Construction Through Critique:
the dialogic form of design studio teaching and learning

By

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A Thesis
Submitted to the Faculty of Graduate Studies
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MASTER OF INTERIOR DESIGN

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CONSTRUCTION THROUGH CRITIQUE: THE DIALOGIC FORM OF DESIGN STUDIO
TEACHING AND LEARNING

BY

PAULA S.M. DOZOIS

A Thesis/Practicum submitted to the Faculty of Graduate Studies of The University of

Manitoba in partial fulfillment of the requirement of the degree

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MASTER OF INTERIOR DESIGN

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Abstract

This thesis is situated in design education. It is a study about a dominant form of educational activity - the design studio critique. The design critique is a unique form of educational engagement. The critique is fundamentally a dialogic act that involves, but is not limited to, the one-on-one interaction between a novice and a domain expert. Design 'dialogue' is a complex set of the activities of design culture – a vast array of thoughts, actions, symbols, practices, and products of design. The design studio critique is seen as a shared and constitutive act guiding 'meaning-making' or intentionality in the students' design work.

This study examines the relevant literature in design pedagogy, architectural education, education, and language theory through an ethic of social constructivism.

This study will be of interest to design students and design educators. It may also be of utility to educational researchers, particularly to those with a focus in situated learning and cognitive apprenticeship.

This thesis concludes that future work on design studio education is required which takes the normative practice of the design studio critique and explicitly shows how the complexity of design concerns are embedded in design dialogue.

Acknowledgements

This thesis is lovingly dedicated to my mother, Katherine.

This journey was a shared one, and I wish to express my sincere gratitude to my companions:

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My brother Peter, sister Angela, and nieces Nicole and Chantal, for their strength and unwavering love and support.

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To my friends, for their friendship.

Again finally, to my parents Katherine and Maurice Dozois, for their angelic whispers. And for their joy.

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Introduction

'dia-' from the Greek *dia*, 'through'
'-logue' from the Greek *–logos* 'to speak'

This thesis is about a particular educational event – the design studio critique. It is an investigation of the activity of 'meaning-making' that is situated in the design studio, and facilitated through dialogue. This shared activity stimulates a creative process that embeds a complex set of design intentions. *Intentionality* is fundamental to the design act. The educational process that embeds intentionality is under-represented in the literature of design studio teaching and learning.

Further, the focus on the design studio critique ('critique' or 'crit' for short) came about through the observation and realization that the studio critique session is a unique educational event in a number of significant ways: the crit is unique in the dominant position it holds within the framework of design education - it is the central educational experience of design schools. The critique session is unique in the practice of bringing together extensive one-on-one conversations between domain experts and novices at all levels of the educational enterprise - undergraduate students engage in dialogic relationships with instructors similar to 'traditional' graduate student experiences. Thirdly, the critique is unique because of its history - centuries-old patterns of traditional architectural education are still embedded in living design studio practice.

This thesis is the journey through these issues - an exploration of the 'uniquenesses' of this educational methodology. Situating the design studio critique in research inquiry traditions was the first task of this work, and was instrumental in framing how the work evolved. Metaphorically, Chapter 1 is the 'theatre of operation' – it both locates an inquiry identity for examining the act of design invention, and it articulates how one may come to represent an individual's understanding of experience.

Chapter 2 begins with an overview of the complexity inherent in the word 'design', and goes on to explore four design process realms - normative, behavioural, experiential and linguistic orientations to the design act.

Chapter 3 looks at the perspectives impacting the design critique viewed as an educational event. Drawn from the educational literature, the critique is examined through parallel theories that explain *how* or *why* it may work.

Chapter 4 situates the phenomena of dialogue in the broader context of dialogism and social constructionism. Most importantly, it is an opportunity to offer, and to open more fully to the potential of *dialogue* as both the constitutive activity of the design studio critique and the locus of 'meaning construction'.

To begin a discussion of this work, it is important to understand how the research process transformed. The (seemingly) ever-expanding context of the inquiry changed the initial research goal from a pseudo-practical pursuit (normative examination of design studio pedagogy) to a more theoretical, and dialogic examination of the critique session. The theoretical context for understanding dialogue became increasingly complex as the

process unfolded – ranging from the traditions of architectural education, to the casting of design pedagogy as language acquisition, to educational perspectives of learning such as cognitive apprenticeship, to dialogism and social constructivism. The next section explains this journey.

Transformation

This thesis is the culmination of a seven-year process. That is a long time. Too long. But it was necessary, and I can't say that I would have given up a day - OK, maybe a couple. But each and every journey is unique right to its end. When I began this venture, I was a Masters student in the Department of Education. I had a Bachelor degree in Interior Design and had been in practice for about six years. During my practice, I had worked as a sessional instructor in the Department of Interior Design at the University of Manitoba. Actually, even before that, as a student finishing my undergraduate degree, I had been working as a design studio instructor. Perhaps that is not accurate. I was working by virtue of the fact I was being paid, but it really was a form of apprenticeship in design studio teaching.

When the Department established a Masters program, I transferred into it. I was still taking coursework in Education while I began working as a full-time member of the first year Environmental Design/Interior Design studio team. It seems obvious now why I was interested in investigating design studio education. Opportunity and interest had coalesced around the first year design studio.

As I examined the design studio, increasingly through the lens of education, I began to question the methodology of design studio education – in particular the design studio critique session. And by this, I am referring to the one-on-one 'desk crit' set inside the design studio environment. The questions were:

- Why were the design studio and the critique session at the center of design education?
- Were the activities of the specific educational engagement important?
- Were these educational practices constitutive – was there a relationship to the broader practices of design culture?
- What did the design critique hold?

Concurrently, I was asked about my Research – big 'R'. Honestly, I had no idea. I had heard the words used before, but I really didn't have a sense about what it meant. I certainly didn't understand how, as a designer, I could represent what I was thinking about. I thought research was scientific, that it was about 'proving' something empirically. It was completely at odds with how I saw the process of design – creative, transformative, iterative, dialogic, shared, and process-oriented. It was then that I read Ross Mooney's essay (1975) *The Researcher Himself*. I was alone. I started to cry. Through Mooney's guidance, I understood that I was a research consumer - that research had always been presented to me as a package, not a process. I could become a producer though. What I was thinking about - not content-wise, but as an unfolding - could be unfolded! OK, I thought - I can try that.

Quite naively, I moved forward to outline my research proposal that was on its third iteration by that time. As I remember, the earlier titles were "The Design Studio Critique: An Analysis of Spatial Mythology", "Transformations of Bauhaus Pedagogy", and "Apprenticeship Through Critique: An Analysis of the Design Studio". My advisor at the time suggested that I should explore, and design interview questions to talk to students

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and instructors about their experiences in design studio education. This would provide an opportunity to ask people how they came to understand the processes, products and culture of the design studio. There was some concern that I was, perhaps, too close to the research activity under study given that I was teaching in this context, and these were my students and colleagues. But I was familiarizing myself to the 'fit' of this position in the research literature. I designed and conducted the interviews.

I conducted the interviews based on a model which seemed to provide the most reasonable scope - three interviews - one about the participant's design life history; one about their experience of the project "Deform-Reform" which was a studio project recently completed in the first year design studio - a studio brief which I had been responsible for writing, and, one entitled "Reflections on the Meaning".

I thought things were going well. People were very insightful. I could relate to the things they were saying. As I mentioned, I was concerned about my relationship to the research context. I had a desire to make sure I was informed about the process I was undertaking as compensation for how close I was to the situation under study, so I audited a course on qualitative methods.

During this time and for some time to come, the interviews were transcribed either by myself or by a transcriptionist who I had hired. Out of the 34 interviews, we transcribed the eleven "Design Life History" participant interviews. This was the interview in which I had asked about the design studio critique. Concurrently, I was learning a lot more about the act of qualitative research, about educational perspectives, and about dialogism and

social constructivism[1]. I was feeling less confident about the interviews and much more confident about the ideas I was reading about, and the explicative potential these areas held for contextualization of the design studio critique.

The initial chapter I wrote was on research methods. This was the most significant area of my work at that time because it was fundamental to framing my inquiry. It was also the most difficult to tackle. I decided to structure it first. The interviews did not quite seem to fit, but idealistically I still believed they were connected. There was a huge gap emerging between the 'soundness' of the actual interviews, and my interest in dialogism, educational perspectives, constructivism and research inquiry in general.

I kept writing chapters. The chapter on dialogism and social constructivism came next. It felt easier to write, it made sense. It was more intrinsic to the issues I cared about. It started to confirm, synthesize and validate a dialogic perspective of the design studio critique.

Then, I wrote the chapter on educational perspectives that I now see as a bridge linking dialogism and social constructivism to design pedagogy. It provided a 'voice' for explaining how the design critique may work educationally.

The summer writing retreat was over. I had written nearly four chapters, and had to return to work. I had to finish the Design Pedagogy chapter. I was prepared. I had worked out a framework. The writing about the relevant issues kept expanding in scope. I

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[1] See Chapter 4.

kept writing. It seemed like it was too big. I no longer understood how the interviews were relevant at all. They seemed interesting but not as relevant as the rest.

While teaching that year, writing carried on. The design chapter was finished. The interviews were very tangential by this point. I had said what I thought I wanted to say about the design studio critique in the subsequent chapters. The thesis draft was rearranged to introduce the research inquiry up front. The interview section was moved to the back, the analytical codes and the coded interview transcripts were appended. They *were* tangential. In a paragraph, I outlined the coding groups in the hope that readers would understand how dialogically complex issues are embedded.

The interviews no longer fit the structure, but they were important as a point of departure for this journey. I felt obligated to try to keep them - however incidental they now seemed. I thought that I had come to understand the design studio critique through design, educational and dialogic perspectives. The issues seemed to have been framed, to have been given context. That was the intent all along – to contextualize the design studio critique in a broader framework of understanding. I came to locate myself within a bigger community.

So I have taken the interviews out, but the research inquiry has been left in – it frames the journey. And it feels better. I believe that it provides more clarity. I think that the opportunity is *now* to design a research project that shows evidence of how these theories are explicitly conceived, and practiced day-to-day in the studio.

Chapter 1: Inquiry Perspectives

> Michel Foucault describes the experience of
> encountering " a certain Chinese encyclopedia" in
> which animals were categorized as:
> a) belonging to the Emperor, b) embalmed,
> c) tame, d) suckling pigs, e) sirens, f) fabulous,
> g) stray dogs, h) included in the present
> classification, i) frenzied, j) innumerable, k) drawn
> with a very fine camelhair brush, l) et cetera,
> m) having just broken the water pitcher, n) that from a
> long way off look like flies.
> (Foucault, 1970)

Orientation

The inquiry process is as labyrinthine as the search for a good question. Initially,

the question of research methodology was a situation fraught with non-identification and of

confusion. Non-identification in the ability to understand how the research process could

come to reflect upon design concerns, design processes and design values. And

secondly, confusion in the definition and in the sheer volume of information related to

methodologies both quantitative and qualitative, their philosophical orientations and

nuances of technique.

Each research tradition values a unique process of 'coming to know' the situation

under investigation; or, stated in another way, 'coming to know' is the act of contextualizing

the situation under investigation through an appropriate and responsive process. While

the general intent of the initial question posed in this study, "How may meaning be

constructed through the dialogue of the design critique?" has changed little from the interest that spawned it, the intellection and fit of the question to research traditions have significantly shaped its substance.

This investigation considers three significant areas that help to frame an understanding of the phenomena of a design studio critique: design studies, educational perspectives, and the social and dialogic foundations of human engagement. For the purpose of this study these areas co-exist with a philosophical orientation to, and an interest in 'meaning construction.'

Meaning Construction

The difficulty in defining 'meaning-making' arises from an inherent complexity of manifestations. For the purpose of this study 'meaning-making' refers to both the overriding conceptual orientation to *what and how* the design act is understood, and to the representations of these orientations within the educational dialogue - the design studio critique. There is no single way of defining a 'meaning-making' perspective, activity, or dialogue: the definition of 'meaning' in-and-of itself is referential, relativistic. The desire here is not to use 'meaning' to infer one thing, it is to recognize that multiple meanings may be present and, in particular, *are always* present in *dialogue*. 'Meaning-making' attempts to recognize the phenomenon of a fleeting shared understanding - not to define the *content* of meaningfulness. 'Meaning-making' is the shared and constitutive nature of dialogue.

We can think of this process as one in which participants
send messages to one another and receive messages
from one another. However, the transmission of their
message is not like a kind of telegraphy, in which signals
(assumed to be inherently meaningful) are directly
transferred from one participant to another. Rather the
process is one of reciprocal *construction*. Each
participant must construct for himself the meanings of
the messages sent by the other, design messages
whose meanings the other is likely to be able to construct,
and test both that he has correctly constructed the others
meaning and that the other has correctly constructed his
own. When this process works well, the result is a reliable
convergence of meaning. In so much, the studio shares
with all human communication. (Schön, 1985, p.60)

As this work explores in subsequent chapters, meaningfulness is partially rooted in

an understanding of how the design act may be characterized - normative, behavioural,

experiential, and/or linguistic. Meaningfulness is partially anchored in the huge range of

contextual factors bearing upon the construction of experience. Meaningfulness is

situated, in this case, *through* dialogue.

Qualitative Inquiry

The word *qualitative* implies an emphasis on the
qualities of entities and on processes and meanings
that are not experimentally examined or measured
(if measured at all) in terms of quantity, amount,
intensity, or frequency. Qualitative researchers stress
the socially constructed nature of reality, the intimate
relationship between the researcher and what is studied,
and the situational constraints that shape inquiry. Such
researchers emphasize the value-laden nature of the

inquiry. They seek answers to questions that stress
how social experience is created and given meaning.
(Denzin & Lincoln, 2000a, p. 8)

Bogdan and Bilken (1992) outline the five distinguishing characteristics of

qualitative research as contextual, descriptive, process oriented, inductive, and 'meaning'

rich. *Contextual* – the contextually bound – features of qualitative inquiry address

complexity. This complexity includes, but is not limited to, the physical, historical, political,

symbolic, and organizational structures of the setting that impact human activity. Context,

in this case, is a limited definition of culture.

While definitions of culture vary according to the situation under study, Clifford

Geertz (1973, p. 14) has defined it as follows: "As interworked systems of construable

signs..., culture is not a power, something to which social events, behaviors, institutions, or

processes can be causally attributed; it is a context, something within which they can be

intelligibly – that is, *thickly* – described". Culture, defined in this way, is not *per se* the

object under study, but rather is reflected as a constituent aspect of the evocation of

experience. Culture influences experience. The evocative nature of context relates

directly to the philosophical perspectives of qualitative inquiry.

