

## **Abstract**

LITTLEJOHN, DEBORAH KATHLEEN. *Anticipation and Action in Graduate-level Design Programs: Building a Theory of Relationships among Academic Culture, Professional Identity and the Design of the Teaching Environment.* (Under the direction of Meredith J. Davis).

This research concerns the culture of design education in the context of great change in the social and professional conditions of practice. Findings illuminate interrelationships among pedagogy, professional identity and the design of the instructional setting in programs that teach visual communication and interaction design. Participants' descriptions of their integrating research methods, collaborative skills and interdisciplinary coursework in the design curriculum provided insight into the ways in which academic culture—through the design of the teaching environment—enables and inhibits a programs' ability to adapt and respond effectively to new conditions of practice.

Data was collected from four U.S. graduate design programs—including interviews, existing documents and observations—and systematically analyzed using grounded theory coding and memoing. The core category that emerged was “transactive integration” with core subcategories “transactive perspective” and “transactive alignment.” Three major categories became oriented around the core: “external engagement,” “mediating meanings” and “transparency.” Connections were made in the literature to extant theories in the areas of geographic pragmatism, perceptual affordance, situated learning and activity theory. These domains share a concern with how individuals and groups learn through social interactions with others and their environment.

The understanding of “transactive integration” that emerged from the data was revealed through program descriptions of teaching practices and educational objectives and values regarding faculty views about design education and the profession. The

numerous categories, properties and dimensions of “transactive integration” pointed to situational factors such as adaptive curriculum, “low walls-no barriers” and teaching environments designed to provide diverse opportunities for faculty to interact with colleagues outside of their program and field.

This dissertation contributes to the literature on design education by proposing an ecological model of the teaching environment that emphasizes the contextual, relational and diverse nature of academic life in design education. It adds to our understanding of processes that shape faculty relationships and the ways in which teaching environments can become better coordinated between internal educational objectives and external conditions of practice. These processes promote sensemaking, transformation and engagement. The knowledge gained from this study suggested implications for further research that could increase the field’s level of awareness about beliefs and behaviors that significantly affect the ability to adapt and remain relevant.

Anticipation and Action in Graduate-level Design Programs: Building a Theory  
of Relationships Among Academic Culture, Professional Identity  
and the Design of the Teaching Environment

by  
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## **Biography**

Deborah Littlejohn is a design educator and professional designer. Her research is guided by questions that address the relationships among new educational environments, technology and the ability of people to learn, adapt and change. As a designer for over 15 years, she has dedicated a significant amount of time to teaching in the fields of interaction design and visual communication. She has developed coursework and taught classes in human-computer interface design, typography, publication design, environmental design, information design, wayfinding, knowledge mapping and time-based media. Along with serving as an assistant professor at Minneapolis College of Art and Design for several years, Deborah has lectured and conducted design workshops to undergraduate and graduate students in design programs around the U.S.

Deborah also operated a small design business, working with clients primarily in the nonprofit and cultural sectors. She has been a frequent contributor to *Eye: the international magazine of graphic design* and, as the resident design fellow at the University of Minnesota Design Institute, she edited *Metro Letters: A Typeface for the Twin Cities* (2003). While at the Design Institute, she designed and managed numerous projects in support of its mission to foster innovative design ideas, broaden public understanding of design and stimulate debate about the impact of emerging technologies on the design of products, services and environments.

Deborah received her MFA from California Institute of the Arts in Valencia, CA, and a BFA from Western Carolina University in Cullowhee, N.C. In 2009, she was the co-recipient of the American Institute of Graphic Arts Annual Research Grant. She was born in Raleigh, N.C.

## **Acknowledgements**

Although it may be an oversimplification, a dissertation is really just a story about how a researcher converted an interest into a researchable question and designed a plan for seeking answers. Like all stories, characters come and go over the duration of the narrative, each with roles of different degrees of importance and duration—some are prominent, while others are supportive or stay behind the scenes. Shorter or less obvious roles are no indication of a character’s relevance or importance to the story.

In this regard, the involvement of the participants, while short, was crucial—therefore, my gratitude to them is first. I continue to be amazed by the individuals who took part in this dissertation research. Their dedication as educators, and to the design field, was apparent to me from the start, during my initial analysis of their curricula and coursework. I thank them for opening up their world to me and for making me feel welcome. It was a privilege to observe even small elements of what they are accomplishing. I wish I could thank them by name, but protocol demands anonymity. This study would not have been possible without them.

I especially wish to acknowledge the members of my dissertation committee and their commitment over the ‘long haul.’ Perver Baran guided me through the complex and often messy process of qualitative data analysis. She brought a respectful and open way of experiencing the world and synthesizing important ideas in compelling ways. Her research paradigms and methods courses were invaluable to my development as a researcher. I am also indebted to Celen Pasalar for our one-on-one conversations about her “dissertating” experience, and I appreciate her treating me as a colleague and for helping me see this project as a work in process (I also thank her for accepting the committee role on short notice). Haig Khachatoorian provided an aerial view of patterns and helped me arrive at a

deeper understanding of the often neglected “big picture” of the study’s context. I especially appreciate his encouragement while I was writing this text. Committee Chair Meredith Davis deserves a special mention for the numerous hats she has worn during this study. Of all roles, hers was the longest and the most arduous. As my academic advisor, I am deeply grateful for her commitment and for seeing me through the research process. She enhanced this study with her profound insight and a comfortable affinity with my topic. Over the course of the research, she was an active partner by continuously challenging me to go further, asking good questions and generously pointing out resources that always proved invaluable.

Behind the scenes, I reserve special thanks to my family, who has always been there. They have been patient and kind throughout these several years of study, thereby making this research possible. The encouragement and support from my friends helped me stay focused until the work was complete. Although space does not allow me to name them all, I wish to call out the integral parts of Kary Arimoto-Mercer, Rick Mercer, Denise Gonzales-Crisp and John Hartzog in this study. My appreciation is for their generosity in giving me a home away from home. Without their gracious invitation, I would not have been able to include long-term site visits in this research for the amount of time necessary to gain the kind of in-depth results that were achieved.

Finally, to the American Institute of Graphic Arts and the AIGA Design Educators Steering Committee, my deepest gratitude. Their support enabled me to accomplish this research at a broader scale. I hope this work contributes to the growing voices in the design community with a point of departure for future practice in design education, and offers one more story to tell.

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## Chapter 1: The Context of Design Education

### 1.1 *Change in Professional and Social Conditions of Practice*

Design is a profoundly changing field of practice and discipline of study.<sup>1</sup> Before the 1990s, design practice was largely craft based, however the field has since faced growing complexity (Findeli, 2001). Professional organizations and other stakeholders in the field have promoted design to business and government, arguing the profession could play a larger role through innovative projects addressing difficult social problems. Outcomes of their advocacy include increased awareness of design as well as more important roles for designers. That the field has become an area of interest to other disciplines is widely established as professional commissions no longer fall into clear divisions of specialty (Dykes et al., 2009; Dunne and Martin, 2006; Robinson et al., 2005; Broadbent and Cross, 2003).<sup>2</sup> In his description of the designer's changing role, Frascara (2008) suggested that professional work “has grown to include the design of processes, services, structures and systems; in sum, a series of activities that could be defined as the design of the contexts within which traditional design operates” (p. 49). Designers are not only confronted with

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<sup>1</sup> As a verb and a noun, *design* has different meanings—even within the field. In this study, *design* is used to represent the creative professions comprised of various specialties, including product design, advertising design, visual communication design, graphic design, interaction design and media design (as opposed to “engineering design,” for example). This research focuses on programs teaching design practice with foundational roots in graphic design—mainly interaction design, strategic design and visual communication. These majors are closely related from a disciplinary and professional standpoint as they are currently taught in art and design schools.

The terms *field*, *discipline* or simply *area* are often used interchangeably. In this study, the term *field* refers to a specialist domain of practice (Bourdieu and Wacquant, 1992). *Practice* is used in two different ways: *design practice*, *professional practice* or *field of practice* refers to the “design industry” and the activities associated with professional services (advising clients, creating concepts and producing prototypes). In the second sense, *practice* is a “coordinated effort formed around a particular activity,” as in “the carrying out of some action”—i.e., “teaching practices” (Reckwitz, 2002). A *discipline* is defined as a set of shared commitments to patterns of thinking and behaviors common to an academic community in a given field (Kuhn, 1970). A *profession* is the “knowledge-based category of an occupation” that typically requires study at the higher (college) level, and a period of specialist training (Evetts, 2003).

<sup>2</sup> Information systems (Robinson et al., 2005), business management (Dunne and Martin, 2006), human and economic geography (Bryson and Rusten, 2011) and engineering (Dohn et al., 2005), for example, have established design's relevance in their fields.

more complexity in the things they make; the diversity in the expertise now required to bring design from initial idea to completed state has expanded. Dykes et al. (2009) observe that design no longer falls into typical divisions of specialty and argue the need for a different framework for understanding emergent design practices. Other authors have noted how it has become the norm for designers to work alongside other disciplines and project stakeholders, including the audiences and users of design (Keinonen, 2009). The multidisciplinary nature of design means that the development of products and services requires the integration of ideas and work practices of different professional domains. Especially within design practices like interaction, strategy, digital media and product design, there are several professional domains that work together, demanding the coordination and collaboration of different specialists.

Societal changes, including economic forces related to globalization and the digital revolution, along with a proliferation of information and communications technologies (ICTs), also contribute to shifts seen in the field: the computer is more than a production tool, it is a communications platform that has already transformed, and will continue to transform, design (Redström, 2005). Collaborative technologies let the general public participate in creative activities that have, until recently, been the exclusive domain of designers. Public influence and participation are affecting “what is designed, how it is designed and who designs it,” requiring designers to “move closer to the people for whom they design” (Sanders and Stappers, 2008, p. 6–7).

These recent social and professional movements have done more than present new problems and opportunities for designers and challenge their traditional assumptions about established professional roles (Keinonen, 2009). They have sparked new debates over the ability of design schools to meet the demands of preparing students for the changing conditions of practice. Stakeholders in the field, including professional

associations like the American Institute of Graphic Arts<sup>3</sup> (AIGA, 2007), among others, have presented educational programs with a set of competencies that are noticeably different from the typical conceptual and aesthetic skills that are the instructional focus of most design schools.<sup>4</sup>This study draws from several of their recommendations, including: (1) *research competency*—design professionals are being asked to ground design decisions in evidence gathered from empirical, analytic research; (2) *interdisciplinary competency*—the ability to interpret research means that designers require a more sophisticated understanding of the processes of other fields, including disciplines outside of design; and (3) *collaborative competency*—user participation and complex, multidisciplinary design projects requires the ability of designers to work effectively in teams, and develop empathic skills to communicate and collaborate with different groups of project stakeholders, professionals and audiences.

Students learn more from their educations than requisite skills and knowledge to work proficiently as designers: they learn tacitly how to *be* designers through gaining a sense of professional identity (Larson, 1979). As a shared meaning of what a designer does, *professional identity* is the understanding of the “object” of design—the necessary competencies, perspectives, concerns and approaches of the design activity (Bonsiepe, 1994, p. 49). The ability of design schools to accommodate the skills and knowledge students require for proficiency in the profession is a cyclical topic of debate, where many argue the ways and reasons for why design education cannot meet the demands of practice

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<sup>3</sup> The American Institute of Graphic Arts (AIGA) is the largest and oldest professional association of graphic designers in the U.S.

<sup>4</sup> It is notable that other disciplines recommend competencies that are similar to design for professionals in their own fields: engineering (Dohn et al. 2005), law (McElroy, 2009) and information systems (Martinsons and Cheung, 2001), to name a few. This study draws from criteria outlined in a 2007 report, *The Designer of 2015*, by the National Association of Schools of Art and Design (NASAD), the national accreditation body for U.S. design schools, and the American Institute of Graphic Arts (AIGA), the largest professional association for graphic design in the U.S. See also *Six Challenges for Design Education* (Research Society, 2009), PDF available at <[www.thersa.org/about-us/media/press-releases/six-challenges-for-design-education](http://www.thersa.org/about-us/media/press-releases/six-challenges-for-design-education)>

(c.f., Levy, 1990; Sullivan, 1996; Schoenfeld, 1997; Behrens, 2000; Findeli, 2001; Bowen, 2003; Browne, 2003; Lane, 2004; Burdick, 2007; Davis, 2007; Lawson and Dorst, 2009; Norman, 2010). Often, a program's response has been to append additional coursework onto the existing curriculum—a default “by accrual” approach to curricular change that results in a “cafeteria menu” of poorly integrated courses (Davis, 2007). Preparing students to understand and use the findings of research, communicate effectively with professionals in other fields, collaborate in multidisciplinary teams and foster empathy for the needs of various project stakeholders have broad implications for design education. Although the “creative act” may constitute the profession's core identity (Wang and Ilhan, 2009, p. 6), nontraditional competencies such as those presented in this study raise fundamental questions over the singular mission of design schools to prepare students as practitioners and form-givers, and cause concern about the curriculum and the pedagogy through which they are delivered. This warning is not new, as seen in Bowen's (2003) argument:

The bottom line is that designers are evaluated on the effectiveness of the design outcome, and few things have as much impact as research. If designers don't get smart about how and when research should be used to help the design process, other people who don't understand design will be calling the shots. Whether they have been trained in research or not, designers are accountable for it.

If, as Ken Friedman (2004, p. 48) warned, “Nearly every form of design that has a purpose in today's world is far too complex for the older forms of design education,” how are design schools responding to the challenges of preparing students for change in the conditions of practice, as presented in this study and elsewhere (e.g., Hunt, et al., 2002)?

## **1.2      *The Need for a Theory and its Significance***

Although recommendations proffered by various stakeholders in the field describe these new competencies in some detail, they do not provide guidelines for developing appropriate instructional strategies and learning experiences by which students can acquire them. If programs are to remain relevant and meet the expectations and needs of students and the profession by integrating nontraditional competencies into design pedagogy, what approaches have already been taken, and are they successful? “An area of education requires an educational approach to its development,” according to Cross (1980, p. 206). There is a need of practical guidelines for pedagogic approaches that address knowledge and skill sets that are, perhaps, unfamiliar to the majority of design faculty. Because the literature in design education offers few suggestions, the aim of this qualitative study is to use grounded theory (Charmaz, 2006) to explore the educational processes of design programs that currently prepare students for nontraditional design competencies.

The outcomes of this study will be of interest to different audiences on several levels. An understanding of the relationships between academic culture and the teaching environment of design schools will be useful to faculty and administrators making decisions in their respective programs. Design organizations such as professional associations and accreditation bodies, as well as professionals who hire recent graduates, could benefit from a formal study of design pedagogy. Although this work is not intended to be generalized to all professions, findings about academic culture and professional identity in graduate level design schools may be transferable to other settings and contexts—particularly in those that involve collaboration with design fields.

This study is particularly relevant to programs that offer—or are considering offering—graduate degrees in design. Underlying design pedagogy are cultures that bring much to bear on the future of the profession (Shulman, 2005). Through this study I

attempt to gain a greater understanding of faculty views of professional identity. A picture of design's identity as seen from the perspective of faculty can reveal much about how the field is seen as a whole, while the choices faculty make about the curriculum will influence generations of students and shape the future of the profession. Graduate education has an important role to play in this future, although the need for a graduate degree is not yet commonly understood. The creative design fields do not have fully developed research literatures or adequate publishing venues for distributing scholarly work (Poggenpohl and Sato, 2009). It is also notable how little research has been done on design pedagogy outside of the area of architecture. This study helps to fill that gap.

### **1.3 *Summary and Organization of the Dissertation***

This study draws on the shifts underway in the design field to explore academic culture in graduate design programs. It examines pedagogy associated with nontraditional design competencies to build a theoretical understanding of the relationships between academic design culture, professional identity and the environment in which instruction takes place. By understanding how design programs anticipate, define and meet the demands of preparing students for change in the conditions of practice, this study hopes to contribute to debates about design education and its future development.

There are five chapters to the dissertation. Chapter 1 is an introduction to the study, including the background of the interest area, a statement of the problem and the potential significance of the research. Chapter 2 situates the research with a discussion of pertinent literature from two broad areas: sociocultural perspectives on disciplines and professions; and writings about design by design professionals and educators. Chapter 3 outlines the study design, conceptual framework and research questions, and includes a discussion of the methodology and data collection and analysis procedures. It concludes

with a review of limitations and issues of trustworthiness. The research findings are discussed in Chapter 4, while Chapter 5 is a presentation of the integrative grounded theory, including suggestions for further research and implications for the design field.

## **Chapter 2: Academic Culture & Professional Identity in Design**

### **2.1 *Introduction to the Literature***

This chapter presents the literature that informed the research and the conceptual framework presented in Chapter 3. The literature comes from two different areas. The first is set within the well-developed scholarship in the sociology of culture, particularly from theories of academic disciplines and professions. It examines the structural context, norms and practices of higher education, including the relationships between academia and other social organizations. My aim in discussing this work is to elucidate several dimensions in the culture of academia and identify existing frameworks that have been used in the design of the study.

The second body of literature situates the research in the context of contemporary design education—specifically, graphic design (i.e., visual communication) and interactive media design—and provides insight into recurring themes between the academic and professional cultures of design fields.<sup>5</sup> This writing discusses the transformation of design instruction in the early twentieth-century from an apprenticeship model to the formal setting of a discipline within the academy in colleges and universities, and the changing nature of the relationship between education, industry and the design profession. It also

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<sup>5</sup> Several authors have noted the inability of the graphic design field to sustain a “strong tradition of reflective or critical writing,” and lack of significant empirical research on design products and practices (Poggenpohl, 2004, p. 588). In his dissertation on professional production in graphic design (one of a handful of scholarly works that take the graphic design community as an object of study), Soar (2002) maintained that a critical voice in the writing of the graphic design field only began to coalesce in the 1990s. He describes this literature as a “very busy, multi-vocal conversation,” comprised of “hundreds and hundreds of exceedingly short essays, interviews and opinion pieces,” where “particular issues, concerns and themes recur time and time again, but rarely are they clearly debated, let alone resolved” (ibid, p. 53).

includes a discussion of writing that helped frame the characteristics of design's professional identity. This literature, mostly written by educators, self-styled design critics and practicing professionals, provides insight into current thinking about design education, exposing some of the more important debates in the field. It does not, however, examine the intersection of academic culture, professional identity and the particular circumstances of the teaching environment of design schools—ideas that the present study seeks to address.

## **2.2     *The Idea of Culture***

*Culture* has been studied from many perspectives, and as “one of the most difficult concepts in the human and social sciences,” (Hall, 1997, p. 2), it is not an easy term to define. My interest in culture is not general. I want to understand the culture of design education at the graduate level, where culture is understood as the “shared meaning of membership” in a particular profession or design program (Hermanowicz, 2005, p.26). The literature suggests several repeating themes: culture is dynamic—while it develops over time, it is nevertheless, always in motion (Rochon, 1998); culture is partly the product of a group's history, demographics, economic development and environment (Rochon, 1998); it is comprised of numerous layers and levels (Välimma, 1998; Hofstede, 1991; Karahanna, et al, 2005); and culture is publicly transmitted and shared, not genetically inherited (Geertz, 1973). Other researchers place culture in a public context and thus lend support to the dissertation. Eliasoph and Lichterman, for example wrote, “Culture is a set of publicly shared codes or repertoires, building blocks that structure people's ability to think and share ideas” (2003, p. 735). Rochon describes culture as consisting of “the linked stock of ideas that define a set of commonsense beliefs about what is right, what is natural, what works” (1998, p. 9).

The analysis of culture requires an understanding of the term, despite its many definitions and dimensions. Scholars of culture offer numerous frameworks for examining the processes by which people use culture to connect symbolic meaning and the behaviors that stem from meaning. The writing that was especially helpful in determining the conceptual framework for this study was that of Swidler (1986). As the “forms through which people experience and express meaning,” Swidler (1986) describes culture as a “tool kit of publicly available symbols, stories, rituals and world-views” that people use to guide their actions (p. 273). The analysis of culture, she maintains, is an exploration of action and the meanings undergirding it. Attention is directed toward the understanding people bring to their cultural practices, where ideology plays an important role, particularly during what Swidler calls “unsettled times.”<sup>6</sup> Her framework is useful for examining faculty beliefs about professional identity at a time when the design field is certainly facing great change.

### **2.2.1 Academic and Disciplinary Culture**

Academic institutions are both a reflection and reinforcement of knowledge classifications, and therefore influence processes of establishing and maintaining the expertise and worthwhile knowledge of disciplines (Gumpert and Snyderman, 2002). Universities train, hire, promote, pay and sometimes fire individual academics while suggesting which kind of research should be undertaken (ibid, 2002). Citing historical writings, Leslie (2002) described how academic careers develop along two tracks—the institutional and the

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<sup>6</sup> Swidler defined ideology as “a highly articulated, self-conscious belief system” (1986, p. 279) instead of the “collective unconsciousness” understood by other theories that render the term in a pejorative sense—i.e., the Marxist family of theories, for example, Mannheim, Foucault, Gramsci, among others. Decker wrote that ideology is a word loaded with “provincial dogma” (Decker, 2004, p. 4). His definition of ideology as a set of beliefs or, “The ideas and manner of thinking characteristic of a group” (ibid, p. 3), is according to Swidler’s “symbolic human practice,” and is used in this study—however, the terms *core beliefs* or *belief system* will be in place of the word *ideology*.

professional—and traces some of the historical developments that have introduced increasingly more complex and conflicted norms for faculty performance and rewards over the past 150 years. Faculty were originally expected to teach and serve their institutions, however beginning in the mid-nineteenth century, leading universities began expecting faculty to obtain specialized training in a discipline. Over time, research in a field of specialization became important to a successful career in academia—a situation that was reinforced by the emergence of formally organized disciplines, the American Association of University Professors, independent sources of funding by the federal government and others, demand for faculty with visibility and national reputations, and increasing competitiveness among institutions for recognition and prestige (Leslie, 2002; Menand, 2010).

Other studies of academic culture explore what “life is like” inside a particular institutional sector, university, college, department, work group, etc., of the academy (Hermanowicz, 2005, p.28). A notable characteristic of this literature is the understanding that academic culture is really composed of multiple cultures, rather than a singular, monolithic culture. Gouldner’s classic macro level study, for example, explored how some academics identify with their institution (locals), while others (cosmopolitans) are more closely affiliated with ideas or groups outside of their institution—for example, the discipline at large or a community of professionals in a specific specialization (Gouldner, 1957). Following Gouldner, Toma (1997) theorized a more complex idea of academic culture that takes place in four concurrent cultures: the academic profession, the institutional organization, the discipline and the type of institution.

The work of Trowler (2008) further informed this dissertation regarding understanding perspectives on *cultures*—rather than a singular, monolithic notion of *culture*. Trowler theorized how disciplinary cultures, including beliefs, values, norms about

knowledge, methodology and research practices can influence the way in which academic departments—i.e., work groups—respond to institutional change, such as policy. Instead of using the broad-sweeping term *culture*, Trowler coined the phrase *teaching and learning regimes* (TLR). His framework for theorizing TLRs is composed of eight “moments” through which faculty groups share meaning around their purpose within their individual departments. The framework relates the interactions of the eight moments in a process that “constructs the teaching and learning environment,” and accounts for the ways in which faculty make sense of their situations (ibid, 2008, p. 55). Similar to the understanding of culture, an understanding of a TLR involves exploring: recurrent practices, tacit assumptions, implicit theories of teaching and learning, discursive repertoires, conventions of appropriateness, power relations, subjectivities in interaction and codes of signification (ibid, p. 55).

