habit of hiding away to produce a scheme on hand-in day (which is often displayed by students in the traditional model) was not evident. Another unforseen outcome from student learning experiences via the weekly tutorial exercises was a removal of the traditional student focus on marks rather than process. The amount of tutor to student tutorial time was also surprisingly and significantly reduced, without a reduction in the standard of the final project. Instead the project became a logical outcome of the 5-6 week exercises and captured their integrated understandings. Also, it gave them an immediate opportunity to apply the knowledge gained through the exercises. While projects were noted as being a valuable part of learning, some students found group work difficult to manage. Most found the interaction stimulating and useful for cross-fertilisation of ideas and approaches.

All full time and part time staff thought the three strands worked well and should be maintained although the consolidation session could be refined further. Staff believed students: completed tasks in a more focused way (‘in one hour that normally take three hours’); used the studio more than previously (either meeting other students, or working on projects together even though formal contact times were less); got to know each other very quickly and thus worked well together; and a more positive and livelier studio than previously observed. This was posited to be due the frequency of shared activities and the high level of content available that give clarity in what is required of them: ‘They are not playing a guessing game about what is expected of them’. In contrast, care needs to be taken with staff roles and feelings: ‘…because of the pace of the activities, we are not developing the relationship with the students we once had’ (Hedley, et al 2007).

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4.3 Understanding content

Students were asked to comment on each of the 3 strands – Environment, Process, and Communication. Their comments indicate that they had identified and integrated key aspects

of the core content. Firstly, in the Environment strand, students learned to see the elements and principles in the everyday, especially the natural environment. For example, one student identified: "…Respect for what the natural elements and principles have to offer in an interior". Another: "The environment affects everything from brainstorming of ideas – to the design process – to the final outcome of a design". Secondly, in the Process strand, students found the most significant strategy for the design process was brainstorming, and saw the generation of ideas as an important aspect of the design process. For example, one student learned "how to communicate in a group, how to analyse and reflect on things, how to generate ideas and sort through those ideas to get the best result." A second felt: "the process is as important as the outcome and is the main ingredient in the success or failure of the design." Thirdly, in the Communication strand, students learned how to draw, how to see, how to quickly capture the design language, and how to use it as a communication tool. One student expressed her recognition of its intention: "Great skill for communicating design ideas to others". Finally, the Consolidation sessions' intentions were understood and deemed to be worthwhile by most students for a number of reasons: "…it's good to hear others' thoughts on what we have just done. It helps to learn other people's thought processes". And: "Consolidation sessions help me to identify how each activity relates to the other and how it relates to assessment pieces".

4.4 Usefulness of resources

Initially, not all of the students had read the Guidebook prior to the class. Some students, on the other hand, had read and made extensive notes in the Guidebook, and were using it as an ongoing tool, bringing the content into the studio. The Guidebook was noted as useful; however, it seems that staff could have been more precise also about what students needed to read. One student commented: "I don't know how students could not do the readings and cope. They have helped my knowledge of the subject and my ability to engage in class activities to my full potential. They are short enough to keep me interested". And another student: "Importance sometimes is not stressed enough. That is, without it, sessions [were] nowhere as useful." It is therefore obvious that staff need to directly refer to it each week, in all strands, for students to recognise its role and its importance. Similarly, staff can be more proactive in regard to the OLT site to increase its impact on learning. In the evaluation, students noted the site was good for delivering information but that it needed to be arranged differently to increase clarity and to provide a greater range of material.

4.5 Generic Capabilities

Generic capabilities were demonstrated and assessed through the Process Journals, which included the weekly exercises, together with the tracking of the projects' process and development. Most generic skills—including defining problems, working in teams, self evaluation, and the like—
developed over the semester. Students were able by the end of semester to communicate using the correct design terminology and were demonstrating, through their interactions, an understanding of the concepts involved. Compared to past years, this characteristic was an improvement, and demonstrated student confidence with the substantive content and language.

Students identified that their ability to reflect was possibly limited as they felt unsure about what the act of reflecting entailed in this context. However, their contributions to the consolidation process, and their weekly and project reflections in their journals (through text and/or sketches), demonstrated that this was occurring in most cases—at least on an elementary level. As the activity was something that was done individually and in private, this

could account for some of the concern, as the students could not immediately confirm if they were on track. More specific explanation and direction in the Guidebook may improve this potential problem.

The area of self-directed learning was the least successful. This is due to the lack of direction and consistency within the weekly strands. Staff had imagined students would refer to the Guidebook, and the OLT site, or be self-motivated and undertake tasks such as drawing practice. It has been found, however, that this self directed framework needs to be discussed with the students explicitly for them to comprehend what is required and for them to take responsibility for their learning beyond the formal studio sessions. Therefore, in future, introductory studio sessions will give clearer direction regarding the role and use of supporting materials and establish the boundaries and responsibilities of self-directed practice.

Conclusion

Overall, The Model is successful and will be refined to apply to other interior design units. The strategy, informed by hermeneutics and C.S. Peirce's logic of inquiry, is judged to be successful because it served to enhance student understanding of design and designing within the contemporary context. Knowledge of design and an ability to design are demonstrated through: firstly, the project work, which integrates individual aspects of both the substantive content and of the process (the parts and the whole); secondly, the level of complexity embedded in the outcomes for the project and exercises set (the integration of knowledge gleaned from various perspectives); thirdly, the competency of the modes of representation selected and their ability to communicate ideas and solutions; and finally, the level of engagement by students in the class. The mode of engagement and the design outcomes also demonstrate the acquisition of generic capabilities appropriate for year one undergraduate students.