"Thick description", a term attributed to Geertz, is used to define (traditionally)

ethnographic or (contemporaneously) qualitative research in general. *Descriptiveness* is

tied to the act of describing quality – a nuanced and pluralistic reading of tangible and

intangible associations. In the words of Bogdan and Bilken (1992, p. 30-31), "...nothing is

trivial,...everything has the potential of being a clue that might unlock a more

comprehensive understanding of what is being studied". Collecting data for "thick description" may include interview transcripts, researcher memos and field notes, sketches and photographs, models, and the like[2]. To best describe the richness and variety of the phenomena under study, 'more' information is seen as better. 'More' as a process of inclusion succeeds in giving voice to dominant, marginal, and contradictory notions.

Consistent with the writer's belief that *design is a shared invention process* that provides the opportunity to create meaningfully, qualitative inquiry is seen as a responsive, creative, and transformational undertaking. The 'fit' of using qualitative strategies to study design seems transparent: a responsive, creative, and transformational process is employed to explore a responsive, creative, and transformational process (the design act) in order to understand how meaning, through the design studio critique, may occur.

The *process oriented* nature of qualitative inquiry refers to the interest in studying process, processes which confer meaning on actions and/or objects, rather than looking at the result or culmination of the process as the most valuable component to be studied.

The *inductive* quality of the qualitative research process refers to the bottom-up nature of the analysis. Glaser & Strauss (1967) pioneered the term "grounded theory" which has subsequently been refined and adopted as a primary inquiry tool in qualitative research (Bogdan & Biklen, 1992; Bogdan & Taylor, 1975; Charmaz, 2000; Denzin & Lincoln, 2000a; Gall, Borg, & Gall, 1996; Geertz, 1973; Glaser, 1978, 1992; Johnson, 1997; Maxwell, 1996; Seidman, 1991; Strauss & Corbin, 1990, 1998; Van Manen, 1990).

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[2] 'And the like' is used instead of 'etc.' In this case, 'the like' refers to the vast array of available qualitative data collection techniques.

The approach is (metaphorically speaking) the *mining* of research data in order to ground or locate theoretical anchors, and, to "build explanatory frameworks that specify relationships among concepts" (Charmaz, 2000, p. 510). While the conceptual field is generally understood from the outset of the study, the distinction of this approach is that the particular issues of theoretical significance become apparent through the analysis and interaction with the data. In other words, the interpretation frameworks are not (fully) identified before the data act as cultural interpreters, and help to define them. The desire is to convey a meaningful account of the *participant's* experience.

The final quality identified (Bogdan & Biklen, 1992) is that of *'meaning'* construction which was discussed earlier in this chapter. Quite simply, it identifies the critical orientation to valuing people's understanding of their experience. Not so simply, it identifies the philosophical and theoretical paradigms that frame (and bias) the research inquiry enterprise.

While the five characteristics have, in some way, opened the door to the realm and nature of qualitative inquiry, an exploration of inquiry perspectives will make explicit some of the underlying philosophical orientations to *how* and *why* meaning may be constructed.

To reiterate, the desire to understand how meaning may be constructed through the design studio critique method came about, in part, by asking: "What is it about the design education process that may provide insight into the way I came to be?" From a research inquiry perspective, there seem to be others asking similar questions.

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Paradigm Boundaries

The author of the Chinese encyclopedia understood a thing or two about classification systems - it really depends upon your perspective. In the evolving qualitative research tradition there seem to be many ways of articulating paradigm boundaries. According to Lincoln and Guba (2000), a number of critical issues confront the qualitative researcher - paradigm malleability, critical praxis, research control, validity, and voice - to name a few.

Furthermore, each of these perspectives is first confronted by the belief structures that impact the ontology (an orientation to the nature of existence), the epistemology (a belief in the theory of knowledge), and the methodology (analytical process) of each paradigm. Here, qualitative inquiry is viewed as a subset of philosophy, the larger discipline that questions the assumptions supporting all human endeavors.

To illustrate a paradigm orientation using a pro-scientific or positivist approach is to say that one believes that reality is knowable in an objective way, that an objective 'truth' exists, and that it can be proven through forms of experimentation. In contrast, using a constructivist paradigm is to say that reality is known through experience (relativistic), that reality is negotiated through exploration and self-reflection, and that we come to understand through a dialectic or hermeneutic engagement with 'the other'.

Educational constructivism and social constructivism, discussed in both Chapters 3 and 4, is consistent with the constructivist orientation described above. The design studio

critique methodology, viewed as an educational event, can also be similarly characterized: design studio pedagogy advocates 'coming to know' through experience, the curriculum sets up a series of experience 'scenarios' for the participants to engage in, and the cultural experience is shared though text, images, three-dimensional, and dialogic ways.

Constructivism[3], also referred to as *social constructionism* and, more recently, as *perspectivism*, is defined as:

> Human beings do not find or discover knowledge
> so much as we construct or make it. We invent
> concepts, models and schemes to make sense of
> experience, and we continually test and modify these
> constructions in light of new experience. Furthermore,
> there is an inevitable historical and sociocultural
> dimension to this construction. We do not construct
> our interpretations in isolation but against a backdrop
> of shared understandings, practices, language, and
> so forth. (Schwandt, 2000, p. 197)

From a research inquiry perspective, a constructivist approach (Denzin & Lincoln, 2000b; Lincoln & Guba, 2000) advocates articulating an understanding of meaningful events through the words and actions of the participants. The intention is not to define a singular representation of the construction of the social world as one voice, but rather to give voice to multiple participants. The focus does not attest to a definition of verifiable 'truth'; rather, the validity of the phenomenon defers to *authenticity* and *trustworthiness* – a seemingly more (pluralistic) common sense response when talking to people about their

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[3] The terms 'constructivism' and 'constructionism' are used interchangably throughout this text. No distinction between the two terms was found in the supporting literature.

ideas and experiences.

The other inquiry perspectives that seem to advance both an understanding of the process of the design act and an understanding of the research act are symbolic interactionism, phenomenology, and hermeneutics. Symbolic interactionism, of the three, has the deepest historical roots in the study of qualitative research. Of interest is the Chicago School of Sociology (Bogdan & Biklen, 1992). Founded in 1892, the 'Chicago School' was the world's largest and first research department to embrace and define a qualitative (case study) approach to human study. Writer, educator, philosopher John Dewey (1938) was at Chicago during this period, and in charting this new approach is known to have associated with the major players, the sociologists George H. Mead, Ellsworth Faris, Herbert Blumer, W.I. Thomas and Robert Park. The common understanding they brought to sociological (and anthropological) studies is the view that "symbols and personalities emerge from social interaction" (Bogdan & Biklen, 1992, p.11). Further, the epistemological stance of symbolic interactionism advocates that "the meaning people give to their experiences and their processes of interpretation are *essential* and *constitutive*, not accidental or secondary to what the experience is" [italics added] ,(Bogdan & Biklen, 1992, p. 30). These are very powerful associations. To relate it back to the design studio interaction for a moment, this statement can be read as: the (social) pedagogic engagement provides the locus of meaning construction. Constructivist paradigms support this association as a pre-condition for exploring both *how* and *why* meaning may occur in particular ways.

Edmund Husserl (1859-1938), a German philosopher, founded the

phenomenology movement. Phenomenology is defined as "the descriptive analysis of

subjective thought processes." (Schubert, 1986, p.30). Phenomenological inquiry refers to

process that examine the relationships between self-reflective persons and the objects that

engage their experience (Kohl, 1992). The desire is to reflect on the nature of implicit

intentionality or *meaning making*. The phenomenological approach shares with symbolic

interactionism a notion of the individual as a subjective interpreter of events in their lives.

While these events are mediated through interaction in the world, the phenomenological

orientation has the interpreter 'owning' their understanding. This is to say that people's

understandings constitute their reality and define their intentionality.

Of course, interpretation is central to the activity of qualitative inquiry.

Hermeneutics, the last of the paradigm orientations to be discussed, is both the theory and

the craft of interpretation (Gall et al., 1996; Kinchloe & McLaren, 2000; Van Manen, 1990).

Marshall McLuhan said it most eloquently when he stated - "the medium is the message".

The scope of hermeneutic inquiry is not just about the interpretation of language forms; it

may also be about the interpretation of cultural products. In a 1966 interview (Benedetti &

DeHart, 1996) McLuhan states:

> I have insisted that any new structure for codifying
> experience and moving information, be it alphabetical
> or photography, has the power of imposing its structural
> character and assumptions upon all levels of our private
> and social lives – even without benefit of concepts or
> of conscious acceptance....That is what I've always
> meant by "the medium is the message." (p. 106)

In the qualitative research tradition, the idea of interpreting the "structural character and assumptions" is at the heart of the hermeneutic inquiry.

> The critical hermeneutic tradition...holds that in qualitative research there is only interpretation, no matter how vociferously many researchers may argue that the facts speak for themselves. The hermeneutic act of interpretation involves in its most elemental articulation making sense of what has been observed in a way that communicates understanding. Not only is all research merely an act of interpretation but, hermeneutics contends, perception itself is an act of interpretation. Thus the quest for understanding is a fundamental feature of human existence, as encounter with the unfamiliar always demands the attempt to make meaning, to make sense. The same, however, is also the case with the familiar. (Kinchloe & McLaren, 2000, p. 285-286)

The hermeneutic act is a shared process, one that, through the dialogic process of human engagement –articulation, argumentation, and negotiation – a common language of understanding may start to appear. A positivist reading of hermeneutic activity is to achieve what Gadamer (in Gall et al., 1996, p. 631) calls "fused horizon(s)," shared (but individually articulated) perspectives. To warn against the desirability of a fused horizon, the hermeneutic act may also suggest a process of enculturation that may prejudice dominant or marginal issues. The goal of a 'real dialogue', according to the philosopher Mikhail M. Bakhtin[4], is a tensile state that keeps all relevant - even contradictory - issues in motion (Sidorkin, 1999, p. 33).

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[4] See Chapter 4.

These qualitative paradigms frame the journey, through *Construction Through Critique: the dialogic form of design studio teaching and learning.* To review, the qualitative paradigms that seem to elucidate an understanding of how meaning through the dialogue of the design studio critique may come to be understood are constructivism, symbolic interactionism, phenomenology, and hermeneutics. Each of these perspectives shares an ethos that values the voice of each individual, as well as a pluralistic reading of all 'texts'. To oversimplify the significant message of each paradigm: a constructionist view advocates construction through experience; symbolic interactionism believes the process is shared, essential and constitutive; phenomenology suggests intentionality can be read between the 'subject' and the 'object(s)' they construct; and, hermeneutics asserts the act of interpretation is the most significant and telling pursuit of the research activity. Calling upon the perceptive strengths of each of these ideas, a discussion of the design pedagogy is now appropriate.

Chapter 2: Design Pedagogy

Definition

> The etymological root of 'design' comes from the Latin désignãre, to mark out. The prefix 'de' is from the adverb and preposition meaning 'of, from, sense, through'. 'Sign' in all its complexity is derived from *signum*, a distinguishing mark. 'Sign' in this view infers a signature or a sign in the form of the *sign of the Cross*, or to give a sign. Another definition of 'sign' is to mean, that is, to intend, to make, and to make indicative of. 'Sign' denotes significance. It arises from the English noun *significs* which is the theory or science of meaning; that is, to appoint hence to assign; to entrust, to consign; to mark out, to name, to designate. The act of assigning requiring an intention to act - presignify, hence to signify beforehand. Compiled from (Partridge, 1983) and (Hawkins & Allen, 1991).

Given the scope of the etymology of 'design', a discussion of design pedagogy begins with a reflection upon the malleability of the term. Notwithstanding the complex origins of the word itself, Clive Dilnot (1989), a design researcher and educator, writes that 'design' in its normative state refers simultaneously to at least three divergent ideas: 'design' refers to design activity and processes (verb). 'Design' designates special qualities of built objects or spaces (adjective). 'Design' refers to the type of work designers do (noun). Even in design literature, the malleability and scope of the word 'design' accounts for misunderstanding and ambiguity.

> [Design] has gained the composite meaning of aim plus thing aimed at. It has come to stand for a process –

from the original conception through the plan and the
manufacture to the finished product. (Bertram in Livesey,
1995, p.50)

Design is the conscious and intuitive effort to impose
meaningful order. (Papanek in Livesey, 1995, p.50)

Design is an activity that responds to human needs,
maintains the world and leads to an executable work,
developed through reciprocal action of thinking and
making. It is an activity that may be individual or
collaborative, spontaneous or evolutionary, original
or borrowed that results in the creation of meaningful
(continually reinterpreted) and material order.
(Livesey, 1995, p. 53)

Everyone designs who devises courses of action aimed
at changing existing situations into preferred ones....
Design, so construed, is the core of all professional
training: it is the principal mark that distinguishes the
professions from the sciences. (Simon, 1996, p.111)

The essence of design work is contained in that moment
of creativity when a problem is placed in equilibrium
with its solution upon a fulcrum of technology. (Pulos in
Manu, 1994, p. 62)

These readings, while they share some of the same intent, reflect a personal and

nuanced interpretation of the activity we call design. To return to Clive Dilnot, one of the

main characteristics that define a common understanding of the term 'design' (adjective) is

a quality or 'value-added' feature of a product or space. It implies 'added' aesthetic

considerations – perhaps by a designer - or, an 'added' function or utility. Designed

objects often carry particular material, historical and/or functional attributes that are seen

as beneficial, beautiful, or desirable. To elaborate, the mere use of the term 'design' while

it may actually define an 'added' quality of a space/object, is, in and of itself, a valued and desirable label, a feature which carries economic consequences independent of how the process of 'design' may manifest itself in the space or object.

Dilnot also characterizes the 'work designers do' as obscured in a mysterious and magical act; 'design' is a rather cloaked activity that is not well understood in terms of its relevance. Accordingly he states, "design...suffers from a general unwillingness of the culture to grant it the status of an activity worth studying and defining" (Dilnot, 1989, p. 233). Therefore, the work designers do, and the value they bring to bear upon the creation of cultural artifacts (including space) is clouded in obscurity. He argues that the value designers bring to society is poorly understood, therefore little cultural authority or power is afforded to the enterprise. This is unlike, for example, the profession of medicine where a tacit understanding of the value of medical professionals seems to be held among the public at large. Design in this sense does not seem to wield much influence, even though, as the design author Victor Papanek states: design is "the primary underlying matrix of life" and... "arguably the only way that man decides his material future" (Dilnot, 1989, p.247).