*Disciplinary culture* and *academic culture* are “interconnected ideas” (Becher, 1981, p. 159)—and, like *culture*, the term *discipline* has several meanings. Historically, disciplines are understood as emergent as they progress according to what is going on in the wider world, while concurrently influencing that world (Kuhn, 1970). The legitimacy and survival of disciplines depends on their ability to produce knowledge that advances the field, while organizational context has a role in determining what comes to count as disciplinary knowledge (Menand, 2010). Writings on the culture of disciplines theorize a social and ideological base: disciplinary communities develop unique cultural meanings, social traits and belief systems that create a sense of group identity around which their practices are oriented (Goode, 1957; Bucher and Strauss, 1961; Kuhn, 1970; Tierney, 1988; Becher, 1989; Gumpert and Snyderman, 2002). One way that disciplines structure practice is through the establishment of a canon of standardized texts that provide members of the discipline with symbolic meanings and common narratives for what the community does

(Lowgren and Stolterman, 2004). Another regulatory function of the discipline is to set proper discourse, theoretical perspectives, important questions and appropriate pedagogy (Shulman, 2005). By governing the process of knowledge transmission, senior researchers, as individuals who embody a discipline's intellectual identity, play an important role in shaping the direction of a field's future research (Atkinson, 1983). Tony Becher's seminal study of academic "tribes and territories" theorized how disciplinary "attitudes, activities and cognitive styles" are determined by the domain of knowledge (Becher, 1989, p. 20).

As with all processes of socialization, those introducing new members into the disciplinary community are of relevance because they serve to emphasize and reflect what a given disciplinary community, at a specific time, considers to be its distinctive nature and identity (Atkinson, 1983; Bourdieu, 1988). A highly regarded work in the area of disciplinary practice comes from Bourdieu, who described a discipline as a social practice through which the construction of group identity occurs (Bourdieu, 1988, 1998). As a social practice, professional identity defines what it means to participate in the life of a discipline. Through their educations, new generations of academics are provided with knowledge, skill and intellectual procedures that will allow them to perform their institutional role. Methodologically, Bourdieu also argued that social practice and professional identity cannot be understood in isolation—i.e., in an individual's thinking on the one hand, or through social structure, on the other. Rather, group identity exists because of people's practices and their interactions with each other. Structure and practice, according to Bourdieu, are codependent (Bourdieu, 1988).

Perhaps the most influential, and controversial, writing on the culture of disciplines (Frickel and Gross, 2005) was Kuhn's *The Structure of Scientific Revolutions* (1970), a work that focused on the disciplinary community of physicists. The *Postscript* in the second edition recasts his original idea of "paradigm" as a "disciplinary matrix" (ibid, p.

182). The disciplinary matrix (DM) is a sociological idea that describes the structure of a community of practitioners in a given discipline. Similar to the idea of culture, the DM is comprised of the “entire constellation of beliefs, values and techniques...shared by the members of a given community” (ibid, p. 181). Four elements form the framework of Kuhn’s disciplinary matrix (ibid, p. 183–187):

(1) *symbolic generalizations* include the generally excepted expressions that serve as laws as well as “definitions...of the symbols they deploy.”

(2) *shared commitments* are beliefs about ontological and heuristic models that supply “preferred or permissible analogies and metaphors,” and serve as frameworks guiding the activities of a discipline.

(3) *values* provide a holistic sense of a community, and may be shared with other disciplinary subspecialties. Values arise in importance when crises need to be identified and when the discipline needs to “choose between incompatible ways of practice.”

(4) *exemplars* are the typical problem-solutions met during education and training and communicate a sense of “fine-structure” in what a disciplinary community does.<sup>7</sup>

Kuhn argued that the understanding of “membership” is a subjective experience for those who identify with a community of practitioners, and is based on their occupational work. Notably, membership does not require that all individuals agree on subject matter and theory—rather, according to Kuhn, “The need for agreement depends on what the community does” (ibid, p. 119).

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<sup>7</sup> Kuhn’s exemplars were derived from physics and include: *problems*, such as the “inclined plane” and the “conical pendulum”; and *tools* like the “vernier,” the “calorimeter,” and the “Wheatstone bridge.” As training continues for the scientist, the symbolic generalizations are “increasingly illustrated by different exemplars” (Kuhn, 1970, p. 187).

This dissertation employs Kuhn's understanding of a *discipline* as a "set of commitments to patterns of thought and shared practices common to an occupational community" (ibid, 1970, p. 181). The culture of a discipline has both cognitive and social dimensions in that it is structured by beliefs and values that help determine what work is most important, identify exemplary practitioners and prescribe the proper knowledge, methods and problems (Kuhn, 1970). Although he was theorizing about scientific communities, Kuhn's model has been enormously influential, precipitating the analysis of various professional communities, such as nursing (Rentschler and Spegman, 1996), accounting (Panozzo, 1997), literary criticism (Joan, 1997), information systems (Gallagher and Webb, 2000), and software engineering (Wernick and Hall, 2004). One notable study in this line of inquiry is Gallagher and Webb (2000). The work set out to identify common elements in the disciplinary matrix of graphic designers and software engineers to produce guidelines in multimedia software development, where these two communities often work together. Data were derived from college textbooks from both fields that had been selected on the recommendations of expert practitioners and design educators. Textbook data was also supplemented with published writings in scholarly journals and academic dissertations.

There are several reasons why textbooks, academic journals and dissertations are not appropriate choices on which to build a DM for graphic design. The first reason is that design education does not normally prescribe standardized textbooks in its curriculum (Lawson and Dorst, 2009). Furthermore, the books, articles and essays used in design coursework have never been standardized or mandated across the curricula. As a rule, readings vary widely from program to program; faculty typically chose texts based on individual preferences and are updated from year to year. Tellingly, the inadequacy of textbooks as indicators for graphic design practice is demonstrated in Gallagher and

Webb's selections: only three titles were contemporary with the study, while the majority were issued between 1970–1980—and the oldest was published in 1964. In contrast, the textbooks that represent software engineering were published between 1993–1995. Another problem of the analysts' source of data arises from the dearth of academic journals and scholarly research in the graphic design field (Poggenpohl and Sato, 2009). Thus, the disciplinary matrix proposed for graphic design in Gallagher and Webb, derived from old textbooks and nearly nonexistent scholarly journals and dissertations, is quite suspect—it did not represent the current state of the profession.

Taking an approach similar to Gallagher and Webb, Wang and Ilhan (2009) proposed a model for a disciplinary matrix for the design professions, based on the assumption that design's DM is very different from other fields with established cultures of inquiry and bodies of knowledge. The authors suggested:

While the components of the matrix in non-design disciplines manage domain-specific knowledge *internal* to a profession, in the design professions the same components of the matrix orient *externally* towards the larger culture, precisely because of the *absence* of explicit bodies of design knowledge. The result is that the components of the disciplinary matrix act as a kind of “sociological wrapping” around the design professions to, as it were, hold them together to achieve social identity and standing (Wang and Ilhan, 2009, p. 5).

In this quote, the authors posit that Kuhn's model describes “how scientific communities manage knowledge” (ibid, p. 5). Following Kuhn, however, the disciplinary matrix “governs...not a subject matter, but rather a group of practitioners (i.e., what they perceive to be their focus of work), not knowledge” (Kuhn, 1970, p. 180). The production and validation of scientific knowledge is what a community of scientists generally does—

their occupation, as it were. Considering Kuhn's conceptualization, the disciplinary matrix is an appropriate model for understanding shared identity, even as Wang and Ilhan suggested. The disciplinary matrix characterizes the community structure in terms of its work: it may be applied to the scientist's work as well as the work of other nonscientific fields.

### **2.3 Professional Education and the Culture of Design**

Research exploring the teaching practices of specific subjects seeks to understand what is characteristic about teaching and learning in that field (Shulman, 2005). The second area of scholarly writing relevant to understanding academic design culture in a qualitative sense is that which explores the social practice of teaching and learning in professions. The literature identifies the academic institution as the predominant setting in which future professionals are inculcated into the values and belief systems of their fields, where tacit knowledge, social skills and appropriate discourses are also transmitted (Snyder, 1971; Larson, 1979; Evetts, 2003; Grubb and Lazerson, 2005). This work has also explored the complex relationships that exist between faculty beliefs and their teaching practices (Fang, 1996), and furthermore, as Shulman (2005) contended, the teaching practices of professions reveal a profession's culture. *Signature pedagogies* implicitly "define the functions of expertise, the locus of authority and the privileges of rank and standing" in a profession (ibid, p. 54). There are three dimensions of a profession's signature pedagogy: (1) *surface structure*—the observable actions of teaching such as the methods of explaining, demonstrating, showing, questioning; (2) *deep structure*—the set of assumptions about how best to impart a body of knowledge and skill; and (3) *implicit structure*—beliefs, professional attitudes, values and dispositions (ibid, p. 55). Shulman's

categories of signature pedagogies are useful for organizing the following discussion of pedagogic research in design.

Addressing the surface structure of architecture education, Schön (1987) introduced the idea of reflection as important for perfecting professional craft. Drawing on the philosophy of pragmatism and inspired by the writing of John Dewey, Schön's notion of "reflective practice" involved a mindful consideration of the individual's experiences in applying knowledge to practice. Outlining this process in his *Educating the Reflective Practitioner* (Schön, 1987) Schön explored how novice architecture students learn by practicing the activities of professional architects while having reflective conversations with design problems and materials in a "reciprocal coaching relationship with the instructor" (p. 157). Observations of desk reviews between architecture faculty and students were used to describe the "reflective practicum" learning framework as a process of internal and external communication—what Schön called "reflection-in-action." His study did not, however, question the content of instruction in architecture education—nor did it purpose to uncover assumptions about the pedagogic practices of the faculty and their beliefs concerning the architecture profession.

Prosser and Trigwell (1999) explored the deep structure of pedagogy in a study that examined the relationship between faculty understandings about the work of a particular field and their approach to teaching in that field. The authors posited that approaches to teaching are either "teacher-focused" or "student-focused." An approach that is centered on the teacher is primarily about transmission of content and skills development. It is contrasted to a qualitatively different approach centered on students that has the goal of advancing student understanding of the subject (Trigwell, 1996). Following Prosser and Trigwell, most research in this body of literature maintains that the two approaches to teaching relates to a student's approach to learning (Drew, 2001; Drew

and Trigwell, 2003; Reid and Davies, 2003; Reid and Petocz, 2003). Davies (2004) found that student assumptions about teaching and learning in a subject affected the quality of learning. Comparing how students understand learning and teaching in design to how faculty understood it, the study found that within the creative fields, what teachers think design is about (e.g., production, software use, creativity, intellectual thinking), determined their approach to teaching. Findings revealed several different gaps between faculty and student understanding of the design activity, while design projects, syllabi and curricula were overwhelmingly based on what individual instructors thought students ought to learn—i.e., rather than grounding pedagogic decisions from a consistent understanding of design knowledge and skill.

While Trigwell (2000) wrote that the project-based learning environment of design education required a highly interactive teacher-student relationship—implying a student-centered approach—Davies and Reid (2001) and Swann (2002) argued that design pedagogy is predominately teacher-centered in that it relies more on a transmissive mode of relaying instructor experience in order to improve some aspect of a student’s design project. Teacher-focused approaches were especially observed in studios where instruction mainly took place by individual desk reviews—what Swann called the “sitting-by-Nellie” approach (Swan, 2002). A transmissive approach was also identified in situations where faculty served the roles of both project manager, by writing the assignment, and client, in the assessment of projects (Davies, 2004; Drew, 2001; Ehmman, 2005). These authors were critical of this dual role, noting that while the instructor appeared to act as a “pseudo client,” they do so with a teacher’s knowledge and intent (Davies and Reid, 2001). Furthermore, even though the instructor’s criticism purports to be from the client’s viewpoint, it is based on the instructor’s personal opinion. Ehmman (2005) argued that while students may be able to place themselves in the design process, what really happens

is that the students try to guess what the instructor wants them to do. Such grading and assessment through the critique process is an integral factor of learning from a “do this, get that” approach (Dakers, 2005; Ellmers et al. 2008).

Along with acquiring practical skills, the design studio is where the norms, language and rituals of design activities are learned. Studies that examine the unspoken curriculum of the studio are concerned with Shulman’s (2005) third dimension of signature pedagogies: the *implicit structure*. In the area of design education, the majority of research concerns the pedagogy of architecture education. A notable example is by Cuff (1991), who interrogated the ways in which architecture education is about more than learning how to design buildings. Architecture education is a process of enculturation into approved aesthetics and discourse, reinforced by a belief system that instills ideals of the architect and architectural work. Cuff, however, argued that in their daily practice, architects are mostly engaged in sense-making—meaning, they interpret social situations and make sense iteratively with other individuals to arrive at common understandings and agreement (ibid, 1991). Cuff found a disconnect between the values and practices found in architecture education and those of the profession, and concluded that schools can serve to undermine the profession when their instructional focus is mostly on creative design and individual designers while ignoring the sociality of professional work—i.e., communicating with clients, working with contractors and building consensus.

Other studies have explored the ways in which authority, professional identity and design knowledge are expressed in the practices and rituals of the design critique. While most design faculty promote the value of group debate and critique of work, research supports the idea that students take a defensive, rather than an educational stance towards the critique. Several studies have questioned the quality of learning in critiques. Anthony (1991), for example, combined observational and interview data to

explore the effectiveness of design juries, and found that while most faculty believe students learn “a lot” from juries, students feel they learn very little (ibid, p. 6). She explored how stress felt in the critique situation interfered with the ability of students to recall the comments they were given, thus challenging faculty assumptions about the educational value of the design jury. Inspired by Foucault’s classic study of surveillance and technologies of power (1991; 1975), Webster’s (2006) yearlong ethnography explored the “staging of power and authority” in the pedagogic ritual of the critique. An unequal distribution of power in favor of the jury encouraged students to adopt “surface strategies” to receive positive remarks. These surface strategies involved agreeing with jury members, even if the student held a different view, or saying that they understood jury member comments even when they did not (ibid, p. 293). The physical location of invited jury members, the words that are spoken, the position of the audience and the presenting student, as well as the arrangement of furniture, serve not only to reinforce the power of the jury, they affect how students perceive the critique as an educational event. The “centrality of power,” Webster argued, challenges the belief that the public jury is an “exemplary site of reflective learning” (ibid, 2006, p. 295).

In seeking to understand the culture, perspectives, world views and boundaries of the design field, it is useful to reflect upon its historical roots (Kim, 1990). Design education transitioned into a formal academic setting as a part of a larger process of professionalization in the nineteenth century taking shape in other professions, including medicine, theology and law (Klein, 1990). Klein (1990) and Menand (2010), among others, attributed this larger process to several trends: external pressures on universities to produce specialists; exponential growth in knowledge (and knowledge fragmentation); technological advancements; and formalization of knowledge production. The shift of instruction from apprenticeship to its becoming an academic field taught within the formal

university has had several effects on design. Before professionalization and integration into the academy, novices learned how to design through apprenticeship and on-the-job training. In the master-apprentice relationship, knowledge and skill were transmitted from the experienced practitioner to the protege by working on the projects of the master. This relationship was, in reality, understood as a contract (Sullivan, 2005). As part of the professionalization process, the apprenticeship model was “judged inadequate to the task” of preparing designers by prominent practitioners in the field (Thomson, 1997, p. 86).

It is also necessary to reflect on the establishment of the German Bauhaus School of Design, an early landmark of formal design training and a pedagogic benchmark. Situated in the turmoil of Europe generally, and the early nineteenth-century German Weimar Republic specifically, the Bauhaus was a product of the social, political and technological transformations taking place in the onset of the Industrial Revolution. Wick noted that the Bauhaus was not a new idea or an experiment: Director Walter Gropius “never denied the historical prerequisites of Bauhaus pedagogy,” but thought of it as, “the logical realization of ‘reform ideas typical to our age’” (Wick, 2000, p. 56). Although Bauhaus literature promoted a social agenda bordering on the utopian, Cross (1983, p. 49) has argued that the school’s mission was an expression of the commitment of Gropius to establish “constant contact with leaders” in German craft and industry and obtain commissions for faculty and students. This agenda, Cross posited, admitted “demanding elements of economic purpose to an educational experiment hardly begun” (ibid). Along with connecting art and industry and energizing the German economy, the Bauhaus curriculum was meant to meet the needs of the times and the technology. This adaptive stance may be discerned by comparing the revised 1937 curriculum (Wingler, 1993, p. 40) and an earlier framework that was developed before the arrival of photography (ibid, p. 52).

After the Bauhaus was closed in 1933 by the totalitarian Nazi regime, most of the faculty left Germany where they accepted posts in the schools of their new countries, thus spreading Bauhaus ideals around the world. Several faculty emigrated to the U.S., including Albers (Yale), Mies van der Rohe (Illinois Institute of Technology) and Gropius (Harvard). In Chicago, executives from the Association of Arts and Industries approached Moholy-Nagy by way of Gropius to inquire about establishing the New Bauhaus (Findeli, 1990). Wick (2000, p. 56) was critical of this attempt to transfer the Bauhaus ideals to other schools of art and design:

... As a rule, pedagogy in the arts tends to be equally heedless of the extremely complex set of circumstances surrounding the Bauhaus pedagogy and the institutional framework of the school... The set of questions with which the pedagogy in the arts and also in design has generally approached the Bauhaus is, either implicitly or explicitly: What can the design principles established by individual teachers at the Bauhaus achieve for present-day instruction in schools and universities? It seems obvious that Bauhaus pedagogy thus drops out of view as a historical phenomenon and that its context is unacceptably disregarded. Gunter Otto... recognized this problem with complete clarity when he took a critical stand against the professional didactics of those who attempt to derive from the Bauhaus “‘courses of study’ that mirror in excerpted form the system of the Bauhaus—and ... thus not only overlook a series of artistic phenomena that are important to the present, but also the very “plan” of the Bauhaus, whose interpretive system cannot be grasped in “excerpts.”

The Bauhaus sought to elevate design as an intellectual endeavor on par with the fine arts. In most of Western Europe, design was promoted as serving a social agenda,

however, in the late nineteenth-century United States, design was a practice that served businesses and consumers, and was more associated with advertising and making and selling products. Design professionals in the early twentieth century worked without conflict in advertising “within a systematic set of expressions” that sought to unite Modern art and commerce (Leiss et al. 1997, p. 85). The bifurcation of advertising and graphic design education into two different schools of thought began in the U.S. in the mid-twentieth century, following the arrival of several Bauhaus *emigrés* and the establishment of a Department of Design and a graphic design degree program at Yale (Kelly, 2001). While Yale sought to align design with architecture, the majority of U.S. programs distanced design from advertising and aligned it with art—witnessed in the university by its predominant location in Colleges of Fine Art. One result of this decision was that faculty who were trained in painting, drawing and sculpture taught design as a commercial—i.e., tainted—application of studio art (McCoy, 1998). Another result—one that, arguably, had the greater consequence—was a predominate aesthetic ethos that prioritized original, individual creative expression.

In current practice, design education has remained rooted in the studio arts, where a fine arts “disciplinary hierarchy” serves to reinforce an identity crisis among design professionals (Behrens, 2000; Glaser, 2000). Evidence of this crisis can be found in Depero’s heroic manifesto of advertising that duly identified the designer as an artist (Depero, 1929), compared with Garland’s (1967) reprimanding manifesto, castigating designers for their associations with business interests. Broad swings in esteem and identity may also be discerned throughout the professional discourse (Margolin, 1992; Caplan, 1999; Beruit, et al., 1999; Behrens, 2000; Landa, 2002).

Design education has also adapted to institutional norms such as accreditation, course credit structures and an academic calendar composed of semesters and summer

leave. Students enroll in required classes for their major, learn about one aspect of it during one course, and then move to another classroom to learn about another aspect. One consequence of an academic setting—and the Bauhaus legacy—is a curriculum that presents design to students as a fragmented practice—e.g., *Typography, Design for the Web, Packaging Design, Motion Graphics* and *Branding*. The segregation of practice in artifactual chunks belies the complex contexts and situatedness of skills in which design is produced. Furthermore, the use of software and digital technology has become an essential part of the designer’s education. Even so, instruction has been subsumed by software insofar as faculty believe it has cannibalized other important areas of the curriculum and overburdened them with “too much to teach” (Morin, 1999; Davis, 2007). In spite of this problem, Davis (2007) has argued that when faculty seek to incorporate new practices in their curricula, they are nevertheless “unable to let go of or even challenge the existing structure.”

As it is taught and studied, most faculty view design as an emerging discipline. Disciplines do not arise in isolation; rather, they build upon knowledge from preexisting fields (Klein, 1990). Whether conscious or not, design education has systemically isolated the field from its academic surrounding. Schön (1987, p. 312) wrote of this dilemma:

Just to the extent that a reflective practicum succeeds in creating a world of its own, it risks becoming a precious island cut off both from the world of practice to which it refers and from the world of academic courses in which it resides. If it is to avoid this fate, it must cultivate activities that connect the knowing- and reflection-in-action of competent practitioners to the theories and techniques taught as professional knowledge in academic courses.

Tension between scholarly work, on the one hand, and professional practice, on the other, has an important role in the isolation of design on numerous levels. The discipline is isolated from other knowledge communities as faculty are suspicious of, and therefore tend to shun, the theories and practices from fields unrelated to design (Blauvelt, 1994b). Furthermore, it is not unusual for individual instructors to dictate the studio agenda based on topics that are of interest only to them, or to promote a view of practice based on little more than their own personal experience (Dutton, 1991; Davies and Reid, 2001; Ellmers et al. 2008). The foundation of the designer's training is the studio, and it consumes the majority of degree requirements. A dominant studio culture encourages students to spend an inordinate amount of time working after hours, even at the expense of other coursework and physical well-being (Boyer and Mitgang, 1996). The curriculum isolates design students from other fields with its credit structure requiring numerous studio courses that may span four, five, even six hours, several times a week. Academic policy rarely permits students from outside a design major to take studio courses. Furthermore, in the project-based approach to teaching, students are typically praised and graded for controlling all aspects of their assignments. The studio approach has normalized the idea that students should work alone (usually in front of a computer).

Assessment standards that have been established by the field's accreditation bodies and professional organizations may contribute to the isolation of design through accreditation criteria. The National Association of Schools of Art and Design (NASAD)<sup>8</sup> and the AIGA identify the Bachelor of Fine Arts (BFA) and the Bachelor of Graphic Design (BGD) as the first professional degree in the field, and the standard criterion for entry into

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<sup>8</sup> NASAD is the only nationally recognized accrediting body for design education. NASAD certifies the credit distributions between studio and academic coursework, determines whether faculty have the appropriate educational backgrounds and assesses the adequacy of the school's resource allocation. It does not, however, set the content of curricula.

practice.<sup>9</sup> To become accredited by NASAD, a program must submit to a site visit by a pre-approved and appropriately trained committee to demonstrate that it meets the criteria outlined in its *Handbook* (NASAD, 2009). School membership in NASAD is an attempt to insure that programs have common standards for the design degree, however, NASAD accreditation is not mandatory to confer design degrees, and there are far more programs than those that are accredited by NASAD. Furthermore, a NASAD-accredited degree is not necessary to practice design. While most top U.S. design schools are accredited through NASAD standards, somewhat counterintuitively, they promote a wide range of views about the role of the designer and the professional identity of the field. NASAD describes three profiles under which the typical program falls: (1) a general practice orientation where study resembles general professional practice; (2) a specialized practice orientation where study is focused on a particular segment of design practice or philosophical approach, emphasizing in-depth investigations that push the boundaries of practice; and (3) a research orientation that places importance on building a body of knowledge for the design field.

Similar to undergraduate programs, the Master of Fine Arts (MFA) and the Master of Graphic Design (MGD) degrees are based on the studio education model, but coursework and program orientations to practice tend to vary more than at the undergraduate level.<sup>10</sup> A careful reading of the responses given by graduate programs to an AIGA (2006) survey provided this study with a more detailed understanding of professional orientation concerning NASAD's three profiles. The following profiles were

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<sup>9</sup> According to NASAD, the Bachelor of Arts (BA) and the Bachelor of Science (BS) are preprofessional degrees. Except for architecture, license and regulation of the design professions is not required in the U.S., suggesting that the field has little social have an impact on. The only national standard for quality in the profession is through the accreditation of degree-granting schools. NASAD accreditation is on a voluntary basis and is not necessary for conferring design degrees, however.

<sup>10</sup> NASAD does not scrutinize Master's programs as heavily as the Bachelor's. As a joint NASAD/AIGA briefing paper explains, "There are no practice-driven criteria that shape master's curricula," as there are at the BFA level.

identified: 1) designer as author; 2) social model of design; 3) invention of visual form; and 4) academic research model.<sup>11</sup> The practice orientations found in the 2006 AIGA survey suggest there is more variation in faculty and program views of the profession—including views about the designer’s role, responsibilities and relationships with clients, audiences for design and industry stakeholders.