With regard to the objectives outlined at the beginning of this paper, the following conclusions can be offered. Focusing on particular concepts means that each is understood more deeply, and are discussed and used more successfully than by previous cohorts. Students are highly engaged, and the learning occurs actively and is regarded as interesting. Emphasis is on facilitated learning rather than didactic learning, and the structure challenges students to engage in a pro-active manner in order to gain deeper understandings.

The energy and fractured life of the contemporary university student is recognised, and attendance and engagement indicate that this is successful for the majority of students. Students' generic capabilities and attributes are fostered. In particular, critical thinking, reflection and self evaluation, and an ability to integrate and apply disparate concepts, were applied to the projects. Also the learning environment caters for a variety of learning styles and a diversity of experiences, and the strands provide the potential to stream learning styles into particular tutorial groups in the future, without stigmatising certain characteristics.

The structure and atmosphere is in sharp contrast to our previous more traditional course structure that had come to have increasing limitations in the contemporary university context. Although not all aspects are positive, there is unanimous agreement that The Model has much potential and that it does address the major concerns that we had: to create an optimal learning environment, to engage the contemporary student, and to maximise limited resources. The experience encapsulated in the following reflection supports this view.

Overall reflecting back on last term's work and the feelings and emotions it evoked really made me realise the depth each activity we were involved in made me think and start to think in terms of a designer!... Last term was a real eye opener experience. It evoked confusion and scariness at the beginning as it was unfamiliar territory but by the end we could all see the light at the end of the tunnel and actually acknowledge that everything we learnt will play a vital role in our design degree and for many years to come. (Reflection in student journal, July 2006)

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Appendix 1: Typical Week Studio Structure

Example: WEEK 11 THE WEEK'S THEME: OPTIONS IN DESIGNING

STRAND ONE: Environment Strand TITLE: How Nature Designs

Introduction

- Nature's inherent values can be revealed by careful observation.

Objective:

- To appreciate the value of nature and its link to key concepts of environmental design

Tutorial Activity

You are to visit the City Gardens and locate three examples of the way nature (plants and animals) have addressed the concepts of environmental design.

1. Select *three concepts* from the following: cover, refuge, enclosure, shelter, barricade. Capture the *essence* of the chosen concepts with sketches to express your emotive response.
2. Choose *three* of the following relationship terms: under, over, beside, within, below. Abstract the key properties of these relationships, in line drawings.

Outcome (doing what, why)

An understanding of the spatial qualities in the way nature structures itself.

Presentation Needed

Present three sketches and three line drawings in your Process Journal

Application to Set Design

Nature's values can be applied to help capture emotion in the Set Design project.

References:

DTB101 Guidebook, Section C

Self Directed Activity

Record the above activities in your Process Journal
Record (also in your Process Journal) how this exercise can help in your set design project.

STRAND TWO: Process Strand TITLE: Options and Selections

Introduction

- Remember, multiple solutions are often possible, and mostly desirable.

Objective:

- To develop an ability to recognize multiple design options and possible solutions

Tutorial Activities

A series of exercises in the studio to consider and reconsider multiplicity and ambiguity in design

Outcome (doing what, why)

- A series of analytical sketches demonstrating an understanding of multiple design options

Presentation needed

- A3 drawings on detail paper to be included in process journal

Application

Integration to "Set Design" (Project 2): The experience of exploring and evaluating options can be directly applied during the consideration and resolution of Project 2

References

DTB101 Guidebook, Sections C3.7 and C3.8, on *Abstraction* and *Theory*
DTB101 Guidebook, review all sections

Self Directed Activity

Record the activities and your reflections in the Process Journal

STRAND THREE: Communication Strand TITLE: Interpretation, Emotions and Abstraction 2

Introduction

- Last week you made an assembly of parts; this week you will record this (in drawings) in a "space".

Objectives:

- To develop an ability to communicate through model making
- To develop an ability to apply design *elements* and *principles*

Tutorial Activities

Production of a series of drawn views to visually communicate your *"assembly"*

Outcome (doing what, why)

A series of drawings which represent the transformation of the assembly of pieces into a proposed space – *an "accidental space"*

Presentation needed
Four drawings on A 3 paper demonstrating a range of media techniques (pencil, pantone markers, ink and colour)

Application
Integration to "Set Design" (Project 2): Presentation drawing skills for the preparation of Set Design project submission

References
DTB101 Guidebook, Section C

Self Directed Activity
- Begin to layout (set out) your drawn record of your '3 dimensional' proposal for your set design for tutorial feedback in Week 12
- Record activities and reflections in the Process Journal

CONSOLIDATION SESSION TITLE: Emotive Connections and Impact of Design

Content
Analytical drawings
- the model as a "representation " of the proposed materials
- a sense of theatre
- interaction of people in *a* space
- how people interact in *the* space

Relevance to the project
Apply what you have learnt today and the skills acquired – to Project 2
- Images / examples of 'models' for Project 2
- Review application of exercises completed in view of Project 2
- Discussion of the *"Open studio session"* concept

References and Readings
DTB101 Guidebook, Section C
Refer to CMD for updated resources on set design

Self Directed Activity
Part 1
Revise – the content in the Guidebook - lecture notes for
1. What is Design? Sections C1
2. The Design Language, Section C2

Record activities and reflections in the Process Journal

Part 2
Work on Set Design project
Initial concepts; site analysis; inspiration etc. to be brought to the studio next week (Week 12) to allow individual tutorial feedback to be given.
NOTE: Bring in proposals next week for Project 2 for discussion with the tutors

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