As alluded to a moment ago, much of the difficulty and obscurity of both the qualitative nature of designed artifacts and of the value of design work seem to rest in the vagaries of design processes. Not only is the seemingly esoteric process of invention not well understood, the execution of a design 'plan' is complex and highly specialized. Norms of practice govern (fortunately or unfortunately) each of the design disciplines. Design

processes are characterized in many ways; dominant among them is the normative realm, or the process that is reflected in what designers do.

The normative realm is one of the design process realms under investigation. Prior to engaging in this discussion, it is important to consider the relationship between design and the pedagogic. Pedagogy is the art, craft and theory of teaching and learning. The educational process in design reflects some aspects of the normative realm of design engagement, but first and foremost the educational process begins a dialogue by introducing the domain itself.

Design Pedagogy

The design studio teaching and learning exchange is the focus of this study. As we will discuss in Chapter 3, the design studio critique methodology can be characterized by a number of educational models: situated learning, cognitive apprenticeship and the like. Design studios "are both the core of the curriculum and the *sanctum santorum* of the profession [of architecture]...the studio instructor is more mentor than professor, and classroom relationships are intense and personal" (Kosidowski, 1996, p.3). While this particular quotation refers only to an architectural studio, there is a fair amount of consistency between this characterization and the setting initially framing this work. In this context, the studio dialogue was situated in an interdisciplinary environment. Students

pursuing studies in landscape architecture, interior design, city planning, and architecture

shared the studio space and participated in a common design studio curriculum.

> The curriculum is structured around a design sequence
> that provides the means for examining and responding
> to the complex relationships between man and the
> built environment. The interplay of socio-economic
> dynamics and its influences are critically examined
> in the development of design theories and strategies.
> The design studio and jury are fundamental to the
> process of design, enabling students to broaden and
> demonstrate their understanding of the community's
> needs and the consequences of intervention. The
> overall objective is the development of confidence in
> one's ability to resolve problems with elegance and
> economy, and with a respect for both the land, its
> inhabitants and the man-made artifact. The design
> sequence provides the forum for vital dialogue, that
> not only question's society's value system and attitudes,
> but also guides the student in the development of
> practical and technical proficiency. The design studio
> and jury are invaluable for the refinement of analytical,
> discursive and conceptual skills.
> (Department of Environmental Design 1998)

While both the design studio and design jury are (currently) the pre-eminent and

predominant pedagogical devices used in the spatial design disciplines, there are notable

criticisms which caution against an unexamined view of their continued practice. Kathyrn

Anthony, a design educator and author, (1991) writes on the harmful rituals of educational

practice in both the studio and in design juries. She believes the existing systems are

characteristically male in approach, advocating an overly competitive (rather than

cooperative) relationship between students, as well as between instructors, and jurists.

She is concerned about the authoritarian structure which the studio and jury method may perpetuate, and advocates an adjustment in the student/instructor relationship through a students' bill of rights. Rather than abandoning the existing systems, Kathryn Anthony proposes mediated, cooperative, and self-reflective educational practices that will "create a healthier atmosphere in which students can learn and grow." (Anthony, 1991, p. 17)

The educator and activist Thomas Dutton (1991a; 1996; 1991b) examines the 'hidden curriculum' of the design studio which he goes on to define as the "unstated values, attitudes, and norms which stem tacitly from the social relations of the school and classroom as well as the content of the course" [Dutton, 1991 #170, p. 167). While he recognizes the centrality and "specialness" of the design studio in design (architectural) education, he vehemently criticizes unreflective forms of teaching practice:

> The studio – actually the orthodox pedagogies employed
> in the studio – is marked by serious flaws, flaws that
> often go unrecognized and actually counter sound
> teaching practice. What is often experienced in the
> studio culture is the legitimization of hierarchical social
> relations, the choking of dialogue, and the sanctioning
> of the individual consumption of 'acceptable' knowledge
> in a competitive milieu.... Characteristics of contemporary
> society – such as class, race, and gender discrimination
> and other asymmetrical relations of power – are all
> too often reproduced in schools and classrooms,
> including the design studio" (Dutton, 1991a, p. 165-166).

Specifically on hierarchy and competition, Dutton credits the pre-eminent design scholar Donald Schön and educator Chris Argyris's research on the design studio (Argyris, 1981; Argyris & Schön, 1974) with four important reflections on design pedagogy: i) the

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theories which instructors state to be informing their teaching activity are not apparent in their teaching practice, ii) students and instructors compete with each other for dominance in the invention dialogue, iii) the design studio "became a teacher-centered experience, where the learning of design was productive only to the extent that students understood and accepted what professors taught" (Argyris, 1981, p. 173), and iv) unarticulated beliefs in the theories and processes employed in the work inhibits and/or negates student ownership of both the process and the resultant (spatial) products.

These criticisms mark the studio enterprise with serious concerns about the hegemonic and political nature of the learning environment. To counter this in his own educational practice, Dutton attempts to bring these relationships to the fore by settling them purposefully on a visible edge of the studio curriculum. He suggests that studio education benefits from critical examinations which seek to make explicit the implicit forms of design studio culture.

To state that design studio *is* a culture is to recognize the complexity of this particular teaching and learning environment. Of significance to this study are reflections on the design act that are reflected in the pedagogical practices. While a great deal of information has been written about design activity, a fledgling taxonomy of design process realms would be of value as an overview to the field.

This proposed taxonomy is divided into the normative, behavioral, experiential, and linguistic design inquiry areas. There are many people who have written about and characterized design activity. The activities most are trying to articulate are the purpose-,

meaning-, process-, and product- making systems that guide design from conception to execution. There are many divergent reflections/opinions about how and what design processes do or are. Some (normative) explain the activity through the processes designers invoke. Some (behavioural) are grounded in psychological research. Some (experiential) seem to be more historically and phenomenologically oriented. Some (linguistic) are oriented towards language acquisition, metaphorical, and dialogic perspectives. Each of these process realms evidences a particular orientation to 'meaning-making,' or 'meaning construction,' or 'understanding' in design.

The Normative Realm

The normative realm is the most generally indicative of the processes employed in design – by examining what designers do. The normative is a practice oriented perspective which serves to uncover how designers act through design, and while the explicative potential of the normative realm of design activity is significant, it is important to recognize the self-referential and potentially stagnant nature of a learning activity defined in this way. In *Design Thinking*, Peter Rowe used an interview parsing case study method to research the normative activities of designers in action. He examined the 'protocol' of design, the "sequence of steps, moves, and other logical procedures that were employed...in design behavior" (Rowe, 1987, p.2). Through his research, Rowe is able to describe the episodic nature of design thinking:

First there is the "to and fro" movement between areas

of concern...there was movement back and forth between
exploration of architectural form and evaluations of
program, structure and other technical issues. Second,
there seem to be periods of unfettered speculation,
followed by more sober and contemplative episodes
during which the designer "takes stock of the situation".
Third, each episode seems to have a particular orientation
that preoccupies the designer. We might say that the
organizing principles involved in each episode take
on a life of their own....Here a "dialogue" between the
designer and the situation is evident.... Such situations
often subsequently gave rise to a certain amount of
backtracking, as the designer retrenched to what seemed
to be a more advantageous position. Finally, as the scope
of the problem became more determined and finite for
the designer, the episodic character of the process seems
to have become less pronounced. During this period a
systematic working out of issues and conditions took hold
within the framework that had been established.
(Rowe, 1987, p. 34-35)

Throughout this description of the design process, it is evident that the primary

'dialogue' is between the designer and the object or space that is constructed. 'Meaning-

making' is defined as a negotiated design behaviour that exists between a spatial *partis*

and refinement or 'retrenchment' of issues that serve to clarify the spatial product. The

writer/critic Rudolf Arnheim describes it as a goal oriented unfolding and testing which

"relies on some perceptual referent...a goal image." (Arnheim, 1993, p. 16) Goldsmidt,

quoted in Arnheim's work, defines the activity as "an interaction of arguments and [counter]

moves" (ibid., p. 15). The design theorist Nigel Cross (in Levy, 1990, p.42) identifies it as

"design knowledge [which] has been doggedly maintained as merely a form of tacit

knowledge, based primarily on knowing how things work." And Donald Schön refers to it

as technical rationality. Articulated in this way, design may be construed as an individualistic and proprietary process whereby, the form of 'meaning-making' is an internalized dialogue.

Donald Schön (1983; 1985; 1990), the most well known research scholar of design education, wrote "at its best the architectural [design] studio is an exemplar of education for artistry and problem-setting" (Schön, 1985, p. 6). He entitles this model 'reflection-in-action'. Reflection-in-action (also referred to as 'knowledge-in-action' and 'learning-by-doing') characterizes a positive view of the engaged activity of design – iterative, dialogic, creative, technical, and transformative. He advocates the educational model as an exceptional opportunity for grounding learning experiences. He then advocates the traditional master/student relationship as the method to forge these experiences, relying on the mastery of the studio teacher to guide the potentially mysterious process.

Schön does, however, point to a schism between a potentially powerful teaching and learning engagement with what he perceives as a crisis in professional knowledge (Willenbrock, 1991, p.105). This crisis he attributes to a dominance of technical rationality (the designer/object *partis* refinement process) which limits the problem setting domain because it does not account for, or assist, in the articulation of (social) issues which are uncertain, conflicting, and uniquely constituted - the 'indeterminate zones of practice' (Schön, 1990). Overall, it is interesting to note the contradiction in Donald Schön's work: he strongly advocates design studio teaching and learning for the complex experiential and cognitive associations which may be modeled and learned through it, yet he criticizes the

nature of the very practice which is a product of this pedagogic method, arguing that it does not adequately address issues of difference. On reflection, the *social form* of the design studio pedagogic engagement may account for this discrepancy.

The Behavioural Realm

The behavioural orientation to design inquiry is grounded in two psychological research areas: firstly, the exploration of the nature of individual human creativity and how one may come to acquire, use, and characterize creative/spatial abilities; and secondly, human behaviour arising from people's interaction with two and three dimensional spatial configurations. While these are very distinct from each other as areas of study, psychological research is the vehicle that provides insight into how these activities impact design process realms.

The development of individual creative/spatial aptitudes is a vast area of investigation. Golledge and Stimson (1997, p.157-158) provide an outline of the psychological dimensions of spatial abilities as: *spatial visualization and orientation* - the ability to cognitively manipulate two and three dimensional spatial phenomena which supports the visualization of spatial configurations; and *spatial relations*, the ability to associate and correlate spatially distributed phenomena concurrent with an understanding of the implications of that organization. While it is commonly understood that fundamental spatial aptitudes are inherent in human perceptual/sensory systems, enhanced aptitudes and abilities - in particular associative or symbolic attributions - are most often cultural

acquisitions. Research into creativity examines how people come to acquire these abilities by examining the cognitive processes that support, record, sort, analyze, store, and access the required information.

Additionally, this research is a link to the psychological research describing the creative/design process. In an exploration of design process realms, the 'analysis/synthesis' model is a dominant form. Cycles - described as insight, saturation, incubation, the uh-huh! and verification process model (Edwards, 1987), or the exploration/analysis, conceptual design, testing, refining, and representation scheme (Goldsby-Smith, 1996, Zeisel, 1984 #155) - are examples of the analysis/synthesis form: 'analysis' being the generative, information/inspiration gathering, inventive part of the model, 'synthesis' being the refinement, testing and synoptic activities. Hillier "(1996, p.61) refers to it as the "creative-predictive nature of the design process," where the process is seen as generally conforming to an inspirational or creative activity followed by a process of refinement.

The characteristics of this model are understood to follow a system where internal phases impact each other in a linear cyclical, or phased fashion. Overall, the analysis/synthesis model is typified as cyclical, phased, and reproducible. As previously discussed, an individual's activities within the normative design inquiry framework are often described this way (Rowe, 1987). It is a process where the procedural aspects of the process are standardized to such a degree that the appropriateness of the model to the problem setting domain may not be challenged. In fact, the architectural researcher Hillier

(1996) criticizes this process model as being *too* normative stating that the procedural

aspects of the system are not analytical – that is predictive – enough. He is articulating a

belief that reflects both on the 'softness' of the science which supports design decision

making, as well as on the normalization of design activity which ceases to question *a priori*

knowledge.

In contrast, an interesting educational study by the interior design educators

Portillo and Dohr (1989) explores the cognitive accommodation of design abilities. Using a

psychological theory and test called the Perry scheme, the design researchers attempted

to gain an understanding of the relationship between students' level of design thinking and

their past creative experiences. While they found that a relationship exists between past

experience and design thinking, the accommodation schema they used is revealing:

> The Perry scheme:
> The developmental trajectory from simplistic to complex
> thinking can be categorized into major positions: dualism,
> multiplicity, and commitment in relativism.... According
> to this theory, a limited thought perspective shifts into
> an increasingly complex world view. Mastery of
> knowledge is initially approached in a dualistic fashion.
> In a black and white world, there are the right answers
> and the wrong answers. This dualism later gives way
> to an awareness that a large array of solutions to
> intellectual and ethical issues exist in a context of
> relativism.... The desire to eliminate chaos results
> in the formation of personal principles. It becomes
> possible to generate commitment within a relativistic
> world. Commitment is also seen as essential in
> higher orders of creative thought.
> (Portillo & Dohr, 1989, p. 97)

Acquisition of design skills seen both as an individual cognitive accommodation, as well as a socially constructed educational experience seems to be plausible within this model. The dualistic, multiplistic, relativistic model explains both the evolution of cognitive experience and a probable form of progressive saturation in design culture.

The second area of behavioural/psychological design inquiry is the interaction of people within space. The general intent here is to increase what Hillier referred to above as the predictive ability of design for spatial use. Environment-behaviour researchers champion this inquiry framework. Many researchers (Marcus & Francis, 1998; Rapaport, 1998; Schneekloth & Shibley, 1995; Whyte, 1980) advocate the necessity of human activity and 'place-making' theory as a requisite foundation of the act of design. From the early behaviourist studies of Sommer (see also Golledge & Stimson, 1997, Chapter 6; 1969) to the pseudo-scientific explorations of spatial form and human occupation by Christopher Alexander (1964; 1977), to wayfinding and mnemonic research, psychological/behavioural research is a well substantiated orientation to 'meaning-making' in understanding the behavioural design process realm.