### **2.3.1 *The Profession and the Academy***

The field has long debated the relationship between professional practice and education. If design history can be understood as a story about the uneasy relationship with commerce, it is one that often finds academics and professionals pointing out the other as the culprit. Schön (1987) noted this problem in his interrogation of the role of professional schools, which are often situated in the academic context of universities where scholarly inquiry is the predominant value rather than practical training. As design programs are essentially schools of the profession, there is a dilemma in being both a school of practice and of scholarly research. The “problematic situation” of professional schools is “...a twofold relationship to the worlds of the practice and the larger university—a relationship mirrored in the relationship of discipline- and practice-oriented components of the school” (Schön, 1987, p. 306).

Buchanan (1998) identified three broad eras in the development of U.S. design instruction that give a positive view of this relationship. The first era sees design as a trade: education followed the needs of the profession, and the profession determined what was taught (mainly skills and little else). The second era, emerging after World War II, is a

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<sup>11</sup> This terminology was used in the descriptive categories for graduate programs in the self-reporting *Survey of Design Education Programs* (AIGA, 2006). The four descriptors were not defined in the survey literature, which may suggest that there is common understanding behind these labels among design faculty. However, I am not convinced this is the case, especially considering the vague understanding of what academic research means in the design field.

moment of professionalization. Education still followed practice, however, it began incorporating other subjects, such as theory and art history alongside the normal trade skills. At this time design programs began to appear in the academy, including the publicly funded U.S. land grant university system. Concurrently, a broad-based, general education curriculum became standard in the curricula of other professions (Menand, 2010). The third era began around the mid-nineties, and represents the beginning of design becoming established as a discipline. Buchanan has described the relationship between the academy and the profession in the third era as a “partnership,” where education “anticipates new conditions for practice” and has a more prominent role in determining the direction of the field (Buchanan, 1998, p. 64–65).

How ever the success of design education is connected to that of the profession and general industry—and *vice versa*—the idea of a partnership tends to downplay the contradictory relationship underscored by Schön (1987). Contention may be found in the writings by authors from both sides of the debate, from design educators as likely as professional designers. Alvin Lustig offered an early example:

The school is the area in which a kind of experimentation and research, not possible in the workaday world, is taking place. When the workaday world, however, outstrips the school in theoretical as well as practical knowledge, something is seriously wrong (Lustig, 1958, p.12).

The question of the appropriate balance between vocational skills and a broad-based liberal education is heatedly debated among design faculty, as much as it is a contentious topic of discussion between the academy and the profession (Bellin and Diani, 1990). On the one hand, students require a variety of skills and knowledge that address competencies beyond the merely vocational; on the other, the predominant view of the academy is that the profession values education only for producing a steady stream of

talent—what has been called a “problem of expectation” (Lawson and Dorst, 2009, p. 214) As described in Section 2.2.1, the culture of a field shapes the type of work that is encouraged. Central to this study are competencies concerned with the use of interdisciplinary knowledge, design research and skills of collaboration. The question of what research is needed in the design field—and indeed, what the definition and goals of design research *are*—is a concern that has recently garnered wide attention (Davis, 2008; Stolterman, 2008; Poggenpohl and Sato, 2009). McCoy (1990) suggested more than a decade ago that the profession ought to be concerned with the development and dissemination of design research that is “badly needed” in the field, seeming to direct her comments to design faculty as much as professionals. She argued that graduate programs have a responsibility to advance the field by “experimentation in a reciprocal cycle that connects practice to education to research and back to practice, with each component of the cycle interacting with and enriching the others” (ibid, p. 20). Nevertheless, the purpose of an advanced design degree is still contested (Goulet, 2007).

Recently, Davis (2008) called attention to a 2005 *Metropolis* magazine survey of design research practices. Pointing out the lack of interaction between the profession and the university in terms of research, Davis notes that while 81% of professional respondents regularly engage in research, more than 70% do not include students or faculty in this endeavor. Furthermore, only 17% of academic respondents publish in books, many of which “may be in the areas of criticism and history, not investigations that inform practice directly” (ibid, p. 76). Implicit in Davis’ thesis is that the lack of a research culture in design presents numerous challenges to the growth and development of the field.

The profession depends upon design schools to train competent designers who are able to work on client’s commissions. Conversely, Lawson and Dorst (2009) argued that the academy is an inadequate setting for training professionals, because the

complexities of practice—and the fast pace at which it changes—cannot be authentically simulated in the educational environment. Nevertheless, the reoccurring view found in professional discourse, and from others who hire designers, is that design students do not enter the workforce with the most useful skills or the right attitudes (Bierut, 2004; Fried, 2002; Scher, 2010; Norman, 2010; Anonymous, 2011; Walters, 2011). Arguing more than a decade ago that “the quality of teaching in the university and art school is rarely taken to task,” Rand (1992) continued to do just that, for “making the classroom a perpetual forum for political and social issues,” resulting in “a student whose mind is cluttered with matters which have nothing directly to do with design.” More recently, Walters (2011) suggested that not only are many educators clueless about how business works, she contended that some design schools “seem to promote suspicion of the business world as an unspoken matter of course” (ibid, unpaginated blog). The contradictions inherent in the views of some design professionals—the “children of Marx and Coca-Cola” (Soar, 2002, p. 10)—who would rather “reject the faceless corporate machine, and instead act as lone entrepreneurs in pursuit of their own destiny,” (Walters, 2011), have been noted.

These debates illustrate the wide range of expectations and differences of opinion about the purpose of design education. Furthermore, the views of educators, design students, established professionals and professional industries cast a conflicted definition of professional identity. Lustig’s criticism (1958) was that design schools were not theoretical *enough*; however, the theory-practice pendulum has swung back and forth several times since he published this concern. Design may be one of the few fields where the professional sphere expects graduates entering the field with a Bachelor’s degree to be capable of working as *de facto* seasoned practitioners.<sup>12</sup>

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<sup>12</sup> Medicine and law, for example, expect professional graduates to spend a substantial period of time in training before they are permitted to practice on their own (Evetts, 2003).

## **2.4 Literature Synthesis**

This research is informed by studies of culture that describe the ways in which beliefs, disciplinary associations and ways of working and thinking about professional practice support the structure of design's professional identity—a structure that can be understood by identifying elements in the disciplinary matrix (Kuhn, 1970). The literature also supports the argument that design faculty work within several cultures informed by the larger institution, the discipline and the profession, among others.

Professionalization has had numerous effects on the design field, including the establishment of professional organizations and specialized degrees through higher education. Accreditation through bodies such as NASAD exist for the guidance of design education and specialized degrees have been formalized in design schools, nevertheless, there are no consistent standards that regulate design education and professional practice. Lack of a research culture and disagreement over the purpose of design education demonstrates that design fields are still in the process of attaining disciplinary status and there are notable divisions between the academy and the profession over the field's professional identity. However, the AIGA survey of design education (2006) reveals that the two-sided debate over the purpose of design education and the relationship between the profession and design education is more nuanced than the black and white terms in which it is often rendered.

Design fields have undergone enormous change since the first graduate program was established at Yale—certainly, the entire sphere of work has changed rapidly and dramatically over the last 20 years. Design has witnessed a revolution in technology and communications, the arrival of evidence-based design and more complexity in the designer's role. Despite this change, the design curriculum has not evolved much, and as

other authors have suggested, it remains firmly rooted in the ideological assumptions of its Bauhaus predecessor (Lawson and Dorst, 2009, p. 222).

This study sees the design of a program's educational environment as a reflection of its academic culture. Educational practices and beliefs of design faculty are furthermore an expression of professional identity, and the understanding of design brings much to bear on the way programs anticipate, define and prepare students for changing conditions within its practice. Nontraditional competencies are in conflict with several long-standing assumptions about the field's identity and require design programs to reevaluate how they prepare students for a life in practice. A dearth of research in design pedagogy presents an obstacle for programs seeking to devise an informed approach regarding change in the curriculum. One limitation of pedagogical research in design beyond architecture is that it has been, for the most part, conducted outside of the U.S., where professional education may be very different. Another shortfall in this work, and in much writing on design education, is that it is focused either on student learning or studio teaching; rarely does it examine academic culture as a whole or address the specific context of a design program. Furthermore, this work does not consider what is central to this study: how academic culture shapes the design of the teaching environment and how that environment, in turn, effects educational practices.

### **Chapter 3: Theoretical Underpinnings & Research Design**

#### **3.1 *Relativism and Social Constructivism***

This chapter is an account of the study's research methodology and design and the techniques of analysis. It identifies the underlying theoretical perspective and presents the conceptual framework and research questions. It also provides a rationale for taking a

qualitative approach using constructivist grounded theory (Charmaz, 2006). The chapter concludes with a discussion of the study's limitations and criteria for trustworthiness.

Denzin and Lincoln (2005) contended that all inquiry is conducted within an “interpretive framework” that shapes the researcher's view of the world (2005). It is therefore important that research be understood in the context of a theoretical perspective. This research is grounded ontologically in relativism: it explores relationships among academic culture in design programs, understandings of professional identity and the particular circumstances of the teaching environment where instruction takes place. The study is based on the assumption that all participants, including the researcher as the “data gathering instrument,” co-construct the realities in which they participate (Hammersley and Atkinson, 1995; Corbin and Strauss, 2008). Furthermore, that reality is dependent upon individual participant's experiences, histories, cultures, backgrounds and beliefs.

The purpose of this study is to produce a theoretical understanding of academic practices related to nontraditional design competencies, an interpretation that relies on the analyst's understanding as conveyed by others (Corbin and Strauss, 2008). The relativist nature of reality means that different interpretations are possible and may be expressed in multiple, and even conflicting, viewpoints—even in the consideration of the same phenomenon (Guba and Lincoln, 1998). Interpretation—or as Crotty has called it, “reinterpretation”—is a translation process that seeks to uncover different meanings about a phenomenon in order to understand it more deeply (Crotty, 1998, p. 51). Following Charmaz (2006), this study is informed by a social constructivist theoretical perspective, which assumes meaning to be socially constructed: both data and analyses “are social constructions that reflect what their production entailed” (p. 131). Such a constructed reality is a “theoretical rendering” that “offers an interpretive portrayal of the studied world, not an exact picture of it” (Charmaz, 2006, p. 10).

### 3.1.2 Conceptual Framework

Early approaches to grounded theory suggested that the analyst approach the setting of inquiry free from any preconceived ideas about the focus of analysis (Clarke, 2005; Charmaz, 2006). Contemporary grounded theorists have argued, however, that existing frameworks can “provide insight, direction, and a useful list of concepts” with which to begin (Corbin and Strauss, 2008, p. 40). The conceptual framework that guided this research was adapted from Swidler (1986), while Kuhn’s (1970) disciplinary matrix was used to conceptualize *professional identity* as a system of shared beliefs about knowledge, skills and practices in the design field. The focus is on academic practice and the meanings that undergird it, with a consideration given to the environment wherein the participants work. This framework (Figure 3.1) acknowledges the complexity of the lives of design faculty and the difficulty in outlining a comprehensive model that incorporates all possible influences on academic culture.

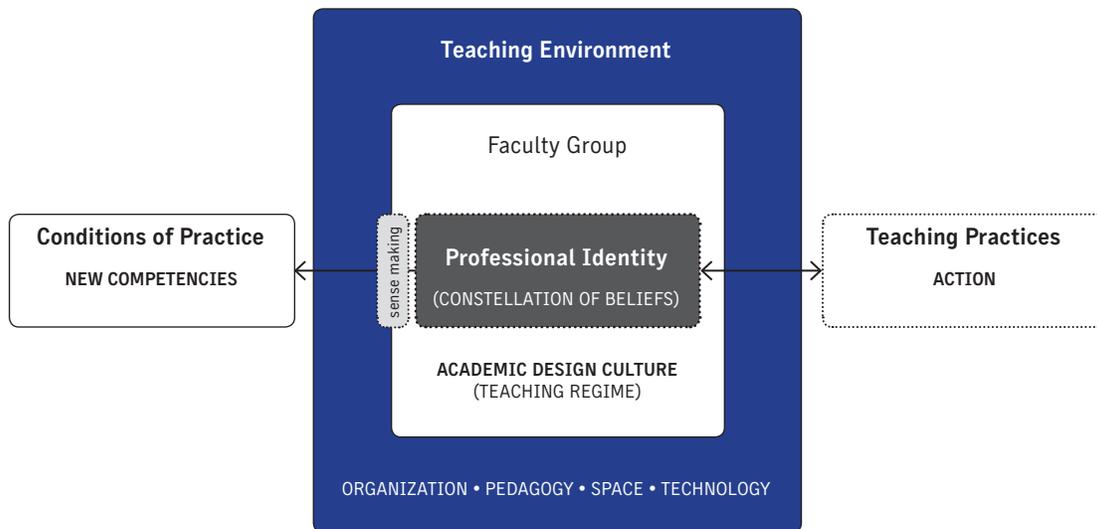


FIGURE 3.1 Conceptual framework for the study. Based on Kuhn (1970) and Swidler (1986).

### **3.1.3 Research Questions**

Research questions direct all inquiry and inform its ontological and epistemological positions, which in turn, inform the appropriate strategies for data gathering and analysis. Several questions directed this research, which arose from my background and familiarity with the design field. Given the flexibility of qualitative research methodologies, as well its emergent design, I also understood that my questions could evolve and new ones arise as the study progressed. Following the suggestion of Corbin and Strauss (2008), the primary research question is broad enough to allow for this degree of flexibility:

*How do different graduate design programs express their approach to anticipating, defining and meeting the demands of preparing students for changes in the professional and social conditions of practice through the design of the teaching environment?*

The goals of the question are to understand the processes related to staying abreast of constant changes in the design field, including how design educators interpret nontraditional design competencies that arise and how they are taught. Specifically, this question explored cultural assumptions about design that facilitated processes that increased the likelihood that programs respond effectively to change perceived in the field.

To fully understand the concepts described in the primary question above, several research subquestions were brought to bear:

*(SRQ1) How do the programs in this study approach the definition of nontraditional competencies as design concepts?*

This question examined how nontraditional competencies “make themselves felt as consequential” (Clarke, 2006, p. 72) in the teaching environment. How have the programs developed their understanding of them? Understandings may be reflected in the activities faculty ask of their students—how might they manifest as strategies in the design

of the teaching environment? The underlying goal of this question was to understand not only how faculty define nontraditional competencies, but also, how they compare in importance to longstanding competencies such as craft and formal aesthetics.

*(SRQ2) What elements characterize the professional identity of design regarding a program's model of practice that includes nontraditional competencies?*

This question looked at how participants constructed a professional identity that incorporated their understandings of nontraditional competencies. As an exploration of the disciplinary matrix (Kuhn, 1970), this question also sought deeper understanding of the knowledge and skills of designers working in the context of nontraditional competencies, and the purpose of an advanced degree. For what professional contexts do faculty prepare students? What roles do graduate programs believe they serve?

AIGA (2006) identified four different practice orientations in graduate design education (invention of form, social model, designer as author and academic research), that suggest different missions and educational philosophies exist among various design programs. Where do faculty situate their program regarding these models? How do they see their programs shaping the future of the discipline, if they do at all? How are their beliefs, values and practices expressed in the design of the teaching environment?

*(SRQ3) From the perspective of the participants, what aspects of the teaching environment enable the effective teaching of nontraditional design competencies (research, interdisciplinarity, collaborative teamwork)? In turn, what aspects inhibit them from doing so?*

This question sought insight into institutional commitments to teaching nontraditional design competencies, and examined the rules and policies that programs instituted in order to prepare students for their particular understanding of the field. Does

a program's approach to nontraditional competencies reflect allocations of human and material resources? The question also explored notions of the role of design and designers by asking faculty to describe the type of designer they hope to educate and the behaviors and values that exemplify successful designers.

An assumption of this research is that teaching environments reveal stories about the culture of design programs through the ideas, values and practices that transpire within them. While instructional settings have a role in shaping educational practices (Trowler, 2008), how does this take place, and in what way does the design of the teaching environment contribute to the process? Are teaching practices that concern nontraditional competencies reinforced in the goals and objectives outlined in the curriculum and coursework? How is the commitment to new design competencies revealed in a program's assignments? Does spatial layout reflect the program's understanding of collaborative teamwork in the field? How does the curriculum enable or encourage the engagement with other disciplines? What do the answers to these questions reveal about a program's understanding of professional identity?

### **3.1.4 Key Terms**

The intent of research is to gather data to answer the research questions, thus it is important to clearly define the concepts used to formulate the questions. Most of these terms were addressed in Chapter 2 in the discussion of professional identity (Section 2.2); others, were brought up in the context of academic and disciplinary cultures (Section 2.3). These terms also served as sensitizing concepts in the analysis of interview and other data sources (Charmaz, 2006).

**anticipating:** being aware of and dealing with beforehand—i.e., being proactive rather than reactive.

**defining:** stating or describing the nature, scope or meaning of something.

**preparing:** making ready to do or deal with something.

**professional identity:** the common set of beliefs and values associated with the activities of designers, how they are done, and the ideas held about their work. A sense of professional identity in design is found in narratives that describe titles, roles, processes of education and training, and how designers organize themselves and their work (Thomson, 1997).

**teaching environment:** in this study, the teaching environment is understood as comprising program culture: the material, social and conceptual practices that make up an education in design. This culture is both a shared idea among all design programs, and it has characteristics specific to individual programs. It includes technology and other tools, spatial arrangements, furniture and physical surroundings. It also includes people's social interactions, as well as having an ideological dimension that is expressed through such tools as mission statements, policies, curricula, coursework, learning objectives, and so on.

The teaching environment has four dimensions (Figure 3.1): (1) *the organization*, including the curriculum and other institutional structures; the philosophical mission for teaching and learning; (2) *the pedagogy*, including approaches to teaching and assessment; (3) *the technology*, including digital software and hardware and other digital assets like network communications and nondigital tools; and (4) *the space* is the physical, material classroom, including its furnishings and spatial arrangements.

### **3.2 Qualitative Research Design and Methodology**

The selection of research method is based on that which is most appropriate for answering the research questions (Cresswell et al., 2007). Because the questions were not written to limit the investigation to only those concepts identified in the conceptual framework

(Figure 1), an approach that would allow for “unanticipated phenomena and influences... [while] promoting understanding of the process by which events and actions take place” was needed (Maxwell, 1996, p. 19).

A qualitative approach is appropriate when the goal is to make sense of complex situations or processes, learn about the experiences of participants, construct theory or gain an in-depth understanding of a phenomenon about which little is known (Groat & Wang, 2002; Creswell, 2007). It is also used for “locating the meanings people place on the events, processes and structures of their lives and connecting these meanings to the social world around them” (Miles and Huberman, 1994, p. 10). For this study, a qualitative approach was selected as the most appropriate in that it promotes understanding of the context in which the participants act—including the influence that context may have on action (Maxwell, 1996). Because the grounded theory that was ultimately produced in this study was grounded in data derived from design educators’ perspectives and experiences, it not only can enhance understanding of design pedagogy and provide insight, it can be used to inform meaningful guide to action regarding teaching nontraditional design competencies (Corbin and Strauss, 2008).

Qualitative inquiry involves the study of phenomena in their local settings to understand the research topic in terms of the meanings people bring to them (Denzin and Lincoln, 2005, p. 3). Unlike positivism, value-free objectivity is not the goal. Positivist philosophy, associated with the scientific method, holds the world to be predictable, that reality can be objectively observed through manipulating and controlling variables and explained through cause and effect. Qualitative research, on the other hand, is iterative and interpretive (Miles and Huberman, 1994; Charmaz, 2006). In an interpretive role as the “data gathering instrument,” the qualitative researcher values knowledge gained from past

experience and does not approach the research process as an objective observer, removed from the object of study (Charmaz, 2006).

Qualitative research from a social constructivist perspective grounded in relativism, holds that truth is constructed at individual and group levels, wherein multiple truths exist and reality is not fixed—as Clarke explained, “What people believe to be true is situational” (2005, p. 110). Meanings interpreted through the analysis of qualitative data are, according to Charmaz, “social constructions that reflect what their production entailed” (2006, p. 131). In this regard, my background, interests and experiences in the design field are the interpretive lens through which I understood design pedagogy as an object of study (Denzin and Lincoln, 2005). The researcher’s background bears on this work, including education and training. Prior experience also provided an informed perspective with which to understand the meanings of the words invoked by the participants in this study and facilitated the identification of more comprehensive categories. Specifically, the product of this study—a grounded theory generated from the data of the participants—was influenced by the worldview of the researcher, including current understandings of the research area where the study took place.

### ***3.2.1 Qualitative Grounded Theory***

Qualitative research claims a wide range of methodological, intellectual and disciplinary perspectives (Morgan and Smircich, 1980; Mason, 2002). Cresswell (2007) identified five general traditions: (1) biography; (2) phenomenology; (3) grounded theory; (4) ethnography; and (5) case study. The choice of research strategy should align with the purpose of the study and concur with the researcher’s ontological and epistemological stance (Cresswell et al., 2007)—all of which are addressed in the previous section. With

these criteria in mind, the research strategy used in this study was qualitative grounded theory (Corbin and Strauss, 2008).

Theorizing means “stopping, pondering and rethinking anew” through activities that help the analyst see possibilities, make connections and ask questions (Charmaz, 2006, p. 135). Glaser and Strauss (1967) developed grounded theory as a strategy for methodically analyzing data with the intent of building theory. The conceptual roots of grounded theory lie in Symbolic Interactionism (Blumer, 1969), a sociological perspective that considers how subjective meaning is made in the process of interaction between individuals or groups and their social roles and behaviors (Clarke, 2005). Interaction is understood as symbolic as it occurs with symbols, objects, interpretation and language (Denzin, 1989). ‘Theory’ in the grounded theory approach is a “set of well-developed categories that are systematically interrelated through statements of relationship to form a theoretical framework that explains some phenomenon” (Corbin and Strauss, 2008, p. 55).

Grounded theory is used in numerous fields to generate substantive and formal theories that are typically “heuristic rather than predictive” (Piantanida, Tananis and Grubs, 2004, p. 335). While formal theory considers broader and sometimes philosophical issues, substantive theory addresses specific empirical or applied issues, often grounded in findings from a particular substantive area (Corbin and Strauss, 2008, p. 79). Substantive theory “provides the stimulus to a ‘good idea’” so that over time, and with additional research, a formal theory may be developed (ibid, p. 32–33). Not only is grounded theory “particularly effective at understanding the processes by which actors construct meaning out of intersubjective experiences” (Suddaby, 2006, p. 4), it is appropriate in situations where no theoretical frameworks exist (Sarker et al. 2001; Corbin and Strauss, 2008).

Theory is derived from an “imaginative understanding of the studied phenomenon” (Charmaz, 2006, p. 126) and relies on the analyst’s perspective—a

perspective that develops from being immersed in the data in order for “embedded meanings and relationships to emerge” (Patton, 2002). *Theoretical sensitivity* refers to the ability to conceptualize from the data and relate categories, properties and dimensions into a coherent theory. Grounded theorists understand “theoretical sensitivity/wisdom not as a methodological technique or strategy, but rather as a way of *being* in the inquiry, a state of mind that strives to be as fully and completely attentive as possible to the phenomenon one wants to understand” (Piantanida, Tananis and Grubs, 2004, p. 335).

There are many approaches to grounded theory. This research used recommendations from Clarke (2005) and Charmaz (2006) to support Corbin and Strauss’ (2008) general grounded theory procedures. Charmaz (2006) developed a constructivist approach to grounded theory because of her concern with an “immutable, procedural orthodoxy” (Piantanida, Tananis and Grubs, 2004, p. 329) in other, more positivist approaches that ran counter to the flexible strategies developed originally by Glaser and Strauss (1967).

The second body of writing that supported this study is “situational analysis,” developed as an “enlargement” of traditional grounded theory as an “alternate approach to *both* data gathering and analysis/interpretation” (Clarke, 2005, p. xxii). Positioning the researcher as a “cartographer,” Clarke’s visualization tools (situation maps, social arenas maps, and position maps) are strategies for “analyzing multiple aspects of interrelations in the research area, the outcomes of which are ‘thick analyses’” (ibid, p. xxiii). Others have promoted visualization techniques in qualitative research, including Maxwell (2005), who recommended concept mapping for understanding conceptual relationships. In this study, Clarke’s (2005) “analytic exercises” enabled a rich depiction of the properties, conditions and dimensions that emerged in the participants’ teaching practices, and helped unify concepts across different data sources. Because this study is concerned with visual

thinkers, a visual approach is logical, and would, perhaps, be appreciated: the findings of the study were rendered in terms suitable to its intended readers.

### **3.3 Selection and Recruitment of Programs and Participants**

Initial sampling is where the criteria for selecting people, cases, situations and settings are established before actual data is collected (Charmaz, 2006). The programs that were ultimately recruited for this study were selected from a list of 352 design schools that responded to a voluntary survey (AIGA, 2006),<sup>13</sup> and from a database of 254 nationally accredited programs, publicly available on the NASAD Website.<sup>14</sup> Through non-probabilistic purposeful sampling—specifically criterion sampling (Patton, 2002)—the initial list of 352 programs was narrowed down to 18 using criteria identified during preliminary analysis of mission statements and course offerings published on program Websites. Programs that explicitly emphasized the competencies pertinent to this research formed the base from which final participants were ultimately recruited, by using the following criteria: (1) graphic and interactive media design programs that award the terminal Master’s degree; (2) programs that profess, through mission statements and other literature, emphases on design research; the incorporation of knowledge and practices from disciplines outside the design field; and team-based collaborative design projects; and (3) programs that were accessible to the researcher. Considering the flexibility of the

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<sup>13</sup> There are several different types of degree awarded to graduates of design, some with multiple labels for the same degree. These include: a two-year Associate of Arts (AAS); Bachelor of Arts (BA); Bachelor of Fine Arts (BFA); Bachelor of Graphic Design (BGD); Bachelor of Science (BS); Master of Fine Arts (MFA); Master of Design (MDes); Master of Graphic Design (MGD); and the Ph.D. Furthermore, there are a bewildering number of design programs in the U.S., and data on existing undergraduate and graduate programs is remarkably difficult to obtain. NASAD houses one of the few publicly available databases of U.S. design programs, however it is limited to the 245 (roughly) institutions NASAD accredits. Some authors suggest there are over 2,000 schools in U.S. that claim to teach graphic and interactive media design (McCoy, 1997; Davis, 1998).

<sup>14</sup> 263 programs in total, accounting for the deletion of duplicate programs between the two databases, and those that located outside of the U.S.

curricula and coursework, graduate programs were an appropriate site to study pedagogic practices related to the competencies that were the focus of the research.<sup>15</sup>

Patton (2002) explained there are no fixed rules for determining sample size in qualitative research—the number depends on what the researcher wants to know, the purpose of the study, what will provide credibility, as well as available time and resources. Because a goal of this research was to build empirical knowledge that could be used to inform future recommendations or guidelines, the selection of programs included those that are widely recognized as leaders in the design field. This admittedly subjective criterion included: programs with faculty and department heads who have been acknowledged leaders in design education; programs presented as exemplars by the general design press, popular design blogs, professional associations, or those that have often been included on well-known “best of” lists (e.g., *U.S. World and News Report*); and programs commonly recommended by notable design professionals, as reported on studio Websites and other popular venues where professionals often post public comments.

From 18 schools identified during the preliminary analysis, 31 faculty ultimately shared their thoughts for this research. In summary, the four programs (Table 3.1) represent a range of organizational structures common to design education in the U.S. Drawing on categories from the AIGA (2006) survey, these programs represented: (a) different structural contexts—private and public colleges and universities, “research-oriented” and “teaching-oriented,” schools of fine art and design; (b) diverse geographic locations; (c) a range of years in operation—recently established (10 years or less) to older (11 years or more); and (d) different orientations to practice, including professional practice model, social design model, designer as author model and academic research model. Program orientation was suggested in mission statements and other recruitment

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<sup>15</sup> A NASAD/AIGA joint briefing paper explains, “There are no practice-driven criteria that shape master’s curricula” as in BFA programs. Graduate programs have more flexibility in their curricula content.

literature. Curricula and coursework also provided clues for understanding how a program and the faculty position themselves in the field of graduate design schools at large.<sup>16</sup>

**TABLE 3.1 Demographic data of the four graduate design programs**

DEGREE	PRACTICE ORIENTATION	STRUCTURE	AFFILIATION	PUB/PRIV	YRS
<b>Prg 1: northeast</b>					
MDes	Professional Practice*	College of Fine Arts	School of Design	Private	15<20
			School of English		
<b>Prg 2: south</b>					
MDes	Academic Research*	College of Design	Dept. of Graphic Design	Public	25<30
<b>Prg 3: midwest</b>					
MFA	Human Centered*	School of Art & Design	Dept. of Visual Communications	Public	0>5
<b>Prg 4: west</b>					
MFA	Designer as Author*	College of Art & Design	Graduate Studies	Private	10<15
*refer to footnote 16					

Program names are pseudonyms.

After determining program selection, department heads were contacted by email to solicit interest in taking part in the study (Appendix A). Faculty were similarly contacted upon consultation with department heads (Appendix B), selected through intensity sampling (Patton, 2002). Selection was based on a participant’s potential to offer in-depth understandings of the program and the current climate in design practice (Creswell, 2003).

<sup>16</sup> The boundaries between AIGA’s four orientations are porous. Respondents were allowed to choose multiple orientations to practice, and notably, more than 50% of respondents selected 2 or more. In considering the mission statements, course descriptions and other program literature, an inclination and preference for one orientation over another can usually be discerned. The decision to assign specific orientations to the programs in this study was based on a careful reading of their materials; however, it is important to note that all 4 programs exhibited characteristics of each AIGA orientation to practice.

31 participants representing a broad range of faculty ranks and years of teaching experience ultimately took part in this research (Table 3.2).

**TABLE 3.2 Demographic data of the participants**

NAME	RANK	FACULTY APPOINTMENT	YRS
<b>PROGRAM 1</b>			
Kathy	Professor	School of Design	1
Mike	Professor	School of Design	28
Bill	Assistant Professor	School of Computer Science/School of Design	8
Robert	Associate Professor	School of English	10
Spencer	Professor, Head	School of English	30+
Sarah	Associate Professor	School of Computer Science/School of Design	10
Jeff	Associate Professor	School Design/Department of Industrial Design	12
Amy	Associate Professor	School of Design	10
Riley	Associate Professor	School of Design	7
James	1 YR. Visiting Professor	School of Design/Program 1	na
Ray	Visiting Assistant Teaching Professor	School of Design/Program 1	1
Mitch	Part-time Faculty	School of Design/Program 1	>1
Judy	Part-time Faculty	School of Design/Program 1	>1
Kevin	Part-time Faculty	School of Design/Program 1	>1
<b>PROGRAM 2</b>			
Jill	Professor	College of Design/Department of Graphic Design	35+
Jennifer	Associate Professor	College of Design/Department of Graphic Design	8
Elizabeth	Professor	College of Design/Department of Graphic Design	30+

**TABLE 3.2 (continued)**

NAME	RANK	FACULTY APPOINTMENT	YRS
<b>PROGRAM 3</b>			
John	Associate Professor	School of Art & Design/Dept. of VisCommunications	8
Mae	Associate Professor	School of Art & Design/Dept. of VisCommunications	7
Joe	Assistant Professor	School of Art & Design/Dept. of VisCommunications	5
Rebecca	Assistant Professor	School of Art & Design/Dept. of VisCommunications	3
<b>PROGRAM 4</b>			
Lynn	Core Faculty	College of Art & Design/Program 4	10
Jason	Core Faculty	College of Art & Design/Program 4	9
Alan	Full-time/Associated Faculty	College of Art & Design	7
Anthony	Core Faculty	College of Art & Design/Program 4	1
Mark	Core Faculty	College of Art & Design/Program 4	3
Kelly	Part-time Faculty	College of Art & Design/Program 4	11
Charles	Full-time/Associated Faculty	College of Art & Design/Environmental Design	22
Kim	Part-time Faculty	College of Art & Design/Program 4	>1
Mary	Full-time/Associated Faculty	College of Art & Design/Humanities & Design Sciences	6

All names of participants are pseudonyms. Faculty ranks vary from program to program. Appointment is the current school(s), college(s) or department(s) the participant is assigned to teach within. Although all participants were assigned to teach in the design programs under study, an appointment may not be in the school, college or department wherein a program is located. Years = total years served at the program, which may be under different capacities or may not have been served consecutively.

The general criterion for selecting individual faculty was that they currently teach at the graduate level. In grounded theory, the number of recommended participants also depends on the purpose of the study, the quality of the data and achieving theoretical saturation (Charmaz, 2006). Charmaz (2006) recommended that a reasonable number should fall between 20–30 individuals. In this study, a selection of four programs and 31 participants provided a balance and variety of perspectives and research settings.

It should be noted that no assumption were made that programs or participants were statistically representative of U.S. graduate design programs as a whole. While it is fairly certain that the four programs that ultimately participated in the study are not alone in their consideration of the change taking place in the design field; it was nevertheless revealing that at the initial analysis of 254 schools, only 18 were clearly identified as taking *discernible* action through including specific educational experiences directed toward teaching the nontraditional competencies, as described in this study. The 18 programs formed the base from which the final four were chosen.

### **3.4 Data Collection from Multiple Sources**

Data were collected according to the procedures prescribed in the relevant methods literature (Miles and Huberman, 1994; Guba and Lincoln, 1985; Patton, 2002; Creswell, 2007; Charmaz, 2006; Strauss and Corbin, 2008). More than 45 hours of interviews were transcribed and analyzed during this research. Data were gathered from a variety of sources, including: individual semi-structured, in-depth interviews; curriculum documents, course descriptions, syllabi and assignments; and field notes of the site observations. In-depth, semi-structured interviews with department heads and faculty comprised the primary data source, while documents and site visits served as supplementary material. Analytic memos and reflective notes also supported the analysis. The variety of source material was chosen to provide a sufficient amount of substantial data that would allow for multiple views of pedagogic practices associated with nontraditional design competencies, while accounting for triangulation (Guba and Lincoln, 1985).

Interviews began only after permission was granted through the Institutional Review Board at North Carolina State University (Appendix C). Discussions were

conducted from January–May, 2010 during scheduled visits to each program. Except for three interviews that took place by telephone, all conversations were face-to-face and included a set of general questions that changed slightly as the study progressed.

Interviews were designed to address the questions in about an hour, although participants were given extra time and latitude to respond completely as needed. All interviews were digitally recorded and transcribed verbatim. Follow up questions were also arranged through email as necessary.

Patton wrote that “The quality of the information obtained during an interview is largely dependent on the interviewer,” (2002, p. 341), and furthermore, even though researchers do not write them to be leading, questions influence the content of interviews and direct the exchange (Weiss, 1994). Many methodologists note that flexible protocols are better suited to the goals of qualitative research (Weiss, 1994; Hammersley and Atkinson, 1995). The decision to use a flexible protocol, as opposed to a structured one, was based on Glaser’s concern that the analyst’s ability to construct grounded theory would become compromised by strict protocols (Glaser, 2001). The interview techniques that concerned him most include those designed to control the pace and delivery of responses—e.g., asking all respondents identical questions, reading the interview protocol verbatim and asking questions in a neutral tone that does not allow the researcher to make comments or interject. Corbin and Strauss suggested that an open protocol enables the deeper understanding of a respondent’s point of view, and that, furthermore, it is important to let the participant’s response guide the direction of a discussion (Corbin and Strauss, 2008). A loose protocol thus allowed the participants in this study to bring up their own ideas and issues about the design field, the education of designers and the culture of their respective institutions.

As the study progressed, questions were refined to ensure depth of understanding (Corbin and Strauss, 2008), and to address an individual's specific area of design expertise and interests. When participants brought up relevant topics not addressed through the questions, these topics were included in continuing interviews. In a controlled plan designed to test hypotheses, such modification to the interview protocol would be a methodological concern (Guba and Lincoln, 1998). Because this research was exploratory, the ability to refine ideas gained from changes made to the interview protocol served the goal of developing grounded theory (Charmaz, 2006). Questions covered general topics related to the research questions (Appendix D). My involvement in the interview process involved open-ended questioning and clarification to encourage a complete response. The style of questioning was casual to develop rapport and facilitate the discussion. Questions initially asked about professional and academic backgrounds and the respondent's role as a faculty in the graduate program. Discussion areas concerned professional and educational practices to reveal beliefs about design practice and how the participants anticipate change in the field. Topics included the sources of their ideas, the purpose of a graduate degree and the mission of the program. Questions related to teaching and the instructional setting addressed teaching philosophy, curriculum structure, learning objectives and project assignments that incorporate nontraditional competencies, as well as related issues such as the use of technology and program resources that support teaching.

Documents were downloaded as existing data from program Websites or sent by individual faculty by email, and were used as supplementary material to the interviews that created an aggregate of data from different, but related sources (Charmaz, 2006). In this sense, documents facilitated triangulation and helped draw a more comprehensive picture of the programs, thereby increasing the validity of findings (Guba and Lincoln, 1985; Charmaz, 2006). Curricula and course syllabi served to identify specific classes for

observation as well as facilitated the customization of interview questions. Other documents that were pertinent to this research included self-studies for SWOT analyses<sup>17</sup> or accreditation reviews. Curricula, course descriptions and project assignments provided substantial information about program values, goals and objectives as well as individual faculty interest areas. Mission statements, recruitment literature and student handbooks were consulted for insights into the history and culture of the programs.

Courses were observed that were relevant to the issues addressed in this research and were selected before site visits commenced. Selections included studios and seminars that addressed research methods, collaborative projects and cross-disciplinary coursework. Furthermore, I remained open to observing other courses that participants recommended to me. Site visits were scheduled at each program that lasted from 10–14 days during February–May, 2010. While visiting schools, I immersed myself in their culture and setting, spending several hours each day. I attended all courses on the schedule at least once, and viewed the studios and other public spaces to get a sense of the program’s “everyday life.” This firsthand experience was crucial for gaining a sense of the teaching environment. Observations focused on how classroom spaces were used, the spatial layouts and furniture arrangements, as well as available technology. Where appropriate, and with permission, I photographed studios, labs and other areas of the general environment.

Even though I was not conducting true ethnographic research, I recorded my reactions, thoughts and emerging ideas after interviews and class visits in the spirit of writing field notes (Figure 3.2). Field notes captured early insights in the preparation and planning for further interviews and observations, and enabled the writing to move beyond descriptive observations to an exploration of interpretive ideas (Hammersley and Atkinson, 1995). Reflective notes also documented personal impressions and served as a

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<sup>17</sup> Strength-Weakness-Opportunities-Threats.

record of changes in thinking (Figure 3.3). Reflection over developing insights brought assumptions to the surface and enabled me to assess the thickness of data, thus adding depth and richness to the analysis (ibid, 1995).

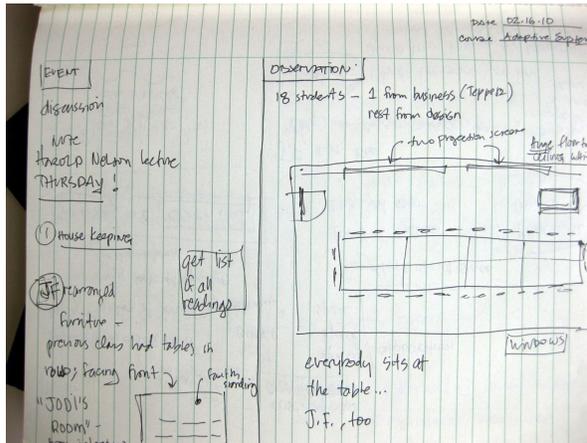


FIGURE 3.2 Page from researcher field notes

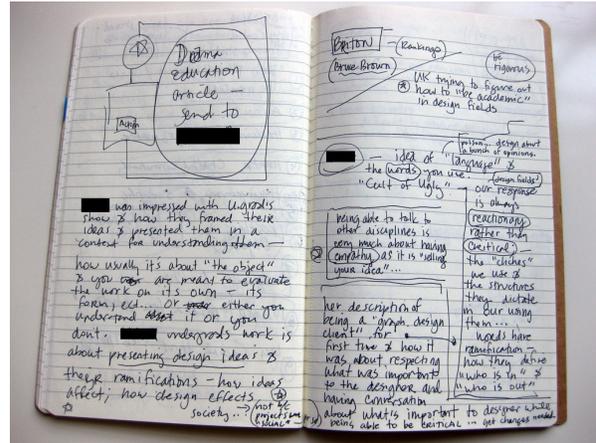


FIGURE 3.3 Spread from researcher reflective notes

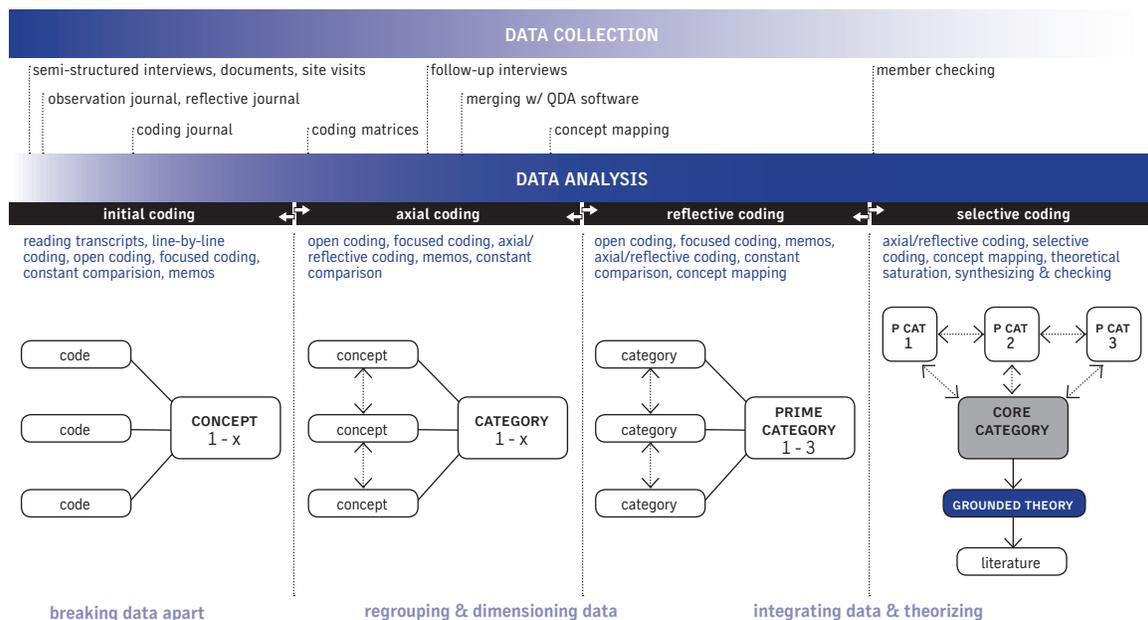
Time spent at each program provided numerous opportunities to observe teaching styles first hand and yielded an enriched understanding that interviews and documents alone might not have provided. On several occasions, impromptu conversations became opportunities to learn more about program histories, concerns and plans for future development that were not addressed during interviews. According to Charmaz (2006), using data from such different sources leads to conceptual density and robust theory development.

Interviews were digitally recorded, saved as individual MP3 files and transcribed verbatim. As a precaution, notes were taken during the interviews to serve as backup data (Weiss, 1994). Once interviews were transcribed, digital files remained on the hard drive of my personal computer, and transcript hardcopies were secured in a residential office where documents and other program materials, photographs, notes and digital storage devices were stowed. Throughout the study, I was mindful to protect individual participant

and program identities in written notes with pseudonyms, as described in the IRB Consent Form (Appendix E).

### 3.5 Data Analysis

Qualitative data analysis stems from the analyst’s interaction with participants and data in a process that involves four general phases: (1) data reduction, (2) data display, (3) conclusion drawing and (4) verification (Miles and Huberman, 1994). Analysis procedures used in this study (Figure 3.4) are from Charmaz (2006) as well as Corbin and Strauss (2008), while Clarke’s (2005) method of visual mapping was used to enrich the understanding of relationships in the emerging concepts and categories in the analysis. Grounded theory builds theory rather than tests it (Guba and Lincoln, 1998), and thick description is the means by which “thick analysis” is developed (Clarke, 2005).



**FIGURE 3.4 Data analysis and collection procedures.** The phases of data collection in the grounded theory constant comparative method used in this study.

Interviews, field notes and documents were analyzed using constant comparison and writing analytic memos—a process which took approximately 14 months (Corbin and Strauss, 2008). In keeping with grounded theory procedures, coding started when data were collected. The first step was to identify important ideas or events as concrete concepts (Charmaz, 2006). Initial coding involved two phases: open coding, whereby codes are identified through a close reading of the data; and focused coding (Figure 3.5–3.6), where the most significant codes are used to “sort, synthesize, integrate and organize” the data (ibid, p. 46).

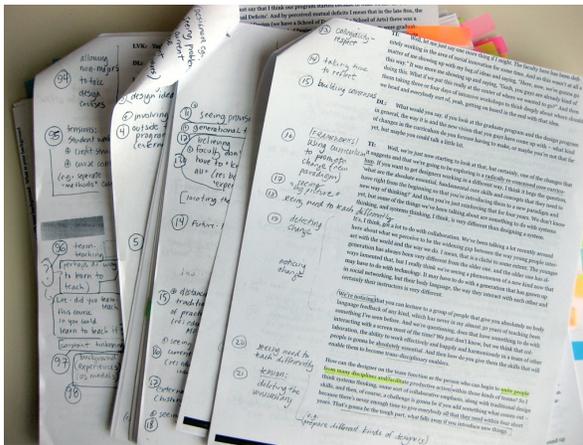


FIGURE 3.5 Open coding

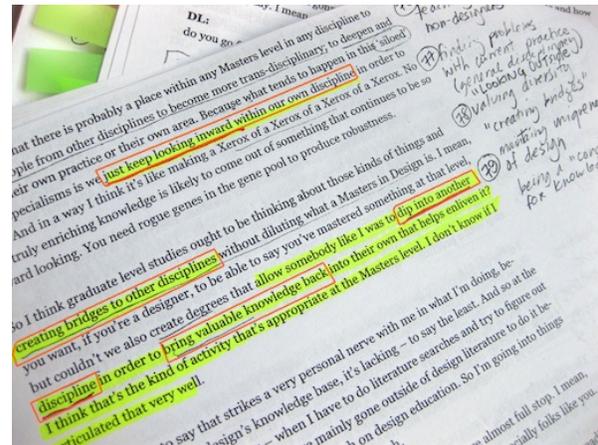


FIGURE 3.6 Focused coding

While closely reading transcripts line-by-line in open coding, I sought to identify action and remain open to new directions using “theoretical sensitivity” (Charmaz, 2006). Where possible, codes were labeled by *in-vivo* phrases in the participants’ exact words—else, as inductive codes using sensitizing concepts or concepts from the literature (ibid; Corbin and Strauss, 2008). Charmaz described *in-vivo* codes communicated in the language of participants as “symbolic markers” that are “characteristic of social worlds and organizational settings” and reflective of “assumptions and actions” that help the analyst frame meaning (Charmaz, 2006, p. 55). Examples of *in-vivo* codes in this study included

such phrases as “reading outside the field,” “getting outside the studio” and “looking outside design” (Figures 3.7–3.9). Once I became aware of similarities in the meanings of different concepts, I used focused coding to organize the data into more abstract concepts to facilitate their integration into categories (ibid, 2006). As suggested by Charmaz (2006), abstract concepts were labeled as gerunds. “Gerunding” keeps the analysis on process while “sticking to the data” (ibid, p. 49). For example, the abstract concept “design ≠ art” related to the more abstract category “distancing,” with active gerund codes “finding problems with current practice” and “establishing rigor” (Figure 3.10).