The Experiential Realm

The third realm of design process is the experiential realm that accommodates experiential/phenomenological perspectives, as well as the historical ones. Phenomenological perspectives include the sensory, temporal relationships of the human

body as it moves through space (Bloomer & Moore, 1977) and, significantly for our purposes, the history of major design education traditions. The fit of the historical to the experiential realm is situated in the phenomenological (experience-based) pedagogical traditions of architectural education: firstly, in the apprenticeship system of early guild traditions; secondly, in the Beaux Arts studio tradition; and thirdly, in Bauhaus pedagogy. A related issue, though not included in this study, could be the pedagogy evolving out of the phenomenological writings of Charles Norberg-Schultz (1980; 1991a; 1991b). This may also help contextualize current issues in design pedagogy. For our purposes, we use the phenomenological concept presented by Charles Norberg-Schulz - that being, embedded intentionality – to examine the pedagogy of major architectural traditions.

Further and rather abstractly, it can be asserted that all historical perspectives are phenomenological in orientation. As the past is situated beyond the reach of our immediate socio-cultural, temporal and spatial experience, the act of engaging in the artifacts (texts) of those cultures is to filter it through an experience of the present. This action renders the historical text a *phenomenon* whereby the construction of meaning of the historical life-world is a conscious reflection of the necessity of the present. This conscious reductionism is an act of phenomenological analysis, an intentional historical re-enactment.

Architectural Education in France at the Ecole des Beaux Arts

Prior to the founding of the Académie Royal d'Architecture in France in 1691,

architectural training was maintained through the medieval guild traditions. Colbert, on

behalf of Louis XIV, established the Academies as a way of controlling and limiting the

power of the medieval guilds.

> The Academy of Architecture and the Academy of
> Painting and Sculpture offered Colbert a means of
> attacking the medieval guilds, which were not under
> direct royal control. The academies attracted architects,
> painters, and sculptors by elevating these men in the
> hierarchy of society from the rank of craftsmen to that of
> philosophers. The word "academy" suggests the great
> philosopher of antiquity, Plato, as well as the academies
> of the Italian Renaissance with their humanist learning.
> Transplanted, as it were, from Italy, academies took root
> in France and thrived, but did not entirely replace the
> medieval guilds. Academicians continued to have
> apprentices to whom they taught their art. An *élève* of the
> Academy of Architecture learned to design not there but
> in the workshop, the atelier, of his master. (Among the
> changes the Renaissance had brought about, the
> workshop was no longer at the construction site, the
> *chantier*, but had become a studio, an atelier; accordingly
> drawing became the first skill for the student of
> architecture to learn.) The student's drawing board was
> in the atelier, not at the Academy's *école*. At the
> Academy his lessons were mostly lectures; what was
> taught there was material communicable in words.
> (Chafee, 1977, p. 62), (see also Harbeson, 1927))

Following and enduring through a series of minor revolutions and, most certainly, a

significant political Revolution, architectural education survived in France, though the royal

academies did not. The Ecole des Beaux-Arts arose through the unsealed halls of the

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royal academies to the Ecole Polytechnique of 1795. The Ecole Polytechnique was the

revolutionary response to France's perceived military vulnerability and social/public

responsibilities. It was established to train architects and engineers in civic building.

(Chafee, 1977, p.72)

Formally established in Paris in 1819, the Ecole des Beaux Arts (more precisely

the Section d'Architecture of the Ecole des Beaux Arts) was responsible for France's

architectural education until 1968. Chafee writes that the curriculum structure at the Ecole

remained relatively static throughout its history. It was a hierarchical model requiring a

student to rise through four sections. Initially the student registered as an *aspirant à*

l'Ecole des Beaux Arts after having found a master or *patron* who would accept them into

their privately operated atelier. The ateliers were established and operated as private

architectural schools, though small or one-student ateliers were more likely to be working

offices. The large ateliers run by a *patron* were teaching facilities where many students of

varying levels - from *nouveaux* (novices) to *anciens* (senior students) - gathered to study

design. It was a cooperative system where the novices would support and work for the

senior students while gaining valuable experience toward their own education. The culture

and spirit of the ateliers is still evident in the design studio of today – with the exception of

the candles and mass:

> The ateliers ... occupy quarters in old buildings where
> cheapness and dirt keep company. A crowd of students is
> not a desirable neighbor: they sing much, often through
> the night. The walls of the rooms are decorated with
> caricatures and pictures until a dark somber tone is

attained that accords well with the dirt, dishevelment, and confusion of the place. The lighting is by candle, each man furnishing his one or two candles that are stuck to the board on which he is working. The air of the room is close, for there is no ventilation. Silence never prevails. Jokes fly back and forth, snatches of songs, excerpts from operas, at times even a mass may be sung, yet amid the confusion and the babble - strange as it may seem - work proceeds. (Chafee, 1977/ p. 91)

According to Chafee the *aspirant* in the atelier attended lectures at the Ecole, and had access to its library and its collection of casts for drawing practice. In combination with his study at the atelier, the French student was likely to spend two years as an *aspirant* before succeeding at the exams which signaled his[5] formal acceptance into the school, as well as signaling his rise to the second level (second class) of study.

The second class student continued attending lectures. Significantly though, he now started to participate in his own *concours d'emulation* – competitions. *Concours* were the focus of the design curriculum for the balance of the student's academic career. Competitions for a second class student varied in content and scope: in architectural composition there were two kinds - rendered projects (*projets rendu*) and sketch problems (*equisses*); in analysis of the classical architectural orders: doric, ionic and corinthian (*éléments analytiques*); in construction there were four competitions – one in general construction, one in each of wood, stone, and iron. (Chafee, 1977, p. 83); one in perspective; one in mathematics; and, one in ornament and human figure drawing

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[5] According to Chafee, women were allowed to apply for entry to the Ecole at the turn of the twentieth century. Enrollment in the school was predominantly male.

(*dessin*). Additionally, the second class student had studies in geometry, stereotomy

(stereometry defined in the Gage Dictionary (1998, p. 1435) as the determination of the

size and shape of solid bodies), as well as written exercises and examinations. This body

of work was not usually completed in one year - it usually took two to four years. Students

would continue through the course work by electing to enter a competition.

> Because students could progress each at his own speed,
> a student had to enroll for every *concours* he wished to
> enter. For architectural *concours* the process of
> enrollment was remarkable.... The student would sign his
> name in the book of registration for *concours* and would
> receive a copy of the program. He then went into a small
> cubicle - in French, one says he went *en loge* - and there
> he had twelve hours in which to study the program, and if
> he wished, to draw a small preliminary sketch recording
> the essential form of his architectural design. All the
> students *en loge* for a *concours* could talk together, but
> no one else was allowed to join them. If a student wished
> to take part in the *concours*, he would when he left the
> building give his sketch to the guard, who acknowledged
> receipt in the registration book. Once out, the student
> could not return. He would take a tracing of his sketch
> back to his atelier, where with the criticism of his *patron*
> he would develop his idea.
>
> Ultimately, if the student wanted to, he would
> prepare drawings for submission on an appointed date to
> the school for judgment. The jury compared each
> student's preliminary sketch with his final entry, for the
> two had to reflect the same idea. If they did not, the jury
> declared the submission out of the competition, *hors de
> concours*, and for that *concours* the student would get no
> credit. The purpose of this complicated arrangement was
> to insure that each student thought for himself, that he did
> not have his work done for him by his *patron*. Students
> often were judged *hors de concours*, often they were
> simply failed by the jury, and often they registered for
> *concours* but did not submit final drawings or even a

preliminary sketch. Many students found it worthwhile
every month to enroll for an architectural *concours*, get
the program, and try that day to conceive of a building,
even if there was no time for further study.
(Chafee, 1977, p. 84-85)

Students of the first class, having received enough competition points or *valeurs* to

rise from the second class, participated in *concours* as well. These *concours* were more

complex projects – large scale public and private buildings. First class students were also

granted the opportunity to enter the Ecole's *grand concours*, competitions that carried

prize money as well as *valeurs*. These experiences ultimately led to a student's

preparation for entry into the fourth level of study – the competition for the Grand Prix de

Rome.

The Grand Prix de Rome (the *Prix*) was the culmination of architectural education

in France. Only one student would win the prize, and "until 1867 this prize was the only

termination of the curriculum other than the age limit. " (Chafee, 1977, p. 88) The age

limit was thirty years. Rather it seems, students would drift off when they thought they had

acquired enough skills to enter practice using the rank of *Ancien Elève de l'Ecole des*

Beaux Arts as the title to mark their distinction in practice. Winning the Grand Prix de

Rome carried the ultimate distinction. The honour, though primarily conferred upon the

student, was also shared by the *patron* and the atelier supporting the successful bid. The

winner of the *Prix* was sent to the French Academy in Rome to study for four or five years.

"Upon his return to France, he was likely to be made an Achitecte du Gouvernement, and thereafter [be] in the employ of the state..." (Chafee, 1977, p.87).

Formed in 1819, the Ecole des Beaux Arts was dismantled in 1968 and organized into separate architectural faculties entitled *Unités Pédagogiques*. A number of these (originally eight) units are still located in Paris where they continue to teach architecture. And though structured differently, the competitions for the Grand Prix de Rome d'Architecture are still held.

The examination of architectural education at the Ecole situates a number of pedagogic traditions that are still active in design studio culture: it begins at the institutional scale by signaling the split between practice and schooling, granting the academies or institutions the ability to confer status through educational apprenticeship. In the studio, it is manifest in the discrete division of content areas in composition, geometry, construction and the like. It points to the educational practice of initiating the novice design student in drawing. It situates the center of the design curriculum in the atelier or studio environment. It alludes to the hierarchical nature implicit in many of the processes. It anchors the dominance of the project brief as a significant point of communication between student and professor. And, inadvertently, it implies the tradition of activities that support the design of this pedagogic vehicle. Most importantly, it situates the most transformative educational dialogue in the atelier or design studio. And a studio environment that by all psychological

and physical health standards still leaves much to be desired. Finally, throughout the

centuries, it celebrates the work and camaraderie of a thriving design studio culture.

To review the second major educational tradition in architecture, we will now

turn to design education in Germany just after the turn of the twentieth century, following

the First World War, at the burgeoning of the modern age.

Architectural Education in Germany at the Bauhaus

The impact of the Bauhaus school has also profoundly influenced our

understanding of design education and design production. Architects, designers and

artists have now - at the turn of the twenty-first century - lived, studied, deified, idolized,

rallied behind, and argued against so many of the issues and principles anchored in the

Bauhaus it is difficult to separate our innate and acculturated knowing from that of our

'objective' knowing, our relativistic rationalities.

In his book *Sources of Architectural Form: A Critical History of Western Design

Theory,* Mark Gelertner (1995) helps to make sense of the contradictory influences framing

this paragon of modernism.

> The Bauhaus, most scholars agree, marks a watershed in
> twentieth-century architectural history between the early
> proliferation of competing theories and the later
> emergence of one dominating paradigm, the International
> Style. In the standard interpretation of the Bauhaus,
> offered first by its founder Walter Gropius and later by the
> early historians of the Modern Movement, Nikolaus

Pevsner and Sigfried Giedion, the Bauhaus was seen to rise dramatically above the competing 'isms' of the time and to offer a modern vision of design and education appropriate for the new century. In this view, the Bauhaus not only found an objective 'language of vision' that finally rid design of the subjectivism and relativism of the previous century, but also finally developed a modern and progressive alternative to the old art academies.

This view is not accurate. To begin with, Banham pointed out, 'While repudiating the "false standard of the academies", [the proponents of the Modern Movement] accepted many academic ideas without knowing where they had come from'. The aesthetic theories of the Bauhaus in particular 'resemble those of French academic origin'. (20) The other revision of the traditional history of the Bauhaus came from Wolfgang Pehnt and Marcel Franciscono, both of whom showed how the Expressionist foundations of the Bauhaus were far more pervasive than was formerly believed. (21) So instead of viewing the Bauhaus as a filter that blocked the Expressionist extremes and the decaying Academic tradition, it is more accurate to think of the Bauhaus as a melting pot into which many of the earlier Neoclassical, Romantic and Positivist ideas were blended. (Gelertner, 1995, p. 238-239)

The contradictory influences begin with the founding of the Bauhaus in Weimar, Germany. An opportunity to reorganize and unite two academies - the Grand Ducal Saxon Academy for Pictorial Art and the Grand Ducal Saxon Academy for Arts and Crafts – was granted to Walter Gropius in 1919. "The theoretical curriculum of an art academy combined with the practical curriculum of an arts and crafts school was to constitute the basis of a comprehensive system for gifted students. Its credo was: The Bauhaus strives to coordinate all creative effort, to achieve, in a new architecture, *the unification of all*

training in art and design (Gropius, 1952, p.22). Quite explicitly, Gropius (influenced also by socialist ideology) was attempting to both act against the perceived bourgeois practices of the academies, and secondly, return to the medieval guild traditions – these traditions forming the model of the ideal forming the model of the ideal synthetic educational experience. A pedagogy where 'novice to master', 'craft to art', and 'theory to practice' are reconciled. The desire to unify, or at least, co-locate these factors point to some of the conflicting issues the Bauhaus faced during its growth and evolution.

The artist and pedagogue, Johannes Itten, designed the preliminary design course at the Bauhaus. The course remained relatively consistent throughout its history, though subsequent instructors - the constructivist artist László Moholy-Nagy, and the artist, painter and colourist Josef Albers, influenced it substantially. Initially, it was a six month compulsory course for entry level students. It was a prerequisite to gain admission into the Bauhaus workshops.

Though initially the attempt was made to embed the theory portion of the curriculum into the workshop, it soon developed that the preliminary course curriculum was divided into two major sections: instruction in 'Craft' (*Werklehre*) and instruction in 'Form' (*Formlehre*). Preliminary course instruction in Craft initiated the experimentation that would continue once the student gained entry into a workshop as an apprentice. The major curricular objective of craft instruction in stone, wood, metal, clay, glass, colour and textiles

was to establish a knowledge of, and free experimentation with both materials and the tools that shape them.

Instruction in Form problems was broken into three categories – observation, representation and composition. Observation included the study of nature through drawing, and the analysis of materials. Representation was comprised of descriptive geometry, techniques of construction, plan drawing and model building. Composition dealt with theory: theory of space, theory of colour, and theory of design. (Gropius, 1952, p. 23 & 25) According to Howard Dearstyne (1986), a student of the Bauhaus, the preliminary course dealt ostensibly with the exploration of texture and patterning, with physical and visual asymmetry in two- and three- dimensional compositions, with experimentation in found materials, and with drawing. Furthermore, he stated that students were directed away from architectural precedent in both drawing and reading – "in fact, he (Albers) emphasized the uselessness of reading anything..." (Dearstyne, 1986, p. 90). Given the educational context, this can be seen to be self-consciously anti-historical in approach, a process which arguably provides opportunity for an 'objective language of vision' to flourish.

> Gropius was delighted with the new formulation of the
> Vorkurs. Moholy-Nagy's 'language of vision' seemed to
> provide a solid and universal base of knowledge about
> form that could guide the students to create beautiful
> objects without leading them into preconceived styles....
> Yet just how universally applicable is this language? It
> clearly derived from the simple, planar style of
> Elementarism which he was developing in parallel with

van Doesberg, and as long as students designed within the particular Bauhaus style it could be said that they followed Maholy-Nagy's visual principles.... The principles in the 'language of vision' might be sufficiently universal to describe *after the fact* all artistic production...[but] once one concedes that the language really only *generates* a certain range of styles, then its claim to universality disappears. Moholy-Nagy's language is really a normative guide to a particular Modernist aesthetic. [emphasis added] (Gelertner, 1995, p.247)

As we can see, this approach to *Formlehre* was pedagogically formal, that is, highly institutionalized, spawning ultimately the architecture commonly known as the *International Style*. Ironically, architectural historians take issue with this type of architecture being referred to as *Bauhaus Style* architecture. As an aside, the perceived acceptability of the term *International Style* versus *Bauhaus Style* seems to rest in the profound belief that the *International Style* (still!) does not define a *style* at all. That is, that the *International Style* is an aesthetic vision which transcended/transcends the traditional claim of style and its associated reference to taste. (read: the derision of the association to bourgeois academic traditions). The *Bauhaus Style*, however, seems to have successfully maintained this connection to taste especially as it is often used to describe – as mentioned earlier - the 'design' quality of consumer goods. When referenced in this way, the *Bauhaus Style* normatively describes a modern aesthetic sensibility.

To return to the Bauhaus - while it is important to show evidence of the formalist tendencies of Bauhaus pedagogy, it is also important to note that 'post-modern' design teaching and learning does not continue to advocate 'a' specific aesthetic ideology. The

threads connecting the traditions arising from the Bauhaus are anchored in select

educational philosophies and methodologies - the most significant educational practice

being the overt orientation to student-centered learning.

> Practical and theoretical studies are carried on
> simultaneously in order to release the creative powers of
> the student, to help him grasp the physical nature of
> materials and the basic laws of design.... The discovery
> and proper valuation of the individual's means of
> expression shall be sought out. The creative possibilities
> of individuals vary. One finds his elementary expressions
> in rhythm, another in light and shade, a third in color, a
> fourth in materials, a fifth in sound, a sixth in proportion, a
> seventh in volumes or abstract space, an eighth in the
> relations between one and another, or between the two to
> a third or fourth. (Gropius, 1952, p.24)

And not only is the process student centered, it is also phenomenological in

orientation according to Findeli, as the "...synthetic stage of the design process is

achieved by *intuition*, because the complexity of the problem is beyond the reach of the

sequential and verbalized process of the intellect.... In other words, the...method has to

proceed from eyesight to insight... " (Findeli, 1990, p.12), see also (Findeli, 1994, p. 64).

This educational model (as we will elaborate upon in Chapter 2) has its strong affinities

with the work of the pragmatist philosopher and educationalist John Dewey (1934; 1938;

Oliver, 1999).

> Moholy-Nagy found in Dewey's work the theoretical
> foundation and justification of his own pedagogy....
> Dewey's fundamental theoretical model is relativistic; no
> human phenomenon can be considered without its
> general physical and social environment. What Dewey

calls situation is constituted by the interactions between the individual (or the group) and the environment.... An experience, in Dewey's terms, is a set of situations; the structure of the set, its *gestalt*, decides whether the experience is meaningful or not for the individual. Consequently, education is the art of conceiving situation sets susceptible to promote the growth of personality, that is, the art of proposing a meaningful "continuum of experience." (Findeli, 1990, p.14)

In a sense the issues have now come full circle. The establishment of the experiential/phenomenological design process realm includes the historical perspective of design studio traditions. These traditions are seen to be, in and of themselves, phenomenological in orientation – valuing experiential educational models.

Many of the academic traditions found in the pedagogy of the Beaux Arts were, unwillingly and perhaps unwittingly, still active in the pedagogy of the Bauhaus. The differences in some traditions were more perceptual than real, for instance in the dual system of theory and craft. While the initial and conceptual intent was to create a pedagogy idealized from the guild traditions, in practice it became necessary to default to the academic tradition, that is, to teach theory and craft independently and to use the studio as a place of synthesis.

There were significant distinctions from the academies in the pedagogy of the Bauhaus. And some of these traditions are still imbedded in current design studio pedagogy: the Bauhaus emphasis on student-centered learning; the construction of experiences leading to intuitive approaches to design invention; the mythologizing of

technology; the concentrated examination of material qualities as a process of design invention; personality dominant mentorship; and, in some measure, the adherence to modernist (or post-modernist) aesthetic principles. The phenomenological approach to design teaching and learning is what situates this historical perspective in this section concerned with the experiential design process realm.

In addition to what we have come to explore as the normative, behavioural, and now, experiential design process realms, current critical design pedagogy examines a huge range of issues which impact design studio teaching: challenges from the profession and accrediting bodies; the impact and validation of design research; administrative concerns such as diminishing resources; and the like (Allen, 1992; Dutton, 1991a, 1992, 1996; Nicol & Pilling, 2000). As we discussed in the Design Pedagogy section of this chapter, ideas related to dialectics, that is, issues of 'voice' are of particular interest to the future of design studio teaching and learning: practices which challenge the under- and mis- represented issues of gender, class, culture, and technology. Significant communication about these issues and about hegemonic design practice is required to move forward. The next design process realm, the linguistic realm, is where the dialogic orientation to design invention is broadly situated.

The Linguistic Realm

Linguistics is the study of language. Language is, of course, common to all of the ways we have come to examine the nature of design invention. But the linguistic realm

itself is an attempt to employ the metaphor of language structures to inform how we may think about design. It also sees metaphor itself as a model of design creation (Coyne & Snodgrass, 1992). The linguistic realm broadly explains the nature of design invention as forms of language practice – as a system of words, symbols, gestures and their rules of use - viewing design as an act *in* language. This language is situated in design vocabulary, in the syntax of words and symbols, in language acquisition (which is a specific goal of pedagogy), in cultural forms of language practice, and not suprisingly, in forms of dialogue.

To begin with vocabulary is - quite simply - to recognize the specific jargon of a discipline. This (expanding) set of words is the territories and textures of practice. They define areas of work, of research, of pedagogy, and of identity. Incidentally, the definition of a profession encompasses at least two specific criteria - a specialized body of knowledge and professional autonomy (Macmillan, 1993). The former of these traits points to a vocabulary that addresses the needs of the members of a specific culture, and reciprocally, assists in the construction and definition of the culture itself.

Syntax is part of the underlying matrix of language, and it lives in design through the construction of words and symbols. Written, visual and oral language patterns support the expressions of a particular culture. According to Pierre Bourdieu (1977; 1984; 1990; 1991; 1994) language, in fact, legitimizes and controls the forms of cultural production. (Please keep in mind that while Bourdieu is talking about 'linguistic practice' and 'speech',

visual/spatial products – drawings, models – should be considered part of our 'linguistic

set'.)

> To reproduce in scholarly discourse the fetishizing of the
> legitimate language which actually takes place in society,
> one only has to follow the example of Basil Bernstein,
> who describes the properties of the 'elaborated code'
> without relating this social product to the social conditions
> of its production and reproduction, or even, as one might
> expect from the sociology of education, to its academic
> conditions. The 'elaborated code' is thus constituted as
> the absolute norm of all linguistic practices.... The
> linguistic 'norm' is imposed on all members of the same
> 'linguistic community', most especially in the educational
> market and in all formal situations in which verbosity is
> often de rigueur. (Bourdieu, 1991, p.53)

He goes on to describe the linguistic norms as the gatekeepers of social

acceptance in a specific language community, a community that monitors the ability of its

members to conform to the socially conditioned patterns of speech. This, of course,

directly relates to the specific goal of pedagogy, that is, acquisition.

> The competence adequate to produce sentences that are
> likely to be understood may be quite inadequate to
> produce sentences that are likely to be listened to, likely
> to be recognized as acceptable in all the situations in
> which there is occasion to speak. Here again, social
> acceptability is not reducible to mere grammaticality.
> Speakers lacking the legitimate competence are de facto
> excluded from the social domains in which this
> competence is required, or are condemned to silence.
> What is rare, then, is not the capacity to speak, which,
> being part of our biological heritage, is universal and
> therefore essentially non-distinctive, (18) but rather the
> competence necessary in order to speak the legitimate

language which, depending on social inheritance, re-translates social distinctions into the specifically symbolic logic of differential deviations, or, in short, distinction. (19) (Bourdieu, 1991, p.55)

In reference to cultural forms of language practice it is important to emphasize that visual forms of communication are likely to be the dominant forms of cultural production in design. The evolving spatial lexicon is the subject of study and the grist of practice. Dialogue is a fundamental, complex, and uniquely constituted phenomenon of design studio education.

The phenomenon of dialogue *per se* is not a dominant theme in the literature of design education. Currently, the notion of 'voice' in design/architectural education seems to be posited with some vigour (Allen, 1992; Dutton, 1991a, 1992, 1996; Nicol & Pilling, 2000). 'Voice' construed in this way is a political issue; it is a call for an examination of power structures embodied in design issues, in design processes, in spatial design products, and in educational and work practices.

Other writers, such as the architectural theorist Perez-Gomez (also Gamard, 1995; and Osgood, 1992; 1999) examine at the phenomenon of discourse as a long established architectural tradition. They elaborate on the nature of discourse as a purveyor of culture, and additionally, accord it a status that transcends normative or technical rationality.

Much of the writing on the critique or 'crit' session, surprisingly, eschews examination of the ostensibly similar educational event studied here (Allen, 1992; Anthony,

1991; Dutton, 1991a, 1992, 1996; Nicol & Pilling, 2000). The focus and criticism of the critique system is situated in the architectural jury process – a pedagogic process that formally began in the competition-laden educational system of Ecole des Beaux Arts. While the review of student work is no longer literally performed by a jury, behind closed doors, these authors describe and take issue with the current public form of this discursive educational practice, and suggest ways of improving the educational content of the experience.

Consistent with the argument set forth here, the researcher David Flemming in *Design Talk: Constructing the Object in Studio Conversations* (1998), locates and explores the dialogue of the studio critique session as the constitutive event in design education.

To review, the linguistic realm views design as an act *in* language. The metaphor facilitates design pedagogy as a process of enculturation. Design vocabulary and syntax, the oral, written, visual and spatial forms of language practice, and the constitutive nature of the critique session dialogue, are the currency of design studio teaching and learning. To restate, the territories of language practice must be constantly monitored to construct opportunities to challenge the under- and mis- represented issues of gender, class, culture, and technology.

This chapter situates design pedagogy in the prevalent realms of design thinking. Beginning with the complex and elusive definitions of design, we start to unravel the ways people come to make sense of, and act through, the processes of design. To be explicit, the design act embeds intention, and these intentions can be read. A critical examination

of some of the issues of design studio practice point to how the educational process can be changed to address issues of difference.

Normative, behavioural, experiential and linguistic design process realms provide opportunities to consider how people come to understand the creative act of design. The normative realm considered design through the 'norms' of what designers do. Behavioural perspectives used positivist science to describe design invention through human activity. The experiential realm explored phenomenological educational traditions that continue to influence pedagogic practices. The linguistic realm invokes design as a language and suggests there are profound implications embedded in the everyday dialogue of design culture.

The following chapter explores educational models that correspond to the design studio critique method. This elaboration is intended to provide alternative ways of thinking about design studio teaching and learning.

Chapter 3: Educational Perspectives

This chapter explores a number of educational perspectives that serve to illuminate characteristics of the design studio critique engagement. Situated learning, situated cognition, cognitive apprenticeship, problem-based practices, and educational connoisseurship are just some of the terms used to describe the learning model consistent with the type employed in the design studio. A review of these models informs the nature of the pedagogic process employed in the design studio critique.

Each of these models are, in some way, based on a psychological or cognitive phenomenon called 'scaffolding' or 'modeling' which explains how understanding may be structured between the participants engaged in the invention dialogue[6]. Central to each of these models is an acknowledgment that learning takes place within a social context and conversely, that each social context provides insight into a particular form of educational engagement. Constructivism[7] assists in illuminating this orientation.

Much of the current literature on the above concepts relates in a primary way to the work of John Dewey (1954-1952). John Dewey (1934; 1938) was an American philosopher, writer, and educationalist who was instrumental in the development of the

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[6] 'Invention dialogue' alludes to the characterization of the design studio critique as a shared, creative act.
[7] See Chapter 4 for a further discussion of Constructivism

Progressive School Movement, and was a strong advocate for the ideals of democracy and pragmatism (Oliver, 1999; Schubert, 1986). John Dewey's steadfast belief in democracy provided the foundation to support his educational perspective.

The members of the Progressive School Movement believed that traditional curricular perspectives did not allow the learner to be an active participant in their own education. The reformists sought to change the practice of 'acting upon' students, to 'acting with' them. The proponents of this educational reform movement brought student experience and active engagement to the forefront of the educational dialogue of the time. They believed that there was a correlation between an educated citizenry, and active and informed social (civic) engagement.

To this day, discussions about teaching and learning are supported by John Dewey's articulation of both the benefits of locating the learner at the center of the educational experience, and the socially constructed nature of the teaching and learning transaction.

Tangentially, it is important to be mindful of an important distinction between some of the concepts we are about to review and their application to the design studio critique engagement. In this study, the teaching and learning engagement occurs between adults. Much of the literature reviewed focused on engagements between adults and children. While age is certainly a factor, the dominant characteristics cited in the literature which characterize the teaching and learning exchange is *domain knowledge and experience*: the dialogue posited between the two participants is a dialogue between a domain 'novice'

and a domain 'expert'. For the purpose of this study, the characterizations of 'novice' and 'expert' are the important factors under consideration.