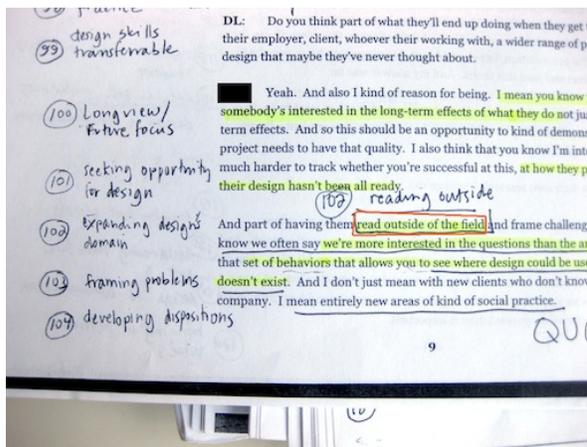


FIGURE 3.7 In-vivo code “reading outside the field”

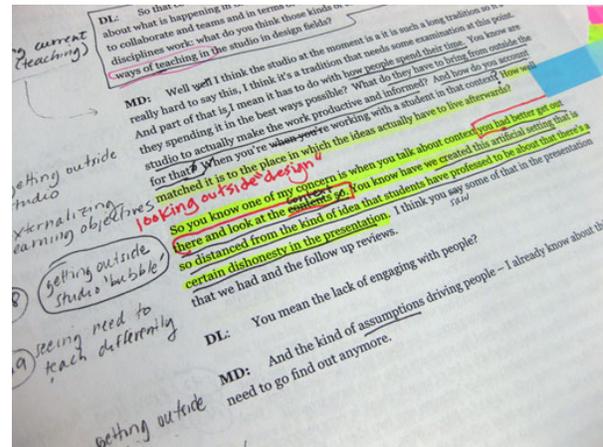


FIGURE 3.8 In-vivo code “getting outside the studio”

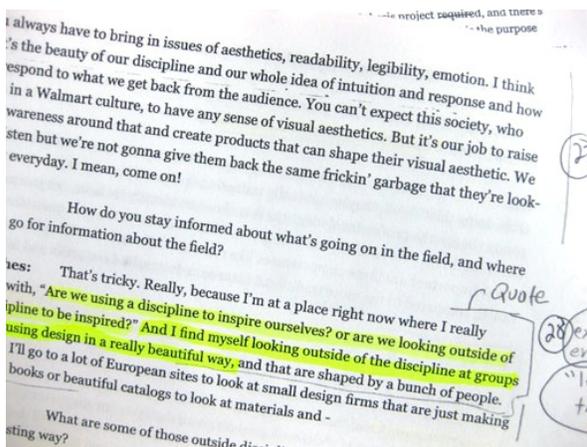


FIGURE 3.9 Gerund “looking outside design”

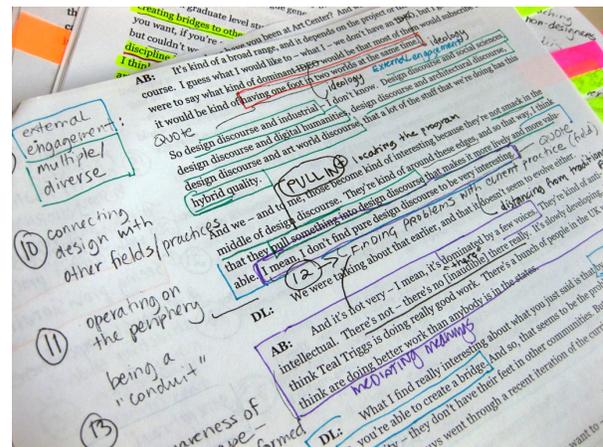


FIGURE 3.10 “Distancing” & “finding problems” gerunds





The qualitative data analysis software program *HyperResearch* was used to facilitate reflective coding, which was carried out according to Charmaz's (2006) four recommendations: (1) describing the properties of each category and its dimensions; (2) identifying the conditions, actions-interactions, and consequences of each category; (3) looking for relationships between categories and subcategories; and (4) looking for relationships among categories. It must be noted, however, that the movement between data collection and the different coding phases was an iterative process rather than a linear progression (Corbin and Strauss, 2008; Charmaz, 2006).

Axial coding is the process of asking "when, where, why, who and how" questions to locate possible conditions, strategies, interactions and consequences in the categories (Charmaz, 2006, p. 60). An example of axial coding in this research was "mediating meanings." The conditions of "having a foot in two worlds" and "pushing design in new areas" related to processes that involved "providing frameworks" and "externalizing expertise." These interactions led to the consequences of "different designers" and an "expanded-elevated field" by developing frameworks "unique to design."

Data went through several rounds of deconstruction and reconstruction as more reading and rereading revealed further nuance in meaning. As coding progressed, categories were either disconfirmed or refined, extended and modified as analysis continued and more data were collected (Corbin and Strauss, 2008). Analytic memos written in the *HyperResearch* data analysis software (Figures 3.15–3.18) documented the development of categories and their relationships, and kept categories grounded in the data and close to the participant responses to help the analysis build upon developing propositions (Charmaz, 2006).

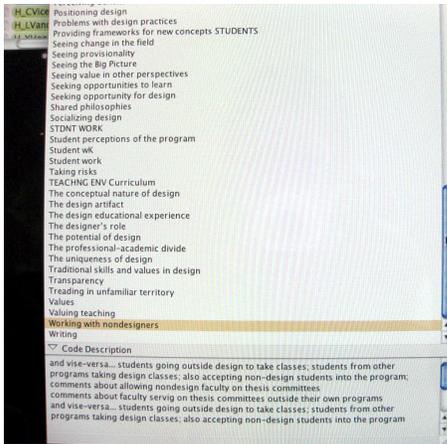


FIGURE 3.15 Memo (working with non-designers)

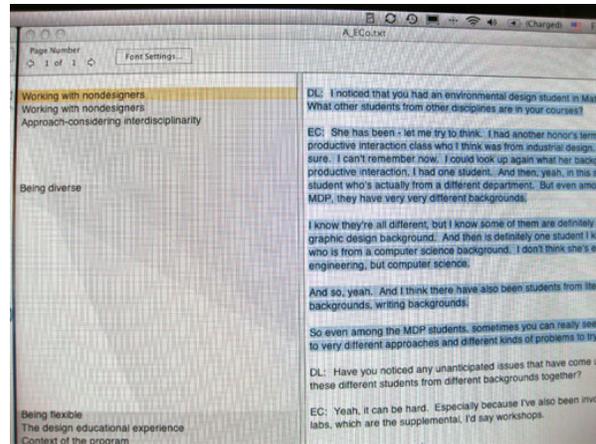


FIGURE 3.16 Memo (diverse student backgrounds)

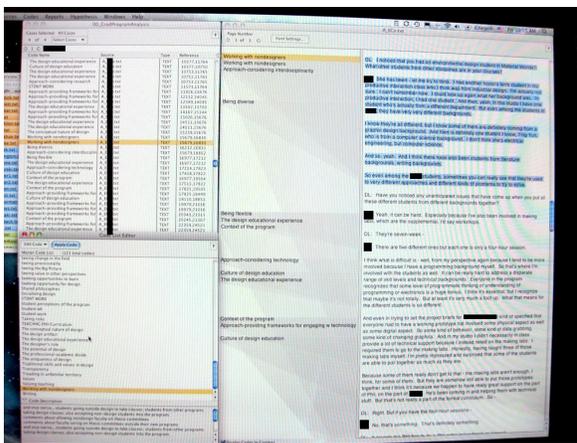


FIGURE 3.17 Memo (being flexible)

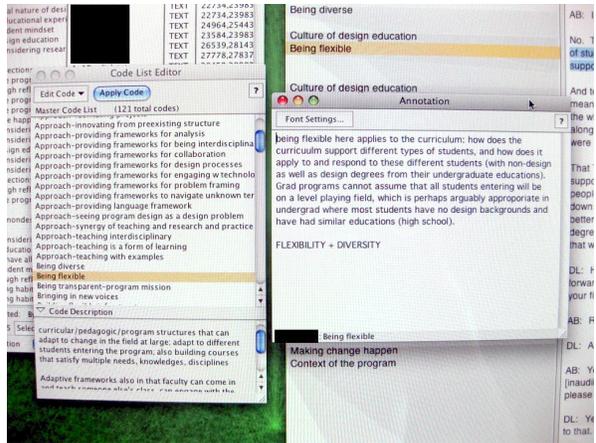


FIGURE 3.18 Memo (flexibility & diversity)

Strauss described the annotation of codes and concepts through “memoing” as a record of the “continuing internal dialogue” of the analyst from which “integrative statements” in the final theory will be derived (Strauss, 1987, p. 110). The process of joining concrete concepts to become increasingly more abstracted categories, linked by propositions, leads to the development of theory (ibid). Selective coding, is the integration of the categories to produce the grounded theory. Integration begins by determining a *core category* or central phenomenon that the theory describes, and orienting the other categories to the core. Integration takes place with the use of a process model that links the

“action-interactional sequences” (Charmaz, 2006, p. 144). Corbin and Strauss explained that a core category “appears frequently in the data, and all other categories easily relate to it through logical statements of explanation” (2008, p. 105). A core category must further display enough significant meaning and detail to exhibit “high explanatory relevance,” while allowing for variation (ibid, p. 104). In this study, the core category was “transactive integration,” with subcategories “transactive perspective” and “transactive alignment.”

Additional steps were taken to achieve saturation and verify the theory against the data (Corbin and Strauss, 2008). Data were rechecked and words were analyzed for new meanings during refinement, when the categories approached the point of “theoretical saturation” where “no new properties of patterns emerge” (Charmaz, 2006, p. 113–114). When similar expressions and concepts began to appear repeatedly—and with less variety in responses—the categories were sufficiently saturated to formulate a vivid picture of program strategies for anticipating, defining and preparing students for change in the conditions of practice through the design of the teaching environment. As Lomborg and Kirkevold wrote, major categories in a grounded theory should be consistent and preserve the “imageric content of the experience” of graduate design programs, thus “composing a story” in the language of participants (2003, p. 195). Constructing this story was a process of organizing and relating analytic memos and “grappling” with the material (Charmaz, 2006, p. 123) to reunite the components that addressed the research questions. The result, described by Clarke as “thick analysis,” is a detailed description that is supported by analysis and interpretation (Clarke, 2005).

### **3.6 Verification, Trustworthiness and Quality Standards**

Verification addresses concerns about trustworthiness, rigor and quality in qualitative research (Golafshani, 2003, p. 604). While positivism emphasizes internal validity,

external validity, reliability and objectivity, naturalistic research concerns the criteria of credibility, reliability and verification (Lincoln and Guba, 1985).

Reliability and verification address the appropriateness of methods and the quality of the collected data (Creswell, 2007). Several strategies that were used in this study are generally accepted for increasing trustworthiness in qualitative research: (1) triangulation of data; (2) member checking; (3) time in the field; (4) use of peer reviewers; (5) thick description; (6) documentation of the research process; and (7) clarification of bias (Creswell, 2007). Triangulation addressed the problem of excessively relying on any one data source, which would undermine credibility of the conclusions. Strategies leading to triangulation were the use of different data sources and consulting extant theories to document and confirm evidence. Data from in-depth interviews, documents and observations enabled the research to develop along converging lines through triangulation (Clarke, 2005).

Member checking was also used to confirm the analysis with participants to ascertain meaningfulness, as “the single most important action researchers can take” that also “goes to the heart of the credibility criterion” (Guba, 1981, p. 85). Member checks were conducted after data were analyzed and the primary categories and concepts had developed. These early analyses were shared to ensure that interpretations were meaningful and credible from the participants’ point of view. Additionally, their responses aided in the process of refining the final grounded theory. Member checks did much to deepen the understanding of program culture, while enhancing the credibility of findings. Member checking was also appropriate for this study in that it was approached in the participatory spirit of qualitative research (Lincoln and Guba, 1985).

Guba described several strategies to account for data becoming unstable when “different realities are being tapped or because of instrumental shifts stemming from

developing insights of the investigator-as-instrument” (1981, p. 86). These issues were addressed through triangulation and the collection of complimentary data, as stated previously in this section. Along with Guba’s suggestions, detailed reflective notes and analytic memos were recorded. In this regard, I took Charmaz’s advice “to make everyone’s vantage points and their implications explicit—[the researcher’s] as well as those of various participants” (2006, p. 184). To further confirm that this study adhered to the requirements of qualitative research, Section 3.8 addresses the vantage point of the researcher, while Chapter 3 and Chapter 4 provide a detailed description of the research protocol and the data collection and analysis procedures. Finally, members of the research committee served as external reviewers for this study.

Guidelines for evaluating quality in grounded theory also include the criteria of fit, relevance, workability and modifiability (Charmaz, 2006). Even though multiple interpretations are possible, some explanations are more compelling for theoretical reasons (Miles and Huberman, 1994). Good grounded theory must “fit the area from which it was derived and in which it will be used,” meaning it is useful or “sufficiently general to be applicable to diverse situations” (Corbin and Strauss, 2008, p. 300). A grounded theory study demonstrates fit if the categories emerge from the data rather than from pre-established theoretical positions. While this study focused on specific graduate design programs, transferability is possible if other researchers can recognize the findings in their own studies.

Regarding transferability, it is important that researchers provide detailed accounts of the data analysis process. To satisfy the transferability criterion, data have been reported in a manner that will allow readers to determine if the ideas in this study are applicable to their own. Theory is relevant if it is judged to be relevant to the actions described in the research area it seeks to explain and focuses on core problems and

processes. To meet the criteria of modifiability, the grounded theory must also suggest a level of abstractness that allows it to change as new data emerge (Charmaz, 2006). Criteria for evaluating qualitative research and grounded theory have been addressed in this chapter, and in the discussion of the emergent categories in Chapter 4 and Chapter 5.

### **3.7 *Limitations of the Study***

Outside reviewers need criteria to evaluate the procedures and decisions in the interpretation of data (Lincoln and Guba, 1985). The dissertation addressed this issue, in part, through the detailed discussions in Chapter 3 and Chapter 4. One further criterion is presented in this section—the context of the study.

This research sought an understanding of the cultures of design programs that appear to be successful in their efforts to address change in the social and professional conditions of practice. It was limited to U.S. graduate programs teaching design in the specific specialties of visual communication and interaction design. The teaching environments of all design programs—as well as the experience of teaching—are, perhaps, culturally specific. While design faculty and design schools have much in common, the meanings of the design faculty in this study cannot automatically be transferred to faculty in other design fields—or, for that matter, in other degree levels, such as the undergraduate or doctorate. Findings may have the potential to be transferable to other contexts as circumstances warrant, whether in graduate programs or elsewhere, such as other settings where design is taught. I do not mean to suggest that the findings of this study have no broader application. Indeed, there is much to gain from an exploration of academic design culture at the graduate level. I hope the findings will encourage other design programs and faculty to reflect on teaching practices and examine their own academic cultures.

### **3.8 Summary of the Methodology**

This qualitative study explored the processes by which graduate programs anticipate, define and prepare students for change in the design field, with a focus on faculty beliefs and teaching practices related to nontraditional competencies. Informed by a naturalistic perspective and qualitative design, the process model generated from data collected for this research emerged in the view of the participants using constructivist grounded theory (Charmaz, 2006). The basis of grounded theory research is to clarify a social practice (Creswell, 2005), where the “constructivist approach means learning how, when and to what extent the studied experience is embedded in larger and, often, hidden positions, networks, situations and relationships” (Charmaz, 2006, p. 130). Data were coded into categories through systematically sorting common concepts, resulting in a grounded theory that sought to answer to the question: *How do graduate level design programs express their approach to anticipating, defining and preparing students for change in the social and professional conditions of practice through the design of the teaching environment?*

## **Chapter 4: Anticipation & Action in Graduate Design Programs**

### **4.1 Introduction to the Findings**

This chapter presents the results of the analysis as they emerged in the process of producing the grounded theory. The first section begins with an overview of the institutional settings of the four programs and provides a general sense of their cultures and “personalities.” The second section is ordered by the research questions and identifies the primary categories (“external engagement,” “mediating meanings” and “transparency”) and subcategories, along with their many relationships. Throughout the chapter, excerpts from interviews are used to help elaborate and substantiate the categories and

subcategories—indicated with “quotations.” Expressions by participants are treated as quotes in the text and identified by the individual who was speaking or by their respective program. In all cases, the names of participants are pseudonyms, and program names are identified by number—e.g., “Program 1,” “Program 2...” Chapter 4 concludes with a presentation of the core category of interest, “transactive integration,” and the discussion of the integrated theory follows in Chapter 5.

In this study, understanding approaches to anticipating, defining and preparing students for change in the conditions of practice required the investigation of interactions *within* the internal program environment and *between* its broader, external context. The concepts and categories that emerged in the exploration of these interactions revealed the extent to which the teaching environment is intertwined with multidirectional networks of social and spatial processes (Strauss, 1979; Clarke, 2005). Another fundamental process that brought much to bear on this study was understanding access to resources—physical, financial, social, conceptual, human and otherwise.

Anticipating, defining and preparing students for change in the conditions of practice are processes that meant much more to the participants than simply keeping current with their field. Emergent categories began to point to the design of environment as having a surprising affect on the dynamics of relationships, academic cultures and teaching practices. The design of the teaching environment played a crucial role in supporting educational missions, enabling preferred outcomes and devising appropriate responses when the programs were faced with change in the conditions of practice.

## **4.2 Program Profiles**

*Program 1: Professional Practice Model.* Program 1 is in a mid-sized, northeastern urban city, within a private research university of 11,000+ students. Degrees are offered in the

fine arts, humanities and social sciences, public policy, science, computer science and business. The design school wherein Program 1 resides in the College of Fine Arts was established in 1994, and exists alongside other creative fields including art, architecture, drama and music. The school focuses on product design, product development and communication design as well as offering a design minor. The College is in a classic historical nineteenth-century building. The interior, like many buildings on the campuses of older institutions, shows its age in terms of its design for purposes other than the present use. “Space is a big issue,” Mike told me, though all students do have a space that he referred to as “their home.” Most faculty at Program 1 brought up space as an issue, including Robert: “We don’t have enough space! If all the students who are accepted into the program decide to come, we can’t fit everybody...” he explained.

Second year visual communication and strategy majors are housed within the department of Program 1’s degree partner because of a lack of space. “We can only fit 36 students,” Mike explained, “but the type of work shifts in the second year....It can get pretty rowdy in the graduate studio...” he added, “especially this semester when the students are mostly working together in teams.”

Two of three graduate tracts at Program 1 participated in this research. The first specializes in interaction design, the second in visual communication and design strategy. Slightly before the graduate program was founded, Mike told me the school had received special funding from the university administration to “invite roughly a dozen experts in interaction design” for a day-long workshop in order to understand the question, “What is interaction design?” as it was such a new area in the design field.

Each tract is a joint degree between Program 1 and another field of study: the focus in interaction design is offered between design and computer science, while visual communication and strategy is offered in partnership with English. As indicated on the

Website, both tracts claim foundations in visual (graphic) design. The awarded degree is a Master in Design (MDes) rather than the more commonly found Master of Fine Art (MFA).

The reason for choosing an MDes over the MFA was because “it has extra seminar-theory work to balance out the studio work, whereas the MFA is more about the making,” Mike told me. “We’re trying to educate people who think about the problems to be solved, do the research, find ways to create prototypes, products, artifacts and test them.” The program philosophy is solidly “human centered,” Riley explained, “teaching students how to develop systems that help people improve their lives.” The goals are to, “Prepare students for advanced levels of professional employment in the areas of print communication, design planning, systems design, dynamic information design, interactive multimedia, and internet communication; and prepare students for advanced levels of professional employment in the growing field of interaction design” (from a publicly available program PDF).

The curricula of both tracts are moderately structured. Each requires two years of study divided into 4 semesters. The two tracts share several core courses, including research methods, thesis preparation courses, colloquium, design studio and design seminar. The common studio-seminar courses address topics that include communication theory, design concept development and evaluation and research methods. There is a choice of five electives in areas that include business, computer science, psychology and technology (Tables 4.1–4.2).

During their first year, students from both tracts are combined in the same core classes. “There are only positive things that emerge from that,” Mike added. At the end of their first year, students submit written thesis proposals for both a topic and a studio project. Five shared courses address the thesis process to help students in thesis

preparation, writing and design. The fourth semester is devoted solely to producing the project, where students work closely with an advisor to complete the work.

**TABLE 4.1 Program 1 curriculum—visual communication and strategy**

YEAR 1					
<b>Fall Semester</b>	Seminar I	Studio I	Narrative & Argument	Prototyping	Colloquium
<b>Spring Semester</b>	Seminar II	Studio II	Research Methods	Elective	Thesis Prep
YEAR 2					
<b>Fall Semester</b>	Thesis Essay	Thesis Project	Elective	Elective	
<b>Spring Semester</b>	Thesis Essay	Thesis Project	Elective	Elective	

**TABLE 4.2 Program 1 curriculum—interaction design**

YEAR 1					
<b>Fall Semester</b>	Seminar I	Studio I	Basic Interaction	Prototyping	Colloquium
<b>Spring Semester</b>	Seminar II	Studio II	Research Methods	Elective	Thesis Prep
YEAR 2					
<b>Fall Semester</b>	Thesis Essay	Thesis Project	Elective	Elective	
<b>Spring Semester</b>	Thesis Essay	Thesis Project	Elective	Elective	

Fifteen faculty work with approximately thirty graduate students in this program. Faculty teach two courses every semester—a teaching load that is atypical in design schools where the number is typically three (although the two-course structure is often applied to

research faculty in other disciplines). Additionally, several instructors have leadership roles in the design field. “We are committed to design on a national level,” Riley mentioned, “we’re generally curious about what’s going on across the whole field.” Furthermore, she added, “Faculty devote a ton of time to their students.” Mike made the point that the faculty body “always have a few individuals who are very interested in technological change.” They come from various disciplines with appointments both inside and outside of the design school.

Program 1 has supported an endowed, one-year visiting faculty position for the past sixteen years. In explaining this position, Mike told me, “Most schools determine how they want to allocate money committed to an endowed chair,” often deciding to “give such a position to a distinguished faculty member already within the program.” Program 1, however, took a different approach: after thinking about how the faculty wanted to structure their endowed position, Mike explained, “We wanted some variety—so we decided to make it a rotating position...”

Like the faculty, students come from diverse backgrounds. Candidates are accepted with and without design degrees, the purpose of which is to create a purposefully diverse mix of talents. Overall, the faculty seek students with “a good, curious mind, who are flexible and open,” Mike said. Student fellowships and scholarships are offered through a university-wide graduate support program that includes research funding as well as money to attend and present at national and international design conferences.

Extensive industry connections are prominently displayed on the program’s Website. Strong connections with practice are “healthy,” Mike believes, “if students are going to go into professional practice, it’s good for them to be in touch with people who practice.” Relatedly, a notable feature of Program 1 is a studio that included an externally sponsored project involving teamwork, collaboration, and client interaction. Taken in the

spring semester of the first year, the course is for both majors. Students work with the client's design team, all of whom serve as expert critics for the project during the semester. The project is not *pro bono*, in that it is not 'free labor' for the client. Rather, it is exploratory: students conduct practical, applied research and design speculative proposals that relate to the client's business interest area. The client also funds the studio by providing monetary support—e.g., students have budgets for the projects to, e.g., pay participants to take part in the research of their projects. Students work in teams of up to four individuals to craft pitches and formal presentations for the client's design team. Students maintain contact with the team between formal presentations by keeping a mandatory Weblog of their progress that the program sets up for the course.

The first day that I attended this class, Mitch, Judy and Kevin gave a lecture on collaboration; the second day, students gave a formal presentation. Jeff, who teaches the co-requisite research methods course, also attends on important presentation and critique days. Like most classes here, the sponsored studio was held in a large, rectangular room furnished with a giant, 25 foot central conference table, a podium at the front and a wall-length projection screen. Clearly, the focus of the layout is on presentation and discussion. There were enough chairs at the table for all the 25 students to sit comfortably around the perimeter with some to spare. Faculty openly assessed the presentations as a group, using a grading sheet, while sitting up front together. There was also an invited guest who served as an external critic. The majority of discussion centered on the need for students to "make their point" better and find the "rhetorical anchor" of the argument. Faculty also strived to identify gaps and opportunity areas that the students had not.