Two other people who have impacted the contemporary discussion on learning theory are psychologists Jean Piaget and L. S. Vygotsky. Each of these men illuminate interesting ideas that can relate to an understanding of the phenomenon of the design studio critique. The work of the famous child psychologist Jean Piaget is a taxonomy or framework of the cognitive development of children. He was interested in the progressive accommodation of cognitive abilities as children grow and mature. Piaget was not really concerned with *how* new things were accommodated by children, he was more interested in finding out where the cognitive changes seem to happen through a child's development (Fosnot, 1996a). What is of interest to this discussion is not Piaget's correlation of cognitive ability to age. Of interest is the research supporting an understanding of cognition that is both progressive and accommodative in its nature.

The psychological theorist L. S. Vygotsky on the other hand, was very interested in *how* the development may be accounted for. He was looking for the factors that seem to contribute to the accommodation of new perspectives into the cognitive abilities of his subjects. His 'discovery' was that both language and environment impact on this change and growth of cognitive abilities. The language/environment interface was termed the Zone of Proximal Development (ZPD) (Fosnot, 1996a; Rieber & Carton, 1987). The ZPD is a form of dialogue between a domain novice and expert for the purpose of learning. The purpose of the dialogue is a "precursor to inner speech – once a concept is explicated in

dialogue the learner is enabled to reflect on the dialogue, to use its distinctions and connections to reformulate his own thought" (Rieber & Carton, 1987, p. 4). The explanation for the cognitive phenomenon is that of 'scaffolding'.

Scaffolding is possible through dialogue by its iterative and associative context, that is, through repetitive and multi-modal cognitive associations. The process of scaffolding also implies a leap of faith or trust negotiated through dialogue, via which the novice (though not just the novice) may open to the accommodation of new ideas or information. The thought processes are 'structured' to support a shared understanding. The Zone of Proximal Development – 'scaffolding' or 'modelling' - is used to describe a number of educational perspectives that share a belief in the 'situatedness' of the educational event. As earlier outlined, the terms used to define these approaches are: situated learning, situated cognition, guided participation, cognitive apprenticeship, problem-based learning, and, educational connoisseurship. Some of these terms are used to explain very similar phenomena. Other terms provide greater distinction in approach.

The situated learning (also situated cognition, guided participation) perspective (Anderson, Reder, & Simon, 1996; Hicks, 1995; Rogoff, 1990; Schubert, 1986; Wilson, 1993; Wood, 1997) ties learning to the context in which the information is shared and/or constructed. The learning engagement - how the learning is to take place, where the learning is to be situated, and the goals of the experience – are tied to a specific (information-rich) context. Learning, situated in this way, is believed to provide many opportunities for the learner to understand the nuances of the information and to provide a

rich experiential backdrop to support future encounters. The proponents of this perspective advocate the applicability of the learning experience to other 'like experiences', to the creation and maintenance of a discursive educational culture, and to the pragmatically situated nature of the encounter. The situated learning model is the pedagogic method that most informs the design studio teaching and learning exchange.

Detractors of this method caution that the transferability of knowledge learned in this way is not fully understood. They are concerned that the situationally-bound nature of the experience may curtail appropriate transfer of knowledge to other situations. Research indicates that knowledge seems to be transferable "where the tasks share cognitive elements" (Anderson et al., 1996, p.6). When they do not, much is unknown. Other criticisms are that the experiential base must become quite exhaustive to account for significant variations in context. Another criticism is the characterization that situated learning is more 'training' oriented than 'education' oriented. Further, the general conditions, abstractions, and larger principle lessons are overly vested in the interests of the mentor or domain expert. This leads to the concern that pedagogic hegemony may play a role in the efficacy of this learning perspective.

Though cognitive apprenticeship shares in the 'situatedness' of the learning process just described, it is more closely affiliated with the psychological perspective articulated by L.S. Vygotsky. While it would be incorrect to say that greater attention may be paid to the design of the educational event in the cognitive apprenticeship approach in contrast to the situated learning approach, the interest in *how understanding may be*

fostered more effectively may be an appropriate distinction in approach. The cognitive

apprenticeship perspective (Farmer, Buckmaster, & LeGrand, 1992) is built upon the idea

of the ZPD – cognitive scaffolding and/or modeling through the interpersonal dialogic

exchange. The focus is on the transaction methodology. Akin to the situated learning

model, educational scenarios are designed to become progressively more complex, to

introduce more sophisticated concepts, and to transfer more responsibility to the learner as

the lessons continue. In the article just cited, the cognitive apprenticeship approach is

advocated and recognized in the teaching and learning methods of certain professions

namely: aviation, medicine, law. To those, we will add the design professions, as again

there is a correlation between this model and the design studio teaching and learning

exchange. The cognitive apprenticeship model focuses on the transactional nature of the

learning environment

The problem-based learning perspective takes the teaching and learning methods

of the professions, and both explains and advocates how and why these models may work

educationally. It is an approach that works backwards from the approach just discussed.

It is normative in orientation. This perspective starts with a teaching and learning model

type (based in the professions) and then reflects upon why this problem-based approach

may work. The educational researcher Gijselaers (1996) qualifies the value of this

educational model as: non-repetitive, constructionist, socially- and contextually-bound. An

important quality of the problem-based learning perspective is that learning unfolds

through a journey. "Problems are encountered before all relevant knowledge has been

acquired and not only after reading texts or hearing lectures about the subject matter underlying a problem" (Gijselaers, 1996, p.17).

The undefined and exploratory nature of the problem-based approach seems to confront both the content and action of an educational event: it provides the learner with an experiential basis to draw upon - not just about 'the stuff' - but more importantly, how to work through undefined situations. The confrontation with proceeding through a process without the certainty of 'rightness' is a difficult and valuable educational experience. This uncertainty, more than any other quality, is what constitutes 'real life' experience. It grounds the problem-based approach to meaningful action.

Educational connoisseurship is an educational model articulated by Elliot Eisner. Its contribution to understanding the design studio critique is the activity of criticism. Educational connoisseurship is structured on both the tradition of arts education and the appropriation of cultural sensibilities in 'high' art forms: painting, opera, fine wine and the like (Eisner, 1998; Schubert, 1986). The attainment of critical abilities, to distinguish and articulate subtle qualitative and contextual relationships, is a defining characteristic of connoisseurship and criticism, which Eisner views appropriate to the goals of education. Implicitly, the design studio critique is consistent with much of this approach. It is interesting to note that the educational tradition and the appropriation of cultural sensibilities are often referenced inside the design culture itself. The design studio critique models criticism as a valid form of educational engagement.

While situated learning, cognitive apprenticeship, problem-based practices, and educational connoisseurship describe some of the "implicit expressions of our theory of learning" (Duffy & Jonassen, 1991, p. 7), by articulating some of the methods used to support the design studio educational event, it is constructivism that frames the nature of the pedagogic enterprise.

Constructivism should be characterized as a theory or philosophy of knowledge (a paradigm) rather than an educational 'perspective'. Constructivism is not simply a model or a method. In the preface to *Constructionism: Theory, Perspectives, and Practice*, Catherine Twomey Fosnot defines constructivism as follows:

> Constructivism is a theory about knowledge and learning; it describes both what "knowing" is and how one "comes to know." Based on work in psychology, philosophy, and anthropology, the theory describes knowledge as temporary, developmental, nonobjective, internally constructed, and socially and culturally mediated. Learning from this perspective is viewed as a self-regulatory process of struggling with the conflict between existing personal models of the world and discrepant new insights, constructing new representations and models of reality as a human meaning-making venture with culturally developed tools and symbols, and further negotiating such meaning through cooperative social activity, discourse, and debate. (1996b, p. ix)

Many authors in education (Ackermann, 1996; Cobb, 1996; Cunningham, 1991; Duffy & Jonassen, 1991; Glasersfeld, 1996; Gould, 1996; Kafai, 1996) as well the authors cited in Chapters 1 and 4 of this study have reflected on the nature of constructivism to explain human meaning-making – how and why it occurs. It is discussed here to reflect on

the value of the design studio critique and to help to move it forward. It provides the basis for poising this question: given the nature of meaning-making is temporal, developmental, nonobjective, internally constructed, socially and culturally mediated and negotiated, how should we adjust the form of the design studio critique to honour this understanding?

'Attend to the dialogue' is the contention at the heart of this thesis.

To conclude, from an educational perspective how does one attend to dialogue? Two authors have provided interesting answers to this question – the first seems consistent with the pseudo-pragmatic nature of this chapter, the second will be left to the next.

In *The Power of Mindful Learning*, the educator Ellen Langer simply and precisely answers how to attend to educational dialogue. Her answer is 'mindfully'. She articulates the concept of mindfulness to be "(1) openness to novelty; (2) alertness to distinction; (3) sensitivity to different contexts; (4) implicit, if not explicit, awareness of multiple perspectives; and (5) orientation in the present" (Langer, 1997, p. 23). The condition of mindfulness opens both a cognitive and social door to the construction of a shared understanding by attending to 'the other'. While Ms. Langer has devoted an entire book to understanding this phenomenon, a direct way to achieve the connection in dialogue is to employ what she calls 'conditional' language.

Conditional language provides options inside dialogic utterances. To illustrate with an example of one of her earlier research studies:

In that study students were introduced to a set of

objects either conditionally ("This could be a...")
or in absolute form (This is a..."). As in the pilot
study...we tested to see whether conditional
information allowed for alternatives. We found that
only those students taught conditionally thought to
use the objects in creative ways. (ibid., p. 19)

Since attending to creativity is an explicit element in the design undertaking, the use of

conditional language seems to provide a teaching technique that would facilitate the

invention dialogue. This one orientation in dialogue may have profound rewards.

To sum up, educational perspectives illuminate aspects of the design studio

critique methodology. These perspectives serve reflection upon the pedagogic norm used

in the design studio, because many characteristics are shared between them. The unique

design studio application of the situated learning model likely has educational value to

others: design studio education is 'expert' in a particular form of meaning-making dialogue.

It provides for the shared understanding of domain knowledge, it constructs and maintains

elements of a design culture, and it provides opportunity to engage in a shared creative

act. It is an ambitious educational undertaking that "...is both an individual achievement

and a social one" (Rieber & Carton, 1987, p.4).

Chapter 4: Dialogism and Social Constructionism

The journey into the ideas of dialogism and social constructionism was, suprisingly enough, not apparent at the outset of my interest in the *dialogue* of the design studio critique. The path came about by following up and contrasting how *design* was characterized. As discussed in Chapter 2, the design act is often viewed as a proprietary activity - an individual or set of individuals is seen to be responsible for a spatial (in this case) design product that carries a cultural narrative. Upon further consideration though, this idea becomes unsatisfactory in its ability to explain how the product comes about to be a *certain* way. The *certain* way implies, as Bourdieu contends[8], the socially accepted cultural narrative that both offers and limits certain forms of design representation.

To explore this question we must look at the dialogic design activity that imbues the spatial product with meaning – both in terms of the immediate and specific process, as well as in terms of the historical and cultural unfolding of the meaning-making process. While it is not the intention here to study the specific normative engagement of this educative process (the he did, she did, then what happened transactions), which are certainly part of dialogic and social negotiation, the role and nature of dialogism and social constructivism, in and of themselves, have illustrative potential in the understanding of the pedagogy of the design studio critique.

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[8] See the Linguistic Realm in Chapter 2.

Dialogism

> Paradoxical statements, resistant in their indecipherable
> oddness, break the smooth routine of exchanging
> already-thought ideas.   (Kingswell, 2000, p.17)

The nature and intent of the dialogic activity is not consensus. The activity is more

important when it leads to understanding, and distinction of differences. The educationalist

Alexander Sidorkin (1999) has written a very interesting account of the phenomena of

discourse based significantly on the work of Mikhail Mikhailovich Bakhtin (1895-1975).

Shortly this work will discuss some of the issues Sidorkin presents in detail, but first, the

work of M. M. Bakhtin should be introduced.

In *The Dialogic Imagination*, the linguistic theorist M. M. Bakhtin (1981, p. xix), is

credited with attributing the perception of language to its socio-ideological identity – that is,

language is anchored in its context (see also McDermott & Tylbor, 1995). The intent is not

to imply the nature of dialogic identity is a fixed entity, but rather, the identity transforms as

the engagement within the culture becomes more complex. The metaphor used to

illustrate this idea is one of centrifuge, a force that is simultaneously both transgressive

and synthetic:

> A unitary language is not something that is given,
> but it is in its very essence something that must
> be posited – at every moment in the life of language
> it opposes the realities of *heteroglossia* [the root
> 'hetero' – of difference] but at the same time the
> ideal of a single, holistic language makes the

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actuality of its presence felt as a force resisting an
absolute *heteroglot* state; it posits definite boundaries
for limiting the potential chaos of variety, thus
guaranteeing a more or less maximal mutual
understanding. [italics added, editor comments
removed] (Bakhtin, 1981, p. xix)

Bakhtin is interested in the transgressive aspect of language and less concerned

with the clustering or unifying tendencies. He is engaged by the "never ever before"

quality of dialogue (Sidorkin, 1999, p.27) - its temporal and creative nature. The changing

or morphing quality of discourse is interesting because it validates some aspects of the

nature of the educational perspectives discussed earlier in Chapter 3 – situated cognition,

cognitive apprenticeship, and educational connoisseurship. Though, to bring distinction to

the ideas, Bakhtin is not advocating a shared understanding, nor is he occupied with

addressing the nature of education. He is exploring the "gradual appropriation" of

language - the illuminating potential, the dislocations, and the plurality of experience

inherent in the dialogic act (Bakhtin, 1981, p. xx).

Alexander Sidorkin (1999) bridges Bakhtin's ideas about dialogue to the

educational setting. To begin, he characterizes our century to be about difference – about

fundamentally different ways of being human both as individuals, and as cultures. He

goes on to construct an argument about a 'primary moral language' structured through a

particular invocation of discourse - an event, he argues, which ought to be situated in

education.

"A good school is one that addresses the issue of difference in a specific way of dialogue" (Sidorkin, 1999, p. 2). He distinguishes between dialogue as a form of communication and dialogue as a form of being, an ontological concept. Dialogue is not simply a form of language to be used but rather it is to be viewed as a relational form of engagement – a relationship we enter into. Sidorkin recommends three constituent elements required for the dialogic process to successfully occur within an educational setting: i) a device for multiple voices, ii) a device for cohesion, and iii) a device for carnival. The device for multiple voices ("polyphony" is Bakhtin's term) structures the "original relational incident" (ibid., p. 112). This 'incident' is broadly characterized as the systematic or institutionalized dialogic event – in the context of this study, it is the design studio critique.

The ubiquity of the design studio method and its general structure in design education is the significant issue here. The *culturally instituted* nature of a dialogic event is an important factor in design pedagogy. In contrast, in other general science or liberal arts undergraduate programs, dialogic engagement may not form a dominant presence in the curriculum. Monological (lecture) forms of teaching and learning are more common in such programs. Where dialogue may substantially occur – in undergraduate language and science labs, for example – the dialogic activity generally does not represent the focus of the curriculum, as it does in schools of design. Nor is the student/instructor ratio, or the frequency of occurrence of dialogue likely to be as intense. (Please note that I do not mean to imply that dialogue happens exclusively in design schools. A primary form of

dialogic engagement is likely reflected through a variety of applications in undergraduate studies in Music, Fine Arts, and Nursing, for example.) Graduate study as a whole has more institutionalized dialogic engagements, namely seminars.

The initial conversational event establishes an 'appointment' for dialogic engagement. Further, Sidorkin advises it should establish a shared text. 'Text' used in this way, is intended to be read as an inclusive set of written, visual, and/or oral items. This text establishes a common language for the conversation. It is important that the *device for multiple voices* inherently provides for substantively different readings of the text. According to Bakhtin, "two rival hypotheses make the minimum explanatory apparatus for any fact. If the rival hypothesis may be easily ruled out, this would be a sign that the results are trivial, or peripheral for human existence" (Sidorkin, 1999, p. 33).

The second constituent element required for the dialogic process to occur within an educational setting is a *device for cohesion*. Cohesion is not defined here as unity, but as a process which publicly values a way to deconstruct the initial relational device in order that individuals in a community may come to know and understand others' differences - cohesion is the provision of a *civic* device to *discuss difference* with *civility*. Once again, deference is made to the plurality of voice that gives occasion to meaning construction.

A *device for carnival* is the celebration which values "conflict irresolution...the ability to leave conflicts unresolved is a major social asset, perhaps more important than the ability to solve conflicts" (ibid., p. 97). 'Third discourse' as Sidorkin also describes it, is the dialogue that ceases to be about the content of the conversation, and instead frolics

with the form. It is a type of play that, he and Bakhtin suggest, "makes the world closer and more familiar. It is "ambivalent laughter, embracing the new and the old, the death and birth, beginning and end" (ibid., p.139). In third discourse, the relational act of just being in a conversation becomes the most important feature of the dialogic activity.

These three elements are discussed to provide insight to the opportunities in dialogue. While design studio pedagogy *uses* a formally instituted form of dialogue to engage in the meaning making process, a fresh view of *construction through* dialogue would loosen the grip of dominant normative practice to define the engagement - the proprietary activity in which an individual or set of individuals is seen to be responsible for a design product carrying a cultural narrative. Bluntly put, the goal of a fine *design school* ought to be the most engaging experience *in design talk*. And design talk, by its very nature is a shared construction.

Design practice, its processes and its products are absolutely relevant as educational scenarios, and they are fully present in the engagement of design talk, but they do not comprise the educational goal. The goal of the mutually constructed dialogic activity is to understand how a spatial product comes about, in all varieties, to be a *certain* way. Language and skill appropriation at all levels and in all modes of dialogic engagement are the important educational goals.

The next part of this chapter deals with how an understanding of social constructivism may serve to illuminate the nature of the design studio critique.

Social Constructivism

> *Every* meaning is co-authored; *every* word uttered
> by an individual belongs in part to somebody else.
> (Bakhtin in Sidorkin, 1999, p.13)

Social constructivism is concerned with the phenomena of cultural cohesion. This is not to say that all cultural situations are cohesive, which is rarely the case; rather, the degree to which a culture replicates itself, its history, traditions, beliefs, and practices is the constructionist view of social life.

Of particular interest to this study is design studio pedagogy - the art, theory, and craft of teaching and learning through the design studio critique. Of particular interest to *this* discussion is the shared and constitutive nature of the creative design act embodied in the design studio critique. To articulate a persuasive argument about the shared nature of the creative act, a comparison between the 'proprietary' activity of design creation, and the social nature of the creative design act will now be explored.

In her book, *Invention as a Social Act*, the rhetorician and educator Karen LeFevre (1987) confronts the competing interests of invention. She characterizes the proprietary aim as:

> Invention as individual introspection: ideas are
> created in the mind of an atomistic individual and
> then expressed to the rest of the world. Invention
> is regarded as an unfolding, a manifestation of an
> individual's ideas, feelings, voice, personality, and
> patterns of thought. (LeFevre, 1987, p.1)

While many qualities of this position are authentic, LeFevre argues that it is an:

> incomplete picture...[which] may unduly constrain
> the development of processes of invention....
> Invention is better understood as a social act, in
> which an individual *who is at the same time a
> social being* interacts in a distinctive way with
> society and culture to create something.
> [italics added] (ibid., p. 1)

She goes on to articulate seven social aspects of invention to support this proposition. LeFevre begins with an assertion that the individual, as 'self', is socially influenced. The 'nature or nurture' debate in this case is not to be contested; merely the inclusion of 'nurture' is sufficient to present the idea that a socially constituted 'self' is a factor. The second issue that supports a view of the socially constructed nature of invention is the recognition that disciplinary traditions provide "a foundation of knowledge accumulated from previous generations, knowledge that constitutes a social legacy of ideas, forms, and ways of thinking" p. 34. Thirdly, language and symbolic capital (see also Bourdieu, 1991) are socially construed and shared within a discourse community, and in practice may actually define the community. Fourthly, she recognizes the role of people such as facilitators, editors, and critics to influence the inventive act. Fifthly, supported by numerous authors (Bourdieu, 1984, 1991; Bourdieu et al., 1994; Eisner, 1998; Geertz, 1973; McDermott & Tylbor, 1995; Stevens, 1998; Tzamir & Churchman, 1989), institutional cultures – organizations, governments, academic communities - "serve to transmit expectations and prohibitions, encouraging or discouraging certain ideas, areas of investigation, methods of inquiry, types of evidence, and rhetorical forms" (LeFevre, 1987,

p.34-35). Sixthly, she recognizes the import of the social community being ready to receive or disregard ideas based upon the state of normative practice. And finally, she talks about the role of pedagogy that may account for an individual's internalization of a dialogue "with an imagined other or a construct of audience that supplies premises or structures of belief guiding the inventor...and [which may] conceptualize patterns of discourse" (ibid., p. 34.) This final construct supports the discussion of cognitive apprenticeship, and 'connoisseurship' reviewed in Chapter 3, but also goes to the very heart of the matter under consideration – the shared and constitutive nature of the dialogue of the design school critique.

It is important to re-articulate the 'positions of difference' discussed earlier in this chapter because, without it, the insidious nature of institutional culture can take on a decidedly pejorative connotation in a discussion of social constructionism. The ability to tolerate irresolution of conflict mediates a homogeneous and potentially myopic environment. An exploration of institutional culture and practices can serve to challenge the status quo by revealing both the inclusionary and exclusionary nature of the dialogues it serves. Social constructivism viewed in an institution or domain context can be seen to express, replicate and, used effectively, transform the values held by that culture (Bourdieu, 1984, 1991; Bourdieu et al., 1994; McDermott & Tylbor, 1995; Tzamir & Churchman, 1989).

To view the design studio critique through the lens of dialogism and social constructivism is to open up to the profound capacity of educational dialogue.

Phenomenological, symbolic interactionist, hermeneutic and constructivist paradigms have

provided a backdrop to understand the subsequent unfolding of this research journey.

Conclusion

Through the journey of this work, there emerge five significant findings:

1) The fundamental nature of design pedagogy is dialogic.

2) Important traditions of architectural education are still embedded in design studio practice, such as the orientation to student-centered learning. The hegemonic nature of certain educational practices must continue to be challenged.

3) Design educators should be more attentive to 'dialogue' as the purveyor of cultural norms and values.

4) Design education has developed a certain 'expertise' in the 'invention dialogue' that should be shared with other disciplines.

5) Qualitative inquiry paradigms provide processes that will assist in articulating the valuable contribution design brings to society.

The voyage through this research project *Construction Through Critique: the dialogic form of design studio teaching and learning*, has been an unpacking of issues embodied in this title: 'construction' alludes to traditions of architectural education, to the phenomenological experience of design education, to constructivist educational perspectives of learning, to an orientation toward social constructivism, and to the 'constructed' unfolding of this work itself. 'Through' refers both to the temporal and phenomenological nature of experience, and to the qualities of dialogue which are constitutive, iterative, creative and transformative. 'Critique' is the dialogic activity of the design studio experience. It is an institutionalized form of educational criticism, which must be constantly monitored to ensure it is used to empower *all* the people engaged in this

educative act. The dialogic form of design studio teaching and learning' simply describes the manifestation of the design critique as an educational event – it is a dialogue. Conversely, how it comes about to be a *certain* type of dialogue comprises the balance of this story.

To conclude, this work is not limited to a view of dialogue defined as conversations between two individuals. In this context, dialogue is the communication of a vast array of words, actions, thoughts, and symbols that are meaningful to the culture of design. Dialogue and the internalization of design values occur at a subconscious or implicit level with most educators and designers. In order to advance our understanding, to transform our practices, and to contribute to other disciplines – dialogue - as a *transformative* process should be made more explicit. This thesis adds to the small body of knowledge that currently exists which addresses dialogue in design studio education.

Future research is needed which takes the theoretical premise of dialogue and applies it to the normative practice of the design studio critique session. There is a major structural change that will transform studio teaching embedded in dialogic theory. The Beaux Arts was tied to Classicism. The Bauhaus was tied to Modernism. It begs the question: how is design pedagogy reflected in (post) Post-Modernism? It is through a reflective approach to dialogic engagement, an interpretation of Alexander Sidorkin's contention that dialogue is an ontological concept, a relationship we enter into. An understanding of, and an engagement *through* dialogue is a promising future for the design studio critique.

References

Ackermann, E. (1996). Perspective-Taking and Object Construction: Two Keys to Learning. In Y. B. Kafai & M. Resnick (Eds.), *Constructionism in Practice: Designing, Thinking & Learning in a Digital World* (pp. 71-96). New Jersey: Lawrence Erlbaum Associates.

Alexander, C. (1964). *Notes on the Synthesis of Form.* Cambridge: Harvard University Press.

Alexander, C., Ishikawa, S., & Silverstein, M. (1977). *A Pattern Language : Towns, Buildings, Construction.* New York: Oxford University Press.

Allen, B. (1992). *Transforming the Curriculum.* Paper presented at the ACSA Architectural Education Conference: Where We Are, Walt Disney World.

Anderson, J. R., Reder, L. M., & Simon, H. A. (1996). Situated Learning and Education. *Educational Researcher, 25*(4), 5-11.

Anthony, K. H. (1991). *Design Juries on Trial: The Renaissance of the Design Studio.* New York: Van Nostrand Reinhold.

Argyris, C. (1981). Teaching and Learning in Design Settings. In Consortium of East Coast Schools of Architecture. & Andrew W. Mellon Foundation. (Eds.), *Architecture Education Study: The Papers* (pp. 2v.). [s.l.]: Andrew W. Mellon Foundation.

Argyris, C., & Schön, D. A. (1974). *Theory in Practice : Increasing Professional Effectiveness* (1st ed.). San Francisco: Jossey-Bass Publishers.

Arnheim, R. (1993). Sketching and the Psychology of Design. *Design Issues, IX*(2, Spring 1993), 15-19.

Bakhtin, M. M. (1981). *The Dialogic Imagination: Four Essays* (C. Emerson & M. Holquist, Trans.). Austin: University of Texas Press.

Benedetti, P., & DeHart, N. (Eds.). (1996). *On McLuhan: Forward Through the Rearview Mirror.* Scarborough, Ontario: Prentice-Hall Canada Inc.

Bloomer, K. C., & Moore, C. W. (1977). *Body, Memory and Architecture.* New Haven: Yale University Press.

Bogdan, R. C., & Biklen, S. K. (1992). *Qualitative Research for Education: An Introduction to Theory and Methods* (2nd ed.). Boston: Allyn and Bacon.

Bogdan, R. C., & Taylor, S. J. (1975). *Introduction to Qualitative Research Methods: A Phenomenological Approach to the Social Sciences*. New York: John Wiley & Sons.

Bourdieu, P. (1977). *Outline of a Theory of Practice* (R. Nice, Trans.). New York: Cambridge University Press.

Bourdieu, P. (1984). *Distinction: A Social Critique of the Judgement of Taste* (R. Nice, Trans.). Cambridge, Massachusetts: Harvard University Press.

Bourdieu, P. (1990). *The Logic of Practice* (R. Nice, Trans.). Stanford, California: Stanford University Press.

Bourdieu, P. (1991). *Language and Symbolic Power* (G. Raymond & M. Adamson, Trans.). Cambridge, Massachusetts: Harvard University Press.

Bourdieu, P., Passeron, J.-C., & de Saint Martin, M. (1994). *Academic Discourse* (R. Teese, Trans.). Stanford, California: Stanford University Press.

Chafee, R. (1977). The Teaching of Architecture at the École des Beaux-Arts. In A. Drexler (Ed.), *The Architecture of the École des Beaux-Arts* (pp. 61-110). Cambridge, Mass.: MIT Press.

Charmaz, K. (2000). Grounded Theory: Objectivist and Constructivist Methods. In N. K. Denzin & Y. S. Lincoln (Eds.), *Handbook of Qualitative Research* (2nd ed., pp. 509-536). Thousand Oaks, California: Sage Publications, Inc.

Cobb, P. (1996). Where is the Mind? A Coordination of Sociocultural and Cognitive Constructivist Perspectives. In C. T. Fosnot (Ed.), *Constructivism: Theory, Perspectives, and Practice* (pp. 34-54). New York: Teachers College Press.

Coyne, R., & Snodgrass, A. (1992). Models, Metaphors and the Hermeneutics of Designing. *Design Issues, IX*(1, Fall 1992), 56-74.

Cunningham, D. J. (1991). Assessing Constructions and Constructing Assessments: A Dialogue. *Educational Technology*(May), 13-17.

de Wolfe, G. D., Gregg, R. J., Harris, B. P., & Scargill, M. H. (Eds.). (1998). *Gage Canadian Dictionary.* Toronto: Gage Educational Publishing Company.

Dearstyne, H. (1986). *Inside the Bauhaus.* New York: Rizzoli.

Denzin, N. K., & Lincoln, Y. S. (2000a). Introduction: The Discipline and Practice of Qualitative Research. In N. K. Denzin & Y. S. Lincoln (Eds.), *Handbook of Qualitative Research* (2nd ed., pp. 1-28). Thousand Oaks: Sage Publications, Inc.