Jeff, a full-time faculty from Product Design with a background in applied psychology, was charged with teaching the formally structured graduate research methods class. The course was designed to align with the collaborative sponsored studio, and is

customized each semester according to the studio project. Studio faculty “are constantly adjusting their course outline, and I’m constantly adjusting mine,” he tells me. Students learn the methods they will “put in place in the studio.” As Jeff explained:

[Methods] are also intended to be broadly applicable so students can use them in their subsequent year of thesis research, and their careers beyond.... They leave the course knowing how to do research, but they should also be more intelligent critics of research, because designers encounter a lot of research. If you don’t know anything about methods or methodology, it’s very easy to just read things, and take them on face value, as fact.

Students are required to sign up for an external workshop offered by the university’s Institution Review Board (IRB) so they may learn the appropriate procedures for involving human subjects in their research.

Program 1 also offers several eight week courses, or “mini workshops.” The mini workshop that I observed was a new course designed and taught by Sarah in the College of Computer Science on the design of adaptive services. It was held in a LEED-certified building that had just opened that year. Everything was new and the technology was intelligently integrated into the space. For her new class, Sarah pointed out that she had put together a Website that organized the course and helped her communicate with students more efficiently than email.

Upon entering the classroom, I observed how she immediately began rearranging the furniture. She explained that the class that day would be a group discussion, and she wanted a conference table configuration to facilitate a group conversation (interestingly, Spencer did likewise at the beginning of his Seminar taught in the English department—single school desks and chairs moved from rows into a giant circle around the perimeter). When Sarah gave a lecture for the next meeting I observed, the furniture had been moved

back into rows so that attention was directed to the presentation that was presented by way of two ceiling-mounted LCD projectors. The class had a casual atmosphere: students were engaged and most were very talkative. Discussion was centered on the reading assignments that included several different research reports that had been published in issues of recent interaction design journals, including one that Sarah had written jointly with collaborators. She addressed theories that were published in the reports and used to inform the inquiries, but not in an excessively academic way. The discussion was practical and covered basic concepts and applications.

It became clear to me that knowing the literature was a strategy Sarah used to facilitate discussion among students. Indeed, knowledge of the literature was a theme found repeatedly in the data of Program 1. Bill referenced numerous examples in his interaction design seminar with the purpose of addressing issues in the projects that students were designing in studio. Students were in the process of conducting literature reviews at the point in the project when I attended the class, and Bill had previously given them a template to help structure their writing. There was an in-depth discussion of prototyping methods, including high and low fidelity prototypes, object prototypes, and other prototypes specific to interaction design such as narrative prototypes. The need to shift from prototyping “things” to prototyping “contexts” was the focus of the discussion. Bill made several comparisons between what “other designers do” and what an interaction designers needs to do. I came to understand that the interpretation of interaction design at Program 1 was very broad: it was not confined to the design of buttons and interfaces for Websites, or even to digital platforms: it encompassed a wide range of human interaction with artifacts as well as processes, systems and services.

Spencer spent the entire visual communication seminar framing his next writing project for students in his class. Like Sarah, he used his own scholarly writing to help

explain expectations for the new assignment. This seminar also has a significant online component that, as it happened, was designed by Ray while a student in Program 1. His working prototype was achieved with help from another student—a programmer in the School of Computer Science. Designed as a collaborative online environment to allow group annotation and facilitate the critique of written texts, Spencer was using it in the course for the first time as a tool for facilitating group discussion. He often solicited the students' opinions about how it was working for them.

When asked about the differences between the two programs, Mike told me that making distinctions had been an issue in the past, but there were identifiable differences and similarities between them. “Visual communication and design strategy is heavily involved in content creation and form giving,” he explained, “whereas the interaction design program looks more at human-to-human interaction mediated by some technology...from a big picture.” There are common issues and concerns, but strategically, he felt it was still important to maintain a difference between the two identities. He also told me that he often had to explain to students in the different tracts, “In the end it doesn't matter what degree you get—you're getting it from [Program 1]—it almost doesn't matter, they're so similar.”

*Program 2: Academic Research Model.* Program 2 is in a college of design situated in a large (30,000+ students), public, research university located in a medium sized city in the southern mid-Atlantic. Its predominate research culture was a feature promoted often in the college literature, and presented an example of the different disciplines that the program promotes as being important to design:

The college resides within a major research university with on-campus resources that support inquiry in a variety of fields and that are accessible to design majors. University programs and faculty offer elective coursework in

film, rhetoric, literature, anthropology, education, psychology, linguistics, and computer science, to name a few of recent interest to design majors.

The design college includes specialties in industrial design, graphic design, architecture, landscape architecture and studio design art. Established in the late eighties, Program 2 professes roots in visual communication, and, like Program 1, is one of the older visual design Master’s programs in the U.S. It also offers the MDes degree as opposed to the MFA for reasons similar to Program 1—i.e., to distinguish an understanding of design that is different from other programs that are typically centered on a studio art directed practice. Its mission is to prepare students for “informed practice and teaching in the field of graphic design.”

The curriculum at Program 2 is loosely structured. Course of study is for two years and divided into four semesters, each comprised of a required studio and seminar course. At nine credits each, studios make up the bulk of the degree (Table 4.3).

**TABLE 4.3 Program 2 curriculum—graphic design**

YEAR 1			
Fall Semester	Design Seminar I	Design Studio I	
Spring Semester	Design Seminar II	Design Studio II	Teaching Seminar*
YEAR 2			
Fall Semester	Design Seminar III	Design Studio III	Thesis Development
Spring Semester	Thesis Project	Thesis Project	

\*optional elective

The first three semesters include a thematic duo of studio-seminars, wherein first and second year cohorts are combined. As with the other programs in this study, seminars

are designed to supplement studios by introducing the appropriate theories and methods associated with the semester's theme and project assignments. Jennifer told me that Program 2 also used seminars to “encourage and critique” critical writing “as a necessary component of advanced study.”

The fourth semester is devoted to producing the thesis, where graduates work closely with their thesis committee. Thesis committees require three full time faculty who have been approved at the university level to advise Master's students. There are seven core faculty in the overall visual communications department, as well as a small cohort of part-time instructors who teach in the graduate curriculum. Co-requisite studios and seminars are taught primarily by three or four core faculty who also teach at times in the undergraduate curriculum. The nine-credit studio is co-taught typically between two or more faculty.

Program 2 accepted graduate students without design degrees like the other programs in this study, however such students are a “minority population,” Jill told me. Most enrolled students have first degrees (BFA's) in graphic design in addition to some professional experience. Program 2 emphasis is on the development of reading and critical writing skills along with visual investigations that “show criticality about the literature in design and research and writing in other fields” (from the program Website). A notable aspect of Program 2 was its focus on teaching.

As one of only a handful of programs that prepare students for teaching design, Program 2 offers teaching assistantships to many of its Master's students. Teaching assistants are required to work with full time faculty who teach in the undergraduate program, as well as in other areas of the college, such as freshman foundations courses or summer stints aimed at high school students. A teaching seminar, taught by Jill—who has

a degree in education—prepares students for academia, a course specifically designed for this goal:

The course covers topics such as curriculum and course development; classroom pedagogy; critique strategies; program assessment; balancing the teaching-research-service obligations of faculty; and grant writing in support of faculty research.... Students prepare a teaching portfolio in addition to their professional design portfolio, and are advised on job searches in education (Program 2 literature).

The program attracts people “who think they want to go into teaching,” Jennifer told me. “Although [during the acceptance interview], if they tell us they ‘only want to [learn how to] teach,’ then that’s not of interest to us. [We want to understand] what is going to be their research area?”

Another notable feature of Program 2 is a graduate student symposium that is organized every other fall semester by the Master’s students under the advisement of the faculty. The event is national in scope, distributing a “Call for Papers” to U.S. graduate design schools in other Master’s programs throughout the country and abroad. The theme around which the symposium is developed is conceived by the students, and is designed to “align very closely with the [concurrent] seminar,” Jennifer explained. Furthermore, there are moments in the curriculum that include the students having to work on projects that are sponsored by industry. Devising projects that require an external audience, however, is the primary motive of such assignments, in that they “have a consequence in the presentation to the outside world,” according to Jill. “I don’t mean commissioned work for a company,” she explained, “but it means that they’re going to have visibility.”

Program 2 also has a residency requirement for its Master’s students which stipulates their presence in the studio Monday–Friday, from 10AM–6PM, as if they were

professional designers dedicated to a full time job. There are two comfortable, separate studios allocated to Master's students. First and second years inhabit both spaces together, except for the spring semester, when they are divided into separate years. The rationale for the division is so that students working on their thesis can work exclusively on their final projects without the interruption of holding other classes in the space. Whereas Program 1 (and Program 4) mostly held studio courses in a different environment, such as a conference room or other areas of the building, faculty at Program 2 (somewhat like Program 3) conducted class primarily in the students' studio room.

During my visit to Jill's nine credit studio that met three times a week from 1:30–6:00 PM, “examples and exemplars” was a common topic of the discussion. Notably, most examples were outside design, and Jill always situated them in their external contexts. Other examples and exemplars illustrated models for success for the students. Much discussion was devoted to framing projects in the initial stage of the design process. On these occasions, Jill did most of the talking while students diligently took notes. She made a point in telling me that she is interested in how students take notes:

This last group of students was driving me crazy because they take notes continuously in a spiral bound notebook. And I've asked them, “How do you synthesize in the end?” It's impossible to have this linear chronology of everything they've heard and to use it as a chronology—it was undifferentiated across 16 weeks. The ones that were in trouble had no method for synthesizing. So we sat down and talked about how to take their notes apart and reconfigure them in a way that is actually going to help in the designing process.

Jill and Jennifer often exhibited foresight in bringing up any anticipated complications that they felt students might have if they continued on their current path, or

if they decided to pursue a specific idea or approach. One example was in two different discussions of the thesis format and design, where on different occasions, both Jill and Jennifer advised their students to plan “for the worst scenario” and the “most complicated problem” in the layout of the thesis document. Jill, Jennifer and Elizabeth each described how they provided frameworks to help students hone their ideas, such as concept mapping, writing templates, strategies for synthesizing reading assignments and notes (as mentioned previously). In discussions of the thesis, faculty addressed issues that included prototyping for creating convincing arguments and interrogated students on their logic of choices.

Several presentations were conducted in a large, formal auditorium where graduating Master’s students hold the theses examination at the end of the semester. These rehearsals served as “dry runs,” as Jill described them, designed to provide students with a sense of timing in their discussions and a feel for giving formal presentations for a large audience. Like the other programs in this study, Program 2 requires a thesis development course that introduces strategies for “surviving the thesis.” Its focus is on explaining the structure of writing formal papers or research reports for academic journals—i.e., proper citation procedures, the writing of problem statements, assumptions and limitations, how to outline and review the literature and methods, as well as the development of researchable questions. Theses requirements also include a detailed description of the student’s design project, followed by the reflective evaluation of their work.

Individual meetings on “work days” took place in the studio, and were held between faculty and small groups of students. Faculty pre-plan the grouping of the students according to the issues they want to address, for example, project types (similar areas) and problems (similar issues that students need to tackle).

Exposing students to different kinds of ideas in design was a common approach at Program 2, where I witnessed a steady stream of visitors. Notably, visitors are perceived as co-instructors rather than temporary visiting presenters. The list of guest faculty was a reflection of how Program 2 understood relevant design activities and individuals. Notably, each participant described being “very connected to the field.” If the goal was to keep informed, “You have to read and be paying attention to what’s happening out there,” Jill remarked, “and one of the ways to do that is to make sure the program has exposure to people from outside. We bring in speakers who will actually work in the classrooms and do short-term studio stints.” The reason for inviting several external visitors each semester, Jill explained, was to “get us outside of ourselves.”

The purpose of the seminar that I observed was to cover current intellectual ideas in design through reading and writing assignments. The course concerned developing an understanding of new information environments, and was offered every spring to the first year Master’s students. Concurrently, the second year students worked on their theses project.

The seminar met on Friday for three hours every week and had ten students: seven from Program 2, one industrial design major from the design college, and two doctoral students who were enrolled in another field in the communications and rhetoric program. Guest faculty were often invited to lecture on topics pertinent to the theme of the semester, which the faculty updated each time the course was offered. Visitors assign readings before their scheduled visit, and then were present for several days to lead a discussion about the readings.

Jennifer often asked the students to serve in different roles: they edited and proofread each other’s papers, and they were often asked to lead discussions on the reading assignments—including holding discussion with visiting faculty. I came to

understand Jennifer's strategy for motivating conversation as prompting through asking open-ended questions. At one point during, she walked out of the room. I asked her why she had done so, and she told me she left to force the students to lead the conversation with the visitor—or else face embarrassing silence with the guest.

Although most Master's courses were taught in the students' studio spaces, this particular seminar was held in a different room. Individual tables were arranged to form a large square that easily accommodated the ten students. During one class session, for example, Jennifer had arranged the tables to accommodate pairing students for an activity that involved peer-to-peer writing critiques. Several visiting lectures took place through teleconferencing, in which case she had to rearrange furniture to accommodate the technology as well as the telepresence of the visitor.

Accommodation for this particular situation was not without problems: Jennifer had to wheel equipment to the classroom on a cart, and furthermore, she had to set it up to work. At times, the Skype software caused problems with sound and feedback. However, this arrangement enabled the program to invite extra visitors because the cost of travel and accommodations were not a factor in the decision of whom to invite—rather, Program 2 decided to provide the invited guest faculty with a stipend that was more attractive for the contribution.

*Program 3: Human Centered Model.* Located in the midwestern United States in a mid-sized urban area, Program 3 is within a College of Fine Arts at a large (30,000+ students), public Research I university. The newest of the four programs to take part in this study, Program 3 was established in 2007, and about to graduate its very first student cohort. Although its roots are in graphic design practice, Program 3 emphasizes innovation and strategy from “design thinking” and leadership perspectives.

The mission of the program is to prepare “leaders to proactively manage processes for change and innovation” to improve people’s experiences. Its educational philosophy reflects a current trend of degree offerings in the overlap of design, technology, innovation and business (Wong, 2009), understanding that businesses are increasingly asking designers to do more than add aesthetic brilliance to their companies. That such “MFA-MBA” hybrids are being established more frequently may be a result the perceived neglect by traditional design programs towards industry needs other than skills concerned with creative design (Walters, 2011). This perception was reflected in John’s description of the degree. “The MFA—Master of Fine Arts is a bit a misnomer,” he told me, “and is illustrative of the kind of schizophrenia that still exists with terminal graduate design degrees, in that it’s coming from a history of fine arts, but in practice, has nothing to do with fine art making or fine arts research.”

As the first Chair at Program 3, John was hired to develop the inaugural curriculum for the degree. John described the foundational pedagogic philosophy as being focused on “process and action oriented” in that the goal of student assignments concerns “doing things as opposed to making things.” The completion of the degree requires two years of study that is comprised of four semesters. Each semester is further divided thematically into eight weeks sections.

During the first semester, students focus on both the common practices and the ideas concerning innovation found in the design field, while the second half of the year concerns the development of leadership skills. The curriculum is highly structured into logical themes that require students to take two electives each year that are chosen from fields in Business, Education, Social Science, HCI, Economics, Information Science and Public Affairs (Table 4.4). The program was designed to be “action oriented,” according to John. “The goal was to create an integrated and collaborative experience,” he explained.

There are a set of tightly woven, linear and co-requisite classes. “It’s not a menu of courses that can be offered at different times throughout the year,” he added.

**TABLE 4.4 Program 3 curriculum—media design**

YEAR 1: INNOVATION				
<b>Fall Semester a</b>	Collaborative Studio 1	Research Methods	Design Thinking	Human Factors
<b>Fall Semester b</b>	Collaborative Studio 2	Design Analysis		
<b>Spring Semester a</b>	Collaborative Studio 3	Design Synthesis	Elective	
<b>Spring Semester b</b>	Collaborative Studio 4	Design Evaluation	Elective	
YEAR 2: LEADERSHIP				
<b>Fall Semester a</b>	Collaborative Studio 5	Thesis Research	Thesis Studio	Elective
<b>Fall Semester b</b>	Collaborative Studio 6	Thesis Research	Thesis Studio	Elective
<b>Spring Semester a</b>	Collaborative Studio 7	Thesis Research	Thesis Studio	Professional Leadership
<b>Spring Semester b</b>	Collaborative Studio 8	Thesis Research	Thesis Studio	Academic Leadership

I found the set of highly structured, separate courses flowing much more seamlessly than the curricular design first led me to believe. Such an elaborate structure appears to be the means for clearly communicating what the degree is about to those outside the program. The overt manner of articulation may be a result of the faculty’s view that Program 3 is not a typical design program. The curriculum seems to be used as a framework for explaining the program to current and potential students: “We have to acknowledge and meet the students where they are,” explained John. “They’re not all coming in with a clear understanding of the aims and objectives.” He told me the curriculum was used to equip “people with both a shared framework and knowledge base:

At some level the curriculum needs to be front-loaded. It didn't seem appropriate to have a semester that was all the theory, and then the next semester put it into action. It can be frustrating in any learning environment to only deal with theory in the beginning. It needs to come at the beginning, but we don't want it to supplant getting to action.

As with the other programs in this study, seminars were thematically designed to align and support the studio coursework. "Seminar is more oriented to values and philosophy, whereas methods [courses] look at all these issues from a more scholarly design perspective," John told me. The two seminars conducted in the first year semester introduce students to foundational ideas. The initial course is designed to cover "the first inquiry into what we mean by *design*, and what *design thinking* means in relation to that," John explained. The second course frames the program's humanistic idea of "people-centeredness," involving "many conversation about community." The early seminars set the tone for the other courses "as students start to become aware of how the design process can be collaborative."

Four full-time core faculty teach in the graduate curriculum, including the department chair, all of whom have responsibilities in a separate undergraduate program. At the time of this study (spring 2010), there were eleven students in the program: nine in their first year; two, who were about to graduate in the second—the very first cohort to graduate with a degree from the program. All the classes are taught in a large studio space that is shared by both student levels. In the middle of the room were several large moveable tables sandwiched between two long spans of curtain walls equipped with pin-able surfaces on either side. This public area was used as a meeting space as well as serving as a "war room" where students displayed could permanently display their work. The

graduate studio was a new space in the college, one that had been designed especially for the predominately discursive pedagogic philosophy of the program.

The emphasis of the first year studio course was taught by Joe, who has a professional graphic design background. The class focuses on providing students with “sound criteria” for choosing a solution to a community based project where students work collaboratively with actual clients. I noticed that technology was not a predominate feature of the students’ projects. Two teams of five students worked on projects in the studio: nine first year MFAs and one informatics major. A course requirement included a process book that asked students to record the development of one semester-long project. Interestingly, second year Master’s students were required to “facilitate” this first-year studio, and I witnessed several small problems with collaboration between first year and second year students. Students also followed a structured “process model” (Joe jokingly called it somewhat of a “crutch”). Of his role as the instructor, Joe told the students, “I’m here to support your success” in helping you “have conversations” and “use time with people in different ways.” Joe brought up the importance of pitching ideas to people who are not design faculty, a skill that requires “transformation of language,” “removing tribal language,” and other strategies for talking and answering questions that concern the student’s ability to assess the appropriateness of conversation in a specific context.

The importance of a student taking ownership of a problem in a collaborative project environment was a notable concern of Joe’s. For example, I observed how he wove a discussion of form into his critique. “This criticism of visuals is a ‘design 1.0’ critique,” he told the students, indicating that this was an issue more appropriate at an undergraduate level. On several occasions, I observed students asking Joe for more guidance to facilitate moving a project forward. I also overheard them declare, “We need a longer semester...” Joe advised students to “scale the challenge to the time you have,” in several different

conversations. After meeting with each team, he asked, “Do you have a path to move forward?” As these were speculative projects, the students were not required to build the “real” thing,” Joe later explained. Nevertheless, they want to include the actualization of the project as a goal. “They need to learn to scale back,” he complained.

Final project presentations are given only to faculty and project stakeholders collaborating on the students’ projects. Others are not be invited to attend—including other design students. This arrangement is a very different way of holding student reviews for a final project. Because stakeholders may not be familiar with the culture of design critiques, the faculty decided to close these studio presentations that involve external clients. The two graduating Master’s students who had been through this closed critique process described their thesis projects to me, which provided a sense of the ethos of projects in this program. One individual designed a “process” and a set of tools for conflict resolution for collaborators working in a people-centered design process. The second completed thesis concerned how to design with an emphasis on ethics.

Students were assigned one semester-long project in Mae’s research methods course, and they were also required to take an IRB workshop. I was able to observe several presentations of developing projects, each of which was framed by a question: e.g., “How might an after school program for teenagers develop holistic growth and group dynamics?” Mae’s point in much of the discussion was concerned with trying to get students to better articulate the “scope of their engagement,” as well as how they needed to “narrow the focus” of their projects. One student was developing a magazine, similar to a Weblog, in the ethos of creative commons. “This project is really about creative engagement,” Mae told the student, “is this the right form?” During another class, she gave students criteria for listening to other people. I came to realize that a large part of learning in this program was through student reflection on their work. At the same time, students were concerned with

“the deliverables” in this class, as well as the expectations of faculty and the physical form a design should take. The degree of ambiguity is something the students are clearly asked to grapple with. All faculty at Program 3 resisted giving the students specific directions on exactly what kind of artifact or design they should make.

*Program 4: Designer-as-Author Model.* Located in a major urban metropolitan area of the western U.S., Program 4 is part of a small (1,600 students), private institution that offers undergraduate and graduate degrees in several creative disciplines related to design and the fine arts. Like the other programs in this study, Program 4 recognizes its roots in graphic design, but with a particular emphasis on emergent technologies and practices in communications and digital media. In this sense, Program 4 may be understood in the context of the first digital revolution in design that took place in the early 1990s. Numerous innovative graduate design programs were established during this time due to the growing recognition of the opportunities emerging in the area of “new media.”<sup>18</sup> In fields like design, such programs often formed as hybrids between different areas of creative practice (e.g., product design, film and video, animation, media design, interface design), as opposed to the scientific and analytic perspectives found in other interaction design programs that emerged in the overlap between science, engineering, cognitive psychology, product development, human factors and human-computer interaction (HCI).

The moderately structured curriculum of Program 4 has undergone several changes, most recently in 2008. This particular iteration required a major structural change from a quarter system to a two semester academic year. The faculty were planning to evaluate the success of their changes once the spring semester was over, whereupon the first cohort to complete their degree completely under the revised curriculum would

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<sup>18</sup> A second wave of graduate programs is emerging in the overlaps between design, technology, strategic innovation and business (Wong, 2009). These programs began appearing in the 2000s.

graduate. The rationale for the redesign, according to Lynn, the program head, was: (1) to promote diversity and growth in the number of faculty; (2) increase its competitiveness with similar institutions; (3) create coursework in support of a broad range of work and faculty interests; and (4) attract a diverse mix of students from other, non-design disciplines. Program 4’s revised curriculum is moderately structured. The standard degree is a two-year tract divided into 5 terms, beginning with a two-term concept year and culminating in a two-term thesis year. Students take a combination of required and elective courses that are determined by the student’s research area and concentration. During the summer between the two years, students are required to enroll part time in either a specialized course, an off-campus internship or an on-campus research internship. Most of the coursework in the final thesis year is in support of developing the student’s thesis project (Table 4.5).

**TABLE 4.5 Program 4 curriculum—media design**

YEAR 1: Concept Year				
Fall Semester	Design Seminar I	Design Studio I		
Spring Semester	Topic Studio (x 3)		Media History & Theory	Colloquium
YEAR 2: Thesis Year				
Fall Semester	Graduate Seminar	Design Research	Thesis Workshop	Colloquium
Spring Semester	Knowledge Workshop		Thesis Workshop	Colloquium

Program 4 accepts and seeks to recruit graduate students without a first design degree. Indeed, one overarching purpose of the redesigned curriculum was to create the conditions and provide better opportunities for such students to apply and become

accepted. Lynn explained, “We had a really huge mix of students, and we really valued that. We wanted to rewrite the curriculum to attract the right students in that way...” Students without design backgrounds are required to enroll in the three-year tract, which begins with two terms that are designed to develop core skills and basic knowledge in design before the student continues with the standard curriculum. The extra coursework, Lynn explained, helped make the program “more competitive,” while allowing for “a degree that is scaled appropriately and supports the diversity of students that we really want.”

The curriculum is taught by four “core” full-time graduate faculty who do not teach in other areas of the college, plus 1 full-time faculty who also teaches in the undergraduate graphic design program. Eleven part-time instructors are associated with the program at various levels, including: as advisors and instructors already teaching in other departments or disciplines within the institution; as critics and adjunct faculty who are either full-time practicing professionals, independent proprietors or academics at other institutions. Breadth of faculty expertise was a conscious plan for Program 4 in that interdisciplinary work requires people with different disciplinary backgrounds. Lynn described the work of the program not by a design artifact or design specialism—rather, “It’s defined by the way we think about it, or pitch it, or frame it”:

If we map the field, we can talk about interfaces and interaction from a usability standpoint, or products from a function, usability, market standpoint. We can also talk about environments from an architecture or an environmental design standpoint or branding. For Program 4, we might be making products, and we’re definitely making interfaces and interactions, but we think that it’s more interesting to think about devices in people’s lives, or interfaces as communication systems and meaning generators,

because it's coming from a different angle than the rest of the field. We're not doing it to be different—we think it's an interesting proposition.

The curriculum is flexible enough that faculty easily combine their classes with those of their colleagues, including the ability to combine courses that meet on different days. A characteristic of the work at Program 4 was its focus on a speculative future that, more often than not, was aimed at a distant future. Most coursework was devised to point students in the direction of their theses—to where a project could grow or how it could develop. “We try to help students look at a body of work to tease out a thread for a thesis,” Kim explained.

Program 4 is housed alongside two other graduate tracts in other fields in a building that had just opened the previous semester. The space was very open and flexible, with plenty of natural light: there were hardly any walls and most of the furniture was moveable. Interestingly, most instructors did not have individual offices. Instead, faculty “offices” were little more than 4 foot x 5 foot cubbies in which to put belongings and plug in laptops. Collegiality was very evident at Program 4, where I often found faculty hanging out after their classes and talking with each other. Rarely did I see someone breeze in and teach his or her class and then quickly turn around and leave the building. Thus the space itself seemed to encourage the interaction. Kim was teaching the first class I observed in the program, a topical studio that involved a critique of work. One student was a major from another program in the college—environmental design. The students had installed their projects in various places around the building, and we moved from area to area for each discussion. The crux of the conversation concerned a discussion of “how things mean” and the relationship between form and meaning. I noticed that every student was filming his or her presentation. During my visit, I found that most classes migrated around the

space: students set up their work wherever they wanted and wherever it made sense. I also found that most classes rarely started or ended on time.

In the second observed class (another topic studio), again, I found students documenting each other's work and verbal presentations. I later asked Lynn about this practice, and she told me that it was a requirement. "They document the progression of their work so they can reflect on how the ideas develop," she explained. I soon learned that reflection is an important thread in the learning objectives of most coursework. The concern of the eight week thesis workshop I attended was with developing ideas for how the thesis project will be presented, hung and shown at the end of the semester. We met in a conference room around a large table that had electrical outlets and media control panels conveniently built into it. Core faculty Lynn and Mark attended, as well as Mary, the student writing advisor at the institution. Faculty constantly inquired of the thesis students, "What is the argument you're making?" "What's the provocation?" Most work involved fictional environments, where the goal of a thesis is to "transform audience thinking" about something, and then "constructing a space to have an argument." I found that a prominent aspect of the designer's role is "making an argument" at Program 4: one participant told students they were, "Making arguments as opposed to making designs."

Jason's studio course had a work day where he met with individual students. The assignment revolved around utilizing high and low technology to create an innovative learning model—i.e., a prototype of a learning tool. Jason's background is in cognitive science and psychology. One student was designing an interpretive tool that gave directors a better understanding of a writer's script. Jason stressed the importance of putting projects in context—his advice was along the lines of "what-ifying" with regard to creating good fiction. "What's the benefit or change you're striving for?" he asked the students. His approach was to help frame the student's project better by "re-describing" it to them in a

more sophisticated way. The approach was similar to Jill's (Program 2). He also framed projects through stories and the rhetoric of "making an argument." Jason commented often on the use of technology as well: "technology is not always the answer," he told students, and encouraged them to gain a better awareness of what already exists in designed technologies.

Seven Master's students were enrolled in Kelly's media design studio, a course devised for tract three students who do not have design backgrounds. In this course, Kelly framed design several times as "thinking through making" and "thinking through looking." Like Jennifer at Program 2, he made an effort to prompt the students to talk, asking them, "What do you see? How does it work...Guys?" In the process, he often complimented their comments: "good point," "thank you for that." The media design course has a goal of "developing a vocabulary" that will facilitate future discussion. The topic of critique centered on meaning in the students' projects and guidance through defining constraints for future iterations of the work. Arriving at some degree of group consensus in how an individual student should proceed was a notable feature of this class; the decisions of one's peers were as important as the instructor's. The class was scheduled to meet once a week from 3:00–6:00 PM, however, on this day, it ended late at 7:30 PM.

While at Program 4, I had the opportunity to attend a Saturday admissions event held for potential applicants in which all the core faculty attended. Along with some of the faculty, several current students and recent alumni also presented to the audience. Alumni described what they were doing before attending Program 4, while students gave potential applicants their thoughts on the current program and why they had chosen Program 4 over their other choices. They described the overarching goal of the projects at the program as being concerned with "understanding people through things," "thinking through making" and "not problem solving, but finding interesting entry points to develop new products,

systems and services.” One alumnus who had entered the program with a political science degree and a premed background introduced his final thesis project with the lighthearted question, “How do Congo lines form at weddings?” This question was the framework for studying how hand gestures can inform the interaction design of physical interfaces. It was an example of how Program 4 teaches students to observe people as a way to inform speculative designs—and to always ask their own questions in a commission. Lynn concluded the admissions event by describing Program 4’s mission to “craft a new kind of practice” where the objective is to “prepare students to identify a new practice to find their place in the world.” Her closing remarks also emphasized “being a designer in a non-design context” and having the ability to “explain, justify and communicate.” It’s not about “work experience,” she said, “but about being in different situations that force you to communicate what design has to offer.”

Thesis reviews took place from 9:00AM–7:00PM, and the gist of the discussion aimed at answering the question, “What is being communicated here?” Jason comments were focused on how to “make it real and authentic to the audience,” and evaluating the work from the point of view of a person who had to use a proposed design. Several comments and questions addressed “challenging norms” and how a thesis project is meaningful to the future of a student’s individual practice. They reminded the students to talk about their work in conceptual terms, rather than in terms of what the “thing” does. Most thesis proposals were hybrids of graphic design, product design and interaction design, framed as “propositions.” Futures in the thesis projects were more material than the other programs’ projects and more formalized. Over the course of the ten-hour day, students appeared and left. Thesis committee members attended the reviews of their students’ work, but often stayed for other discussions. Furthermore, I observed faculty from the college at large come and go during the discussion throughout the day.

The following day brought included another thesis development course. Faculty asked each student they thought they got out of their thesis review. They also reminded students about the importance of constantly making, and keeping up with their thesis Websites as a place where their work will eventually “live in the world” as a platform for communicating with peers in the same interest area. Mary addressed the “narrative arc” of their writing and the need to update all they write. As a working process, Lynn described, “I write like I design.” She elaborated, “I print it out and hang it all along the wall so I can think about relationships between parts.” The level of detail in the discussions showed clearly how the faculty as a group were all very familiar with the students’ thesis Websites, and how each was a good (or a lacking) example. Notably, the thesis Website is completed in lieu of a bound, written text in the form of a hardcopy.

Anthony taught a topical studio that discussed ideas about form and its appropriateness to the design. “Several of these ideas are hard to communicate in printed form,” he explained. The graphic designers seemed to be hampered by ideas of what they should be making (e.g., a beautiful poster). “You need to ask, ‘What is the most appropriate form to communicate the idea?’” was advise he often gave his students. Another topic was the practice of studying human behavior to get inspiration (as opposed to gathering data). The day that I observed his class, Anthony invited three ethnographic researchers to present in the class. As in the other programs, it was common practice for faculty to invite guests to lecture in their courses, especially when the instructor did not have formal training in a particular expertise. In Anthony and Alan’s research methods course, for example, two computer scientists from a neighboring university were invited to present.

Lynn’s topical studio addressed the issue of “making things work” as opposed to “making things mean,” which was a similar concern of Jason’s. “How much can you fake?” she asked the students. “We aren’t evaluating how it works, but how it’s experienced. How

do you sketch this?” Anthony joined the class midway through, and brought up the difficulty of inventing new languages to talk about work for which there are few precedents. There were many too many prompts in the students’ presentations that included such phrases as “picture this” and “it’s supposed to do this,” Anthony noted.

### **4.3     *Three Primary Categories***

This section presents the results of the analysis in the order of the research question and subquestions. An introduction of the core category “transactive integration” follows, completing the chapter. The exploration of the participants’ educational practices and beliefs associated with nontraditional design competencies using program documents, observation notes and interviews, generated nearly 1,200 emergent concepts. As the analysis progressed, the concepts coalesced around three primary categories: “external engagement,” “mediating meaning” and “transparency.” Within each primary category were several interrelated subcategories—i.e., smaller clusters of observations related to the primary category. This information was used to answer the central research question:

*How do different graduate design programs express their approach to anticipating, defining and meeting the demands of preparing students for change in the professional and social conditions of practice through the design of the teaching environment?*

#### **4.3.1   *External Engagement***

The data indicated that sustained venues for external connection play a crucial role in how programs approached anticipating, defining and preparing students for change in the conditions of practice. From the perspective of participants, “external engagement” was the process of participation, collaboration and interaction with ideas, publics and practices

outside of the design program—and most notably, outside of the design field itself. Their understanding agrees with a constellation of related theories associated with social practices, including “boundary crossing” (Sonnenwald, 1996; Engeström et al., 1999), “boundary spanning” (Hinds and Kiesler, 1995) and “brokering” (Wenger, 1998). Boundary metaphors have been widely applied in different research contexts, such as online learning (Fischer, et al. 2005), distributed cognition (Lipnack et al. 2000), as well as appearing often in various organizational theories (Hinds and Kiesler, 1995).

Ordinarily, the notion of “boundary” relates to territorial demarcation—even conflict—however studies in these aforementioned areas claim that boundaries can also present opportunities for innovation and renewal. According to Wenger et al. (2002), “...radically new insights and developments often arise at the boundaries between communities” (p. 153). Engeström called the learning that occurs in the context of boundary crossing “expansive learning,” and explained that such learning is often triggered when existing practices are questioned, rather than by specific learning tasks (Engeström, 2001, p. 137). The interactions that took place among the participants in processes of external engagement are, according to Engeström, a “virtual disturbance- and innovation-producing machine” (1990, p. 11).

“External engagement” included a dimensional aspect, expressed in the various subcategories associated with this category, the range of which revealed the extent to which “external engagement” was a part of the academic culture of each program. “External engagement” was found throughout the four dimensions of the teaching environment (space, technology, organization and pedagogy), at individual and departmental levels, including the college wherein programs are situated, their wider institutions, and beyond, to other academic, professional and stakeholder communities. “External engagement” was evident in the organizational dimension through advisory relationships formed with

experts from other fields and industries, dual appointments between design and non-design colleges, and in hiring policies for permanent faculty that enabled full time professors without formal design degrees teaching design courses. Several hybrid degrees were built between Program 1's design school and other colleges in the wider institution. There were also many examples of co-teaching relationships initiated with industry professionals beyond the institution—some requiring the support of permanent, rotating faculty positions. Participants often described these out of the ordinary faculty appointments as serving the specific purpose of exposing a program to new ideas and important non-design perspectives.

Other properties of external engagement were demonstrated at the pedagogic level. Design courses were typically developed for mixed disciplines—and most satisfied degree requirements for non-design disciplines as much as they did for majors. At Program 1, hands-on design studio courses were developed exclusively for non-majors, and cover the theories, skills and processes of designing. In varying degrees, all programs recruited and accepted master's students without design backgrounds and devised various means for non-majors to take upper level studios and seminars. Degree tracts at each program were structured to give design majors credit for doing coursework in other fields, and were not always allocated as “electives,” but as prerequisites and requirements of the degree. Additionally, faculty from other disciplines served on the thesis committees of design students, while design faculty are regularly asked to join committees in other majors. Most participants were engaged in ongoing research collaborations with investigators in other disciplines, or with professionals working outside the school. Collaborators specialized in areas that included health care, social work, communication and rhetoric, cognitive psychology, education and geographic information systems. Notably, the range of external engagement activities that participants described in this study could not be established

based on the effort and tenacity of individual faculty. The diversity and depth of these commitments required coordination and cooperation between structures and processes at individual, program, interdepartmental and institutional levels.

“Looking outside design” is a subcategory that emerged in the data of each program and participant. It was found at first in expressions that concerned insulation, inertia, deficit and decline (Figures 4.1–4.4), which seemed initially to render “looking outside design” in the context of professional segmentation (Bucher and Strauss, 1961):

**Amy:** “I find myself looking outside the design discipline at people using design in a more meaningful way” (Program 1).

**John:** “I struggled to disconnect from the official design education community. I stopped wanting to go to conferences because I felt like those were not additive experiences, they were subtractive” (Program 3).

**Kathy:** “Design disciplines can become stagnant...We keep looking inward within our own discipline in order to grow. It’s like making a Xerox of a Xerox of a Xerox: no new, enriching knowledge is likely to come out of something that continues to be so inward looking” (Program 1).

**Jill:** “There wasn’t any discourse in the professional association about design education...” (Program 2).

**Mae:** “I didn’t see people from design...unless you engage with others, it could be just monologue” (Program 3).

**Lynn:** “Design doesn’t have venues to circulate research—it doesn’t have good journals or good publishing” (Program 4).

**Elizabeth:** “Design can be very narrow...” (Program 2).

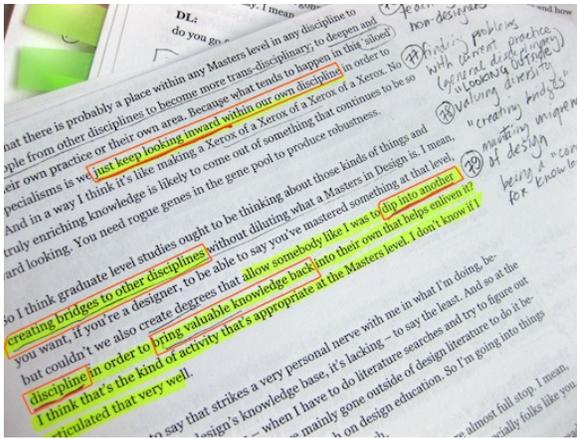


FIGURE 4.1 Concept “dip into another discipline”

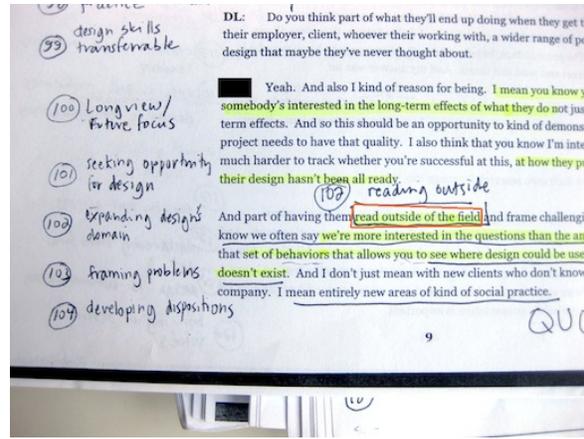


FIGURE 4.2 Concept “finding other areas for design”

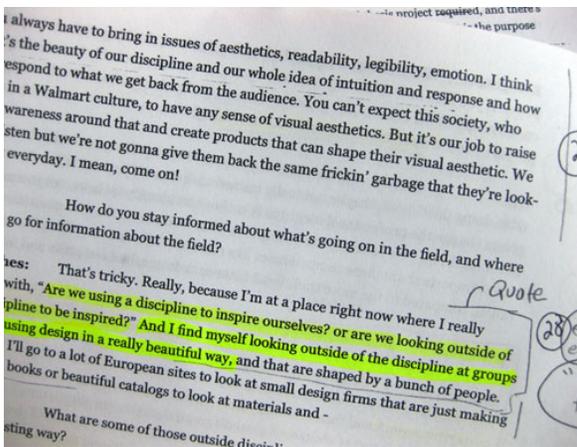


FIGURE 4.3 Concept “looking outside for inspiration”

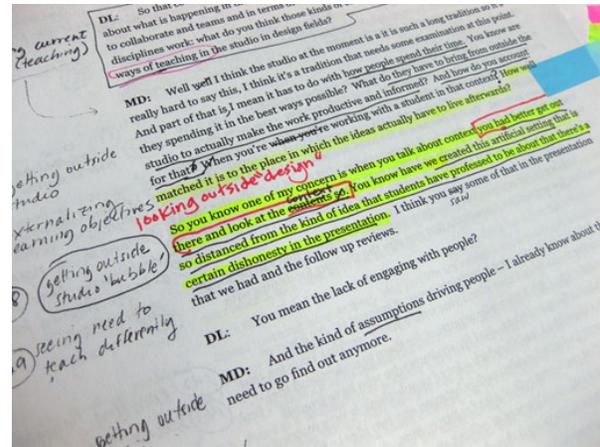


FIGURE 4.4 Concept “needing to teach differently”

It may be disconcerting to find design faculty who are disparaged over the field and thus feel the need to seek beyond it for new ideas—however, the subcategory “looking outside design” was a concept that concerned much more than ideas of discontent. As the coding process advanced, other concepts in “looking outside design” suggested different meanings. The expressions of “lack” gave way to new concepts that related to enrichment, connection and growth:

**Kelly:** “Visitors are constantly coming in to enrich the experience...other disciplinary views enrich the student’s own process...” (Program 4).

**Mike:** “There’s value in visiting faculty being here...they’re enriching the place” (Program 1).

**Elizabeth:** “different kinds of brains, different kinds of interests get pulled into design, I think that’s huge...” (Program 2).

**Lynn:** “We’re not smack in the middle of design discourse, but around the edges, so in that way, other areas pull something into design that makes it more lively and more valuable” (Program 4).

**Mae:** “In working with political science, education, informatics...I’m bonding as a researcher with other faculties” (Program 3).

**Kathy:** “There is probably a place within any discipline to enable people from other disciplines to become more transdisciplinary, to deepen and enrich their own practice or their own area.... Can’t we create programs that allow people to dip into another discipline and bring valuable knowledge back into their own that helps enliven it?” (Program 1).

Properties of “looking outside design” referenced both physical and figurative goals of coursework and teaching practices. For example, students were made to “get outside design” in projects that required “reading outside the field,” “looking up” from computer screens and “leaving the studio” in order to interact with people from the target audience of an assignment.

“Looking outside design” became an expression of Jill’s (Program 2) concern that “when [students] talk about context, they had better get out and look at the context...” and was based on her belief that students must have lives beyond the design studio. Similarly, Bill (Program 1) described one approach to teaching research methods that advised, “Don’t brainstorm in the studio, brainstorm...within the context [of the problem]...” The “looking outside design” concept also informed Program 3’s core teaching philosophy. “The idea,”

John explained, “was that graduate students could be involved in many different forms of design research, but they couldn’t happen without having students get out of the studio and do field work.” Furthermore, student projects exhibited the “looking outside design” ethos. Rather than set boundaries on their explorations, Mark encouraged students at Program 4 to use non-design perspectives in order to “see the world through a different lens,” through assignment goals that did not “privilege or expect a certain mode or outcome.”

Another concept that served to illustrate the breadth of the primary category “external engagement” was the *in-vivo* code “having a foot in different worlds.” Sarah’s (Program 1) teaching interactions and experiences arose from her dual appointment with two different colleges in design and computer science. She described her experience as “putting a foot in two really different worlds.” Mae’s (Program 3) view of design framed the designer as the one who translates multiple contexts in interdisciplinary research as “facilitating two different worlds or multiple worlds” of engagement. Similarly, Lynn described “having one foot in two worlds at the same time” as an ethos of the faculty, who regularly engage in non-design discourse communities. Describing herself as a “bridge person” between the two different areas of professional practice and design education, Kathy (Program 1) framed this hybrid experience as part of her professional identity. “I’ve always felt a bit like Janus,” she said, “my head is facing into both worlds...” Notably, in their activities involving engagement with the ideas and practices from disciplines and communities outside of program and field, “having a foot in different worlds” provided a context for learning for several of the participants:

**Lynn:** “It’s a good exercise to put yourself into other disciplinary frameworks, to think differently about what you do...there are things to be learned...” (Program 4).

**John:** “Because I was new in my role...I really invested a tremendous amount of my time in the university connecting to other professorial communities. It was about tapping into other disciplinary communities talking and thinking about higher education. I thought, ‘I can learn about the skills and knowledge bases of my own profession’” (Program 3).

**Jason:** “I don’t know that the traditional academic models are always the right ones, but there’s a lot we can learn from them” (Program 4).

Organizational research has established that interactions formed in boundary activities are powerful contexts for learning (Brown and Gray, 2004). Carpay and Van Oers (1999) suggested the ability to establish shared understandings through cross-disciplinary “polyphonic, integrative dialogue” is a socially situated form of learning, where the negotiation of meaning is an “ongoing process of coordination” that also encourages transformative growth (ibid, 1999, p. 301). “External engagement,” then, became the difference between truly “being interdisciplinary,” rather than simply “reading interdisciplinary,” as Spencer (Program 1) described it. Notably, the exchange with different disciplines had a transactional<sup>19</sup> effect that participants described as a two-way experience. For example, Amy (Program 1) described her involvement with the medical community as a learning situation:

What we’re learning is the way we frame the question really helps our residents understand the types of research questions they want to ask. It’s a nice back and forth dialogue, knowing that you can help residents

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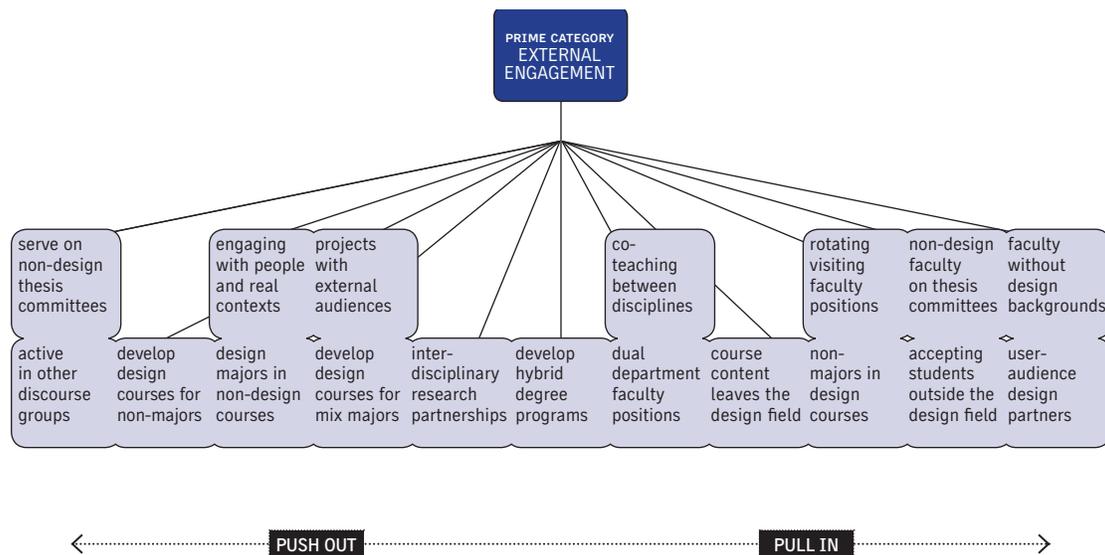
<sup>19</sup> The meaning of *transaction* depends upon the context of use. Typically, transaction is a form of give and take through exchange (e.g. economics, business transactions). In cognition, psychology and other sociocultural situations, the exchange is conceptual and might concern, for example, how people and relationships between people change. Transactional theory considers how meaning is transformed in the process of exchange and how meanings shape each other through activities such as meaning making during reading (Rosenblatt, 1994). Furthermore, a transactional understanding considers the possibility that the subject matter of the exchange can become transformed. In transactional learning, for example, the subject matter under study could become transformed for the instructor as well as the students (Dees et al. 2007).

understand [by asking them], “What if we looked at it this way?” [And they’ll say], “I never thought about that!”

“Diversity” became a reoccurring concept in description of the transactional exchange taking place in this study. The participants’ diverse perspectives and interdisciplinary training demonstrated the value programs held for the faculty’s “hybrid backgrounds” (Program 4)—and “different kinds of hybrids” (Jill, Program 2). Maintaining a range of students from diverse backgrounds was an important criteria in admissions procedures. Sarah (Program 1) told me that her goal was to have a “diverse mix of students in every class.” Kelly (Program 4) valued different disciplinary perspectives in his studio because it allowed “unique and distinct points of view in the process of exchanging ideas.” Having proximity to diverse disciplines was attributable to Program 1’s ability to establish three joint Master’s degrees in partnership with three different colleges. Diversity of individuals created a context that was amenable to diversity of design work. Concerning the goal of growing the number of faculty at Program 4, Lynn explained her motivation of “getting a diverse range,” was to “...keep expanding the group of people that students can call upon” in order to “support the diversity of work.” Elizabeth (Program 2) believed diversity in the program was critical for establishing rigor in design. “Students from different disciplines in design...they already know research...they’re imagining the leap. I see them as being more informed designers,” she explained:

Participants expressed several processes of “looking outside design” in terms that I came to understand as both “multidirectional” and “spatial” (Strauss, 1979). Multidirectional and spatial properties varied along an axis, from *connecting* (“I invested a tremendous amount of time connecting to other professorial communities”); to *elevating* (“we need to teach [students] to surf the waves of these new things, elevate them to the meta level”); to *expanding* and *relocating* (“the idea of design research could definitely be

maximized when we are expanding or relocating our knowledge and skill in a different disciplinary context”); to *broadening* (“Masters without design degrees are the most interesting...with a more broader perspective...”). Multidirectional and spatial properties were organized around a “push/out”—“pull/in” dimension in the axial code “external engagement.” Programs and participants were involved in numerous common practices of “external engagement” along the range of the “push-pull” dimension (Figure 4.5).



**FIGURE 4.5** Process diagram for “external engagement”

There were some exceptions to “external engagement” that were often expressed as tensions or aimed at “top down” policies that mandated cross-disciplinary collaboration. Reaching across disciplines, as Mike explained, was not “always so easy” at Program 1: “It comes down to the individual level—you cannot force someone to collaborate with someone else.” Elizabeth (Program 2) also brought up the importance of nurturing one’s own opportunities for interdisciplinary relationships, explaining, “I think a lot of [extra-

departmental collaboration] depends on personal interactions and the discovery of people to work with—it doesn't help to make a rule, "These two departments will collaborate."

Participants also noted other problems that were related to the commitment of time required in working with external collaborators. Mae's (Program 3) concern arose from building relationships with community stakeholders outside the program. The responsibility for initiating contact with prospective partners was a commitment that she assumed on her own, feeling it was an inappropriate task to leave to the students. "Sometimes it's really frustrating, and it takes a lot of time," she confessed. "It is a real issue of 'how much can you take on?'" John (Program 3) added, "Sometimes things may be unachievable. How do you balance the real relationships that you build with people outside of the academic program, and what is your responsibility to those people since you've shared in helping to create something that they're a part of?" A different concern was brought up by Anthony (Program 4), a faculty who often collaborated with researchers in the social and natural sciences. Explaining the issue of personality and the concern of the time commitments required for cultivating interdisciplinary relationships, he pointed out:

It takes a long time to get a conversation going and develop a productive relationship.... It sounds so great...and it is great—but it's not easy, because different fields have very different criteria for what's novel, and that's not an easy thing to manage. A lot of [my collaborations] involve just finding scientists with the right kind of temperament—it's more down to personality as much as it is to a particular discipline.

External engagement became a prominent category in this research, in that it connected numerous interactions, relationships and practices that took place within each program by all of the participants. These activities exhibited a wide dimensional range, from "pushing" design out into other areas, to "pulling" in ideas from outside design. The

“looking outside design” process was a means for participants to actively engage with other communities—where, at Program 1, Kathy found interdisciplinary faculty “coming together to architect courses that were appropriate for multiple majors.” That these activities were facilitated and encouraged in different ways at the four programs was, in part, a function of the teaching environment. Mike, for instance, described how Program 1 was able to “do something unique because of the alliances” it had. “The point being, we were not insular, we were interacting with a number of units on campus.”

Location in the context of a small, somewhat isolated, private art and design college, without proximity to different disciplines, was revealed as the impetus for Program 4 to form partnerships with experts from other fields outside of design. Interdisciplinary relationships were integral to its success in carrying out its mission. “It was the idea that no single faculty member would know everything that was necessary for any one project,” Lynn explained. “Looking outside design” was an avenue for testing theory and “establishing rigor” in the work of students and program curricula, as well as in the general design field.

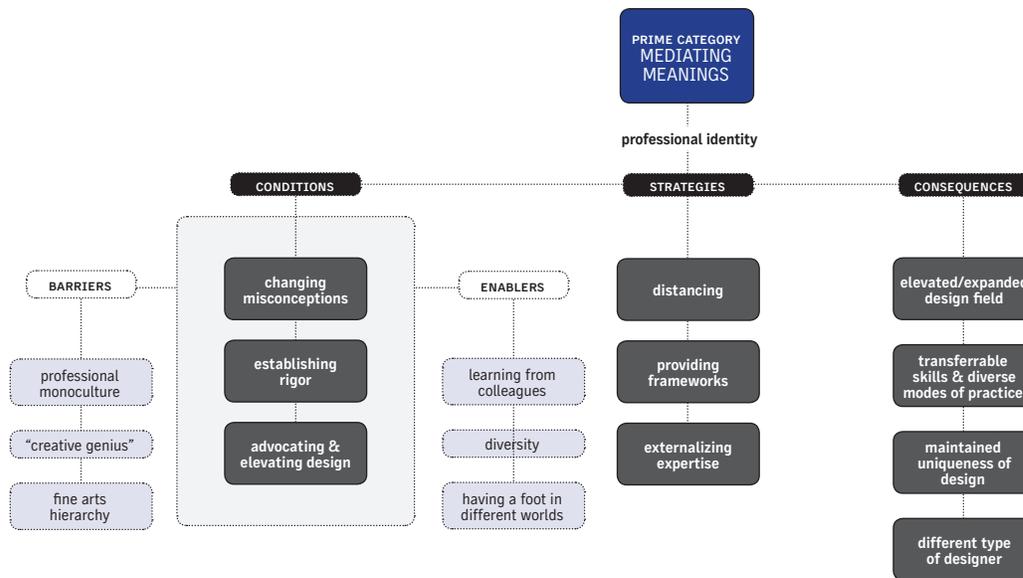
The *in-vivo* code “looking outside design” drew attention to the multidirectional effects of “external engagement” and pointed out the potential for transformation that, as will be seen, became a predominant concept in this study. Transformation was demonstrated in the participants’ use of interdisciplinary perspectives that helped reveal limitations of design expertise and of other fields. External engagement had a transactional effect in cross-disciplinary collaboration, enabling the programs “to prepare a grade of student who was better than any of the faculty,” according to Spencer (Program 1): “We could help create a new discipline, none of which the faculty belonged to, or was trained in.”

### **4.3.2 Mediating Meanings**

The second main category is “mediating meanings,” where mediating is the process of influencing and altering current—i.e., traditional—understandings of design knowledge and practice. In this study, “mediating meanings” may be understood within the activity theory perspective, where the idea of *identity* and the use of *tools* are particularly relevant (Wertsch, 1998; Engeström, 1999). In activity theory, tools (also referred to as *artifacts*), are not always physical. They may be *conceptual* (e.g., forms of knowledge, definitions, meanings) and *social* (e.g., characters, events, ceremonies, policies, practices) as well as *material* (e.g., objects, technologies, instruments). Furthermore, tools are a means of evoking identity as they are often associated with particular people and practices (Cole, 1999). Through the creation of artifacts people reproduce social life, however, when individuals from different groups interact, the meanings of the artifacts they use together can become negotiated. There is the potential that artifacts may change and new ones created in the process of negotiation (Engeström, 1999; Wertsch, 1995).

“Mediating meanings” is a primary category that connected numerous subcategories of professional identity in the understanding of nontraditional competencies and the participants’ teaching practices (Figure 4.6). Patterns of “mediating meanings” were demonstrated in activities inside and outside program and field (external engagement was discussed in the previous section, however concepts associated with “mediating meanings” exhibited a different nature). Three distinct strategies of mediating meanings emerged as participants reflected on their experience with teaching new competencies: “distancing,” “providing frameworks” and “externalizing expertise.” The most common practices included “elevating design,” “expanding the field,” “building value,” “changing habitual mindsets” and “establishing rigor.” These activities were present in the data of all participants to some extent, often representing the core values undergirding program

missions, including: the belief that “design is a vehicle for change” (John, Program 3); that “designers can play a more significant role in every capacity...” (Alan, Program 4), design is “poised to really make an impact on the way society is set up” (Amy, Program 1) and “could do more than what it is” (Mae, Program 3.3).



**FIGURE 4.6** Process diagram for “mediating meanings“

“Elevating the field” and “externalizing expertise” were most prominent in the concepts related to nontraditional competencies and professional identity in this study. This connection is certainly logical, as collaborative work and formal inquiry are activities associated with many fields and, especially in research, designers have yet to establish the goals of these activities in the practices of the discipline. Research suggests that the delineation of boundaries is an important ongoing activity for professional communities, especially as a means of defining identity (Lave and Wenger, 1999). In a general sense, the need for designers to make such distinctions has become pressing, because boundaries are eroding and becoming increasingly blurred (Dykes et al., 2009). “Business people can now

claim themselves as designers,” said Mae (Program 3). “Where’s our position? How can we position ourselves?” For Joe (Program 3), “externalizing expertise” was about sorting “where design’s boundaries are,” and “trying to articulate the distinctiveness of design expertise” for others within and outside the field. Jill (Program 2), Lynn (Program 4) and Spencer (Program 1) found “elevating the field” was a way to “push design into areas where it doesn’t exist,” while Kathy (Program 1) saw it as an academic necessity, in that graduate programs should “create bridges to other disciplines.”

“Distancing” was another important subcategory of “mediating meanings” that connected the processes “elevating the field” and “externalizing expertise” to professional identity and, notably, to ethics. Distancing is understood in this study as a strategy of delineating the meanings of design from other, more traditional models, with the purpose of “elevating” and “expanding” the field. The category “distancing” exhibited multiple properties, from the need to maintain the uniqueness of design, to concerns about design discourse and frustrations over the dominant voices in the field, as well as limited venues for the circulation of design discourse—and as a matter of survival. Seen in the comments that follow, participants often framed “distancing” around these limiting views of practice that arise from inside the design field itself—in educational and professional arenas:

**Lynn:** “That whole ‘creative genius’ model doesn’t work” (Program 4).

**Riley:** “Our pedagogy is very different from an artists’ pedagogy...we want to be very clear: we’re teaching design practices, not artistic practices” (Program 1).

**Elizabeth:** “Some programs are still in a fine arts, expressive mode...they’re a waste of money if you expect to practice, and they’re dangerously off topic” (Program 2).

**Jeff:** “I think we don’t design, at least not in isolation, as the creative genius” (Program 1).

**Mae:** “That limited perspective of the practice is pretty out of date—the world is changing—you can’t just be in the studio all day” (Program 3).

**Spencer:** “For design to survive, and for the world to understand its full significance, it’s not just artifacts—it’s the whole idea of making as part of the intellectual process” (Program 1).

Views about the profession promoted in most schools of design, and in the professional literature, often romanticize the designer as a lone, creative genius who works from a sense of intuition, possessed by a creative ‘inner spirit’ (Bonsiepe, 1994). The attitude, “I’m a professional: I know best,” is one of the paradoxes of design that Shaughnessy (2009) has confronted:

We love to blame our clients for poor work. When projects go sour, it’s always the clients—never us—who are at fault. Sure there are bad clients. But designers treating them badly have usually turned them into bad clients.... For many clients, designers seem to operate on the principle expressed by the architect hero of Ayn Rand’s *The Fountainhead*: “I don’t intend to build in order to have clients. I intend to have clients in order to build.”

In this study, it is notable that each participant saw the necessity of distancing design from the ‘creative genius’ model (Figures 4.7–4.10). The concepts “preparing different designers” and “defining new roles” connected the categories “elevating the field,” “distancing” and “new design competencies,” and were notable themes illustrating program approaches to the design of the teaching environment. Furthermore, “preparing different designers” (e.g., Elizabeth, Sarah, Lynn, Jill, Robert, Jennifer, Spencer, Bill,

Jason) for unforeseen career paths was often found in expressions of professional identity. According to Jason, a multidisciplinary composition of faculty led Program 4 “to not be one particular focus, but to have a more broad thought.” Hiring faculty who “bring something new” into Program 3’s approach to teaching research was a search for “rigor and an investigation process” that suggested “another space for design inquiry to happen,” John said.

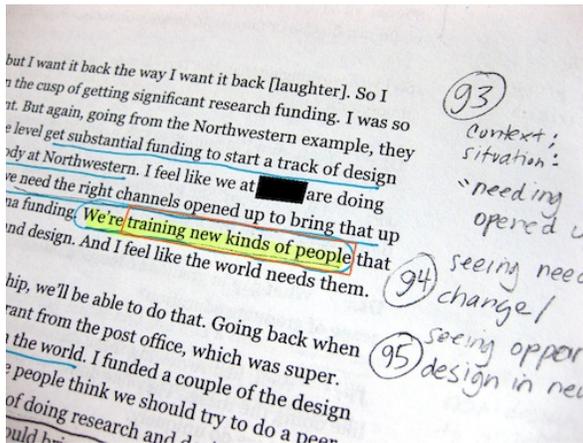


FIGURE 4.7 Category “distancing”

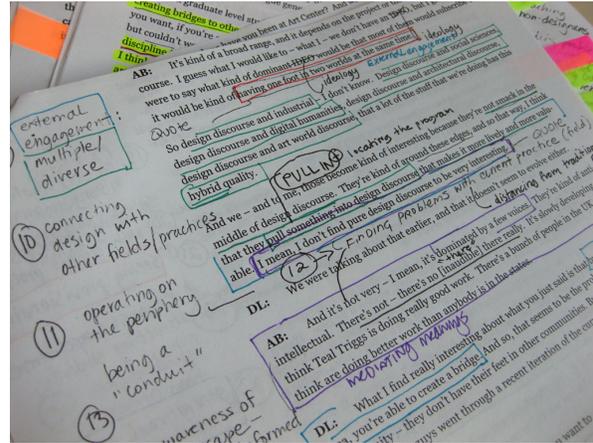


FIGURE 4.8 Category “distancing”

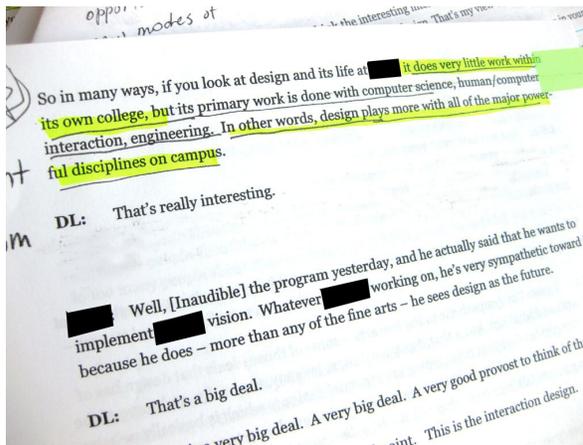


FIGURE 4.9 Category “distancing”

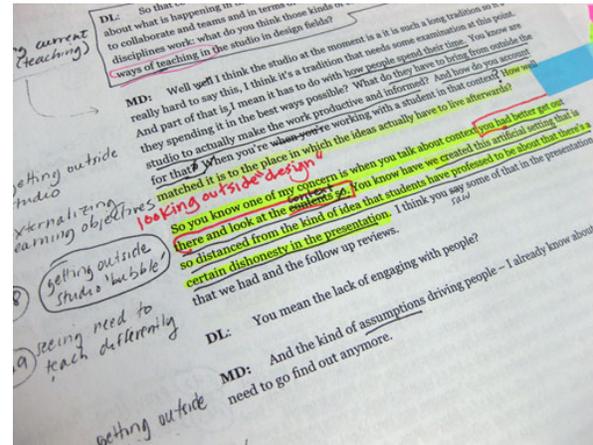


FIGURE 4.10 Category “distancing”

There was a common belief among the participants, similar to John's, that design would benefit tremendously from diversifying the field's range of options for professional practice. Joe explained, "I think there's skepticism and resistance to changing ideas from the traditional design world...there doesn't seem to be much engagement or interest in understanding what are the high level transferable skills that we have as designers—because they're trying to sell a commodified 'secret sauce' for doing something creative..." He called the traditional professional approach to design "strange-making" instead of "sense-making." "Preparing different designers" also revealed views about the purpose of graduate education and the participants' own role as faculty. They had much to say about the need for development of the field. The belief that graduate education is responsible for "pushing," "elevating" and "expanding" the profession was a common view, indicative of Elizabeth's (Program 2), "It's only the graduate programs, and their graduates entering the field, that keep it growing by adding to the body of methods and knowledge...and pushing us up and making us increasingly relevant." Joe (Program 3) believed preparing different designers for nontraditional competencies served several purposes:

There are a few programs like ours that can be placed along the spectrum of research and design thinking, and I think these advance the discipline in a different way [than programs that explore new visual form]. It broadens the potential applications of design skills. So the kind of hybrid permeations add a subtle—or not so subtle—different flavor to the mix. The things I question are those that are just extensions of undergrad" (Joe, Program 3).

Kathy (Program 1) similarly explained, "The proper role of graduate education is to explore the boundaries and help define the boundaries of what the discipline is." Others concurred, such as Lynn (Program 4): "If graduate schools don't do it, it's not going to happen anywhere else." Another example of the mediating effect of "expanding the field,"

is Spencer's explanation of a goal at Program 1 that involved, "...bringing design into general education; to say every student needs design knowledge just like they need a freshman writing course."

A focus on the future may be obvious in these comments, however, perhaps less clear is the concern about the effect that graduate education has on the general profession. Most participants echoed Jill's (Program 2) view that graduate schools must consider "how ideas [in the graduate work] live in the practical world." Kim (Program 4) saw her role as a faculty who also practices professionally as one that involves "showing students how industry works." Participants noted opportunities—and a lack thereof—for the kinds of roles students are prepared for. Both Jennifer (Program 2) and Amy (Program 1) addressed an absence of a "value system that supports research in design," drawing attention to the need for more avenues that allow students to develop these skills: "...the odds of them finding a perfect match are really rare," Jennifer explained. Mae (Program 3) also brought up the struggles of students who had "...few opportunities to apply what they've learned—they're complaining about it, and they're really frustrated about it."

Elizabeth (Program 2) called attention to a favored route of new graduates, one that has served to overpopulate the field with boutique studios, single proprietors and individual freelancers (Poggenpohl, 2010). This scenario is probably not the best choice for young designers who want to practice from a perspective that includes nontraditional competencies. "I suppose this training in research would lead people to be valued by larger design firms that take on pretty complex projects that need teams," Elizabeth told me, "there's an expertise there that appreciates that depth, and is willing and can bill for it—it's not the smaller firms." She also noted the challenge that recent graduates have in finding entry level positions that include knowledge of nontraditional modes of practice and suggested that opportunities may be greater for multidisciplinary students who have prior

training in another field before going into design. Pointing out that form-making is not the *only* path for such careers—and need not be a design program’s educational focus—Elizabeth explained:

The growth of research in design has helped these [mutlidisciplinary] students define new roles for themselves in increasing areas of possible intervention and involvement—and increasing legitimacy to be there. The strategic thinkers, the planners—they are far away from the form makers.

Regarding the profession and “expanding-elevating design” through “mediating meanings,” participants agreed that students have an equal—if not greater—role in purposefully shaping the development of the field. Echoing the views of Jill, Elizabeth, Lynn, Jason, and John, Spencer sees this role as one of advocacy as much as education:

Students know “the world hasn’t changed,” but if they get this new training, they can go and patiently teach the world one person at a time what is this new discipline...and through their example, on the job, they can quietly show people that they do have a new kind of training that other people will be interested in understanding—and even trying to acquire themselves.

The interrelated subcategories “elevating the field” and “pushing design into new areas” were overarching missions of these programs, and for most participants, this goal involved mediating meanings aimed at the preconceptions of colleagues. For Program 1 and Program 3, the need for mediation stemmed, in part, from being located in colleges dominated by the fine arts. “Every week I get into an argument with one of my colleagues about how I’m not an artist,” Kathy (Program 1) told me. A “fine arts hierarchy” can present problems for programs that distance design, and themselves, from fine arts-based conventions, as Kathy (Program 1) discovered. Misunderstandings of design underly processes of mediating design’s meanings concerning the design of the teaching

environment. At Program 3, for example, the misconceptions of their colleagues in fine arts effected the design of the curriculum in the formative phase (the issue of mediating meanings and the teaching environment is discussed further in Section 4.6). Program context also had an interesting effect on the participants' understandings of design research. For example, their location in a campus that included several, as Mike called them, "heavy hitters" in the sciences and humanities, meant that Program 1 had to "clearly articulate what design research was, and set that [definition] in the landscape" of the other disciplinary views. "Changing mindsets" in terms of program context arose in areas of interdisciplinary collaboration and "mediating meanings." Sarah, for example, recalled her initial task as a dual appointment was "to teach each side about the value of what the other side did." She recalled:

They thought design was putting lipstick on the pig or decorating or the thing that came later. So we had to show a way that design really can be a deep structure and can be foundational in research activities.

Some educational experiences build knowledge and skill, while others instill attitudes, beliefs, values and other types of "soft knowledge" (Larson, 1993). According to Seimens (2005), the self-image of "being a student" can create a preconditioned response of passivity. In this regard, numerous concepts related to the subcategories "changing mindsets" and "developing dispositions" were aimed at students. An emphasis on soft skills like communication, empathy and negotiation was evident at all four of the programs in this study. Notable was the *in-vivo* phrase "socializing design" (framed also as "socializing the design student") and "externalizing expertise." Many concepts associated with these categories addressed how students presented their ideas: how they think about presenting to faculty versus how they present to others—ultimately, leading to the presentation of the final thesis to a general external audience. One aspect of expertise was

the ability to overcome barriers to the designer's proposed solutions. "Externalizing expertise" through the social setting of group critiques, for example, is about "performance," as Kelly (Program 4) explained. Seen as a way to change mindsets and develop dispositions, the critique situation helps students see "it's an opportunity for growth—it's not about being defensive." "Socializing design" for Bill (Program 1) was a strategy that taught students to collaborate by "...helping them understand that [collaboration] is not about doing your best work, but if you focus on creating an environment where your teammates can do their best work, you will, in fact, end up doing your best work—because you won't constantly be in conflict." Describing the type of student dispositions that he often had to challenge at Program 1, he added, "...[the students] are super competitive, as in, 'I want my idea to win.' That's not really what we're doing here."

Preparing students to navigate unfamiliar situations that require mediation of the role of the designer was a learning objective of the programs in various ways. Program 4 saw "mediating meanings" as the practice of "making arguments" rather than "making designs." Lynn (Program 4) believed designers "must be able to articulate their expertise to others who don't understand their field," a skill that she called, "cross-cultural communication." "They need to advocate why they should be participants in whatever situations there are in the world for them to contribute