Denzin, N. K., & Lincoln, Y. S. (2000b). Part II: Paradigms and Perspectives in Transition. In N. K. Denzin & Y. S. Lincoln (Eds.), *Handbook of Qualitative Research* (2nd ed., pp. 157-162). Thousand Oaks, California: Sage Publications, Inc.

Dewey, J. (1934). *Art as Experience.* New York: Minton, Balch.

Dewey, J. (1938). *Experience and Education.* New York: The Macmillan Company.

Dilnot, C. (1989). The State of Design History, Part II: Problems and Possibilities. In V. Margolin (Ed.), *Design Discourse: History, Theory, Criticism* (pp. 233-250). Chicago: The University of Chicago Press.

Duffy, T. M., & Jonassen, D. H. (1991). Constructivism: New Implications for Instructional Technology. *Educational Technology*(May), 7-12.

Dutton, T. A. (1991a). The Hidden Curriculum and the Design Studio: Toward a Critical Studio Pedagogy. In T. A. Dutton (Ed.), *Voices in Architectural Education: Cultural Politics and Pedagogy* (pp. 165-194). New York: Bergin & Garvey.

Dutton, T. A. (1992). *Architectural Education and Critical Pedagogy : To Hell with Where We Are, Where Are We Going?* Paper presented at the ACSA Architectural Education Conference: Where We Are, Walt Disney World.

Dutton, T. A. (1996). Cultural Studies and Critical Pedagogy: Cultural Pedagogy and Architecture. In T. A. Dutton & L. H. Mann (Eds.), *Reconstructing Architecture: Critical Discourses and Social Practices* (pp. 158-201). Minneapolis: University of Minnesota Press.

Dutton, T. A. (Ed.). (1991b). *Voices in Architectural Education : Cultural Politics and Pedagogy.* New York: Bergin & Garvey.

Edwards, B. (1987). *Drawing on the Artist Within : An Inspirational and Practical Guide to Increasing Your Creative Powers* (1st Fireside – ed.). New York: Simon & Schuster.

Eisner, E. (1998). *The Enlightened Eye: Qualitative Inquiry and the Enhancement of Educational Practice.* Columbus, Ohio: Prentice-Hall, Inc.

Environmental Design. (1998). *Department of Environmental Design: Program Description,* [web page]. CADLAB [1998, March 7].

Farmer, J. A., Jr., Buckmaster, A., & LeGrand, B. (1992). Cognitive Apprenticeship: Implications for Continuing Professional Development. In H. K. M. Baskett & V. J. Marsick (Eds.), *Professionals' Ways of Knowing: New Findings on How to Improve Professional Education* (pp. 41-49). San Francisco: Jossey-Bass Publishers.

Findeli, A. (1990). Moholy-Nagy's Design Pedagogy in Chicago (1937-46). *Design Issues, VII*(1), 4-19.

Findeli, A. (1994). Ethics, Aesthetics and Design. *Design Issues, 10*(2, Summer 1994), 49-68.

Flemimg, D. (1998). Design Talk: Constructing the Object in Studio Conversations. *Design Issues, 14*(2), 41-63.

Fosnot, C. T. (1996a). Constructivism: A Psychological Theory of Learning. In C. T. Fosnot (Ed.), *Constructivism: Theory, Perspectives, and Practice* (pp. 8-33). New York: Teachers College Press.

Fosnot, C. T. (Ed.). (1996b). *Constructivism: Theory, Perspectives, and Practice.* New York: Teachers College Press.

Foucault, M. (1970). *The Order of Things: An Archaeology of the Human Sciences.* London: Tavistock Publications.

Gall, M. D., Borg, W. R., & Gall, J. P. (1996). *Educational Research: An Introduction* (6th ed.). New York: Longman Publishers.

Gamard, E. B. (1995). Virgil/Beatrice: Remarks on Discursive Thought and Rational Order in Architecture. *Journal of Architectural Education, 48*(3), 154-167.

Geertz, C. (1973). *The Interpretation of Cultures; Selected Essays*. New York: Basic Books.

Gelertner, M. (1995). *Sources of Architectural Form: A Critical History of Western Design Theory*. New York: St. Martin's Press.

Gijselaers, W. H. (1996). Connecting Problem-Based Practices with Educational Theory. In L. Wilkerson & W. H. Gijselaers (Eds.), *Bringing Problem-Based Learning to Higher Education: Theory and Practice*. San Francisco: Jossey-Bass Publishers.

Glaser, B. G. (1978). *Theoretical Sensitivity : Advances in the Methodology of Grounded Theory*. Mill Valley, Calif.: Sociology Press.

Glaser, B. G. (1992). *Basics of Grounded Theory Analysis : Emergence vs Forcing*. Mill Valley, CA: Sociology Press.

Glaser, B. G., & Strauss, A. L. (1967). *The Discovery of Grounded Theory : Strategies for Qualitative Research*. Chicago: Aldine Pub. Co.

Glasersfeld, E. v. (1996). Introduction: Aspects of Constructivism. In C. T. Fosnot (Ed.), *Constructivism: Theory, Perspectives, and Practice* (pp. 3-8). New York: Teachers College Press.

Goldsby-Smith, T. (1996). Fourth Order Design: A Practical Perspective. *Design Issues, 12*(1, Spring 1996), 5-25.

Golledge, R. G., & Stimson, R. J. (1997). *Spatial Behavior: A Geographic Perspective*. New York: The Guilford Press.

Gould, J. S. (1996). A Constructivist Perspective on Teaching and Learning in the Language Arts. In C. T. Fosnot (Ed.), *Constructivism: Theory, Perspectives, and Practice* (pp. 92-102). New York: Teachers College Press.

Gropius, W. (1952). The Theory and Organization of the Bauhaus. In H. Bayer & W. Gropius & I. Gropius (Eds.), *Bauhaus Weimar 1919-1928, Dessau 1925-28* (pp. 20-30). Boston: Charles T. Branford Co.

Harbeson, J. F. (1927). *The Study of Architectural Design : With Special Reference to the Program of the Beaux-Arts Institute of Design*. New York: The Pencil Points Press Inc.

Hawkins, J. M., & Allen, R. (Eds.). (1991). *The Oxford Encyclopedic English Dictionary.* New York: Oxford University Press.

Hicks, D. (1995). Discourse, Learning, and Teaching. In M. W. Apple (Ed.), *Review of Research in Education* (Vol. 21, pp. 49-95). Washington, D. C.: The American Educational Research Association.

Hillier, B. (1996). *Space is the Machine: A Configurational Theory of Architecture.* Cambridge: Cambridge University Press.

Johnson, R. B. (1997). Examining the Validity Structure of Qualitative Research. *Education, 111*(2), 282-293.

Kafai, Y. B. (1996). Learning Design by Making Games: Children's Development of Design Strategies in the Creation of a Complex Computational Artifact. In Y. B. Kafai & M. Resnick (Eds.), *Constructionism in Practice: Designing, Thinking & Learning in a Digital World* (pp. 71-96). New Jersey: Lawrence Erlbaum Associates.

Kinchloe, J. L., & McLaren, P. (2000). Rethinking Critical Theory and Qualitative Research. In N. K. Denzin & Y. S. Lincoln (Eds.), *Handbook of Qualitative Research* (2nd ed., pp. 279-313). Thousand Oaks, California: Sage Publications, Inc.

Kingswell, M. (2000, July 2000). Against Smoothness. *Harper's Magazine, 301,* 15-18.

Kohl, H. (1992). *From Archetype to Zeitgeist: Powerful Ideas for Powerful Thinking.* Boston: Little, Brown and Company.

Kosidowski, P. (1996, March 28, 1996). *Building a Foundation: Architecture Education and Writing Pedagogy.* Paper presented at the CCCC Convention.

Langer, E. J. (1997). *The Power of Mindful Learning.* Reading, Massachusetts: Addison-Wesley Publishing Company, Inc.

LeFevre, K. B. (1987). *Invention as a Social Act.* USA: Southern Illinois University Press.

Levy, R. (1990). Design Education: Time to Reflect. *Design Issues, VII*(1), 42-52.

Lincoln, Y. S., & Guba, E. G. (2000). Paradigmatic Controversies, Contradictions, and Emerging Confluences. In N. K. Denzin & Y. S. Lincoln (Eds.), *Handbook of Qualitative Research* (2nd ed., pp. 163-188). Thousand Oaks, California: Sage Publications, Inc.

Livesey, G. (1995, 1995). *Towards a Redefinition of Design*. Paper presented at the 83rd ACSA Annual Meeting.

Macmillan, C. J. B. (1993). Ethics and Teacher Professionalization. In K. A. Strike & P. L. Ternasky (Eds.), *Ethics for Professionals in Education: Perspectives for Preparation and Practice* (pp. 189-201). New York: Teachers College Press.

Manu, A. (1994). Dialogues. *The Humane Village Journal, 1*(1), 31-114.

Marcus, C. C., & Francis, C. (1998). *People Places : Design Guidelines for Urban Open Space* (2nd ed.). New York: Van Nostrand Reinhold.

Maxwell, J. A. (1996). *Qualitative Research Design : An Interactive Approach*. Thousand Oaks, Calif.: Sage Publications.

McDermott, R. P., & Tylbor, H. (1995). On the Necessity of Collusion in Conversation. In D. Tedlock & B. Mannheim (Eds.), *The Dialogic Emergence of Culture* (pp. 218-236). Chicago: University of Illinois Press.

Mooney, R. L. (1975). The Researcher Himself. In W. Pinar (Ed.), *Curriculum Theorizing: The Reconceptualists* (pp. 173-207). Berkeley, California: McCutchan Publishing Corporation.

Nicol, D., & Pilling, S. (Eds.). (2000). *Changing Architectural Education: Towards a New Professionalism*. London: E & FN Spon.

Norberg-Schultz, C. (1980). *Intentions in Architecture*. Cambridge, Mass.: MIT Press.

Norberg-Schultz, C. (1991a). The New Tradition. *Architectural Design, 61*(1& 2), 92-96.

Norberg-Schultz, C. (1991b). Order and Change in Architecture. In M. Quantrill & B. Webb (Eds.), *Constancy and Change in Architecture* (pp. 43-89). USA: Texas A & M University Press.

Oliver, M. (1999). *History of Philosophy*. Great Britain: Prospero Books.

Osgood, R. (1992). *Completing the Interpretive Construct: The Work of Art and Architectural Discourse*. Paper presented at the ACSA Architectural Education Conference: Where We Are, Walt Disney World.

Partridge, E. (1983). *Origins : A Short Etymological Dictionary of Modern English* (1983 – ed.). New York: Greenwich House : Distributed by Crown.

Perez-Gomez, A. (1999). Hermeneutics as Discourse in Design. *Design Issues, 15*(2), 71-80.

Portillo, M. B., & Dohr, J. H. (1989). Design Education: On the Road to Thought Development. *Design Studies, 10*(2), 96-102.

Rapaport, R. (1998). *Kaplan McLaughlin Diaz : Placemaking : Innovation and Individuality.* Gloucester, Mass.: Rockport Pub.

Rieber, R. W., & Carton, A. S. (Eds.). (1987). *The Collected Works of L. S. Vygotsky* (Vol. 1, Problems of General Psychology). New York: Plenum Press.

Rogoff, B. (1990). *Apprenticeship in Thinking: Cognitive Development in Social Context.* New York: Oxford University Press.

Rowe, P. G. (1987). *Design Thinking.* Cambridge, Massachusetts: The MIT Press.

Schneekloth, L. H., & Shibley, R. G. (1995). *Placemaking : The Art and Practice of Building Communities.* New York: Wiley.

Schön, D. A. (1983). *The Reflective Practitioner: How Professionals Think in Action.* USA: Basic Books.

Schön, D. A. (1985). *The Design Studio: An Exploration of Its Traditions and Potentials.* London: RIBA Publications Limited.

Schön, D. A. (1990). *Reflective Practice. The Rhetoric of Design in Built Environment* [1 videocassette (45 min.)]. Winnipeg: s.n.

Schubert, W. H. (1986). *Curriculum: Perspective, Paradigm and Possibility.* New York: Macmillian Publishing Company.

Schwandt, T. A. (2000). Three Epistemological Stances for Qualitative Inquiry: Interpretivism, Hermeneutics, and Social Constructionism. In N. K. Denzin & Y. S. Lincoln (Eds.), *Handbook of Qualitative Research* (2nd ed., pp. 189-214). Thousand Oaks, California: Sage Publications, Inc.

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Seidman, I. E. (1991). *Interviewing as Qualitative Research: A Guide for Researchers in Education and the Social Sciences*. New York: Teachers College Press.

Sidorkin, A. M. (1999). *Beyond Discourse: Education, The Self, and Dialogue*. Albany, New York: State University of New York Press.

Simon, H. A. (1996). *The Sciences of the Artificial* (3rd ed.). Cambridge, Massachusetts: The MIT Press.

Sommer, R. (1969). *Personal Space; The Behavioral Basis of Design*. Englewood Cliffs, N. J.,: Prentice-Hall.

Stevens, G. (1998). *The Favored Circle: The Social Foundations of Architectural Distinction*. Cambridge, Massachusetts: The MIT Press.

Strauss, A. L., & Corbin, J. M. (1990). *Basics of Qualitative Research : Grounded Theory Procedures and Techniques*. Newbury Park, Calif.: Sage Publications.

Strauss, A. L., & Corbin, J. M. (1998). *Basics of Qualitative Research : Techniques and Procedures for Developing Grounded Theory* (2nd ed.). Thousand Oaks: Sage Publications.

Tzamir, Y., & Churchman, A. (1989). An Ethical Perspective on Knowledge in Architectural Education. *The Journal of Architectural and Planning Research, 6*(3, Autumn 1989), 227-239.

Van Manen, M. (1990). *Researching Lived Experience: Human Science for an Action Sensitive Pedagogy*. The Althouse Press.

Whyte, W. H. (1980). *The Social Life of Small Urban Spaces*. Washington, D.C.: Conservation Foundation.

Willenbrock, L. L. (1991). An Undergraduate Voice in Architectural Education. In T. A. Dutton (Ed.), *Voices in Architectural Education : Cultural Politics and Pedagogy* (pp. 97-120). New York: Bergin & Garvey.

Wilson, A. L. (1993). The Promise of Situated Cognition. In S. B. Merriam (Ed.), *An Update on Adult Learning Theory* (pp. 71-79). San Francisco: Jossey-Bass Publishers.

Wood, J. (1997). Situated Criticism and the Experiential Present. *Design Issues, 13*(2, Summer 1997), 5-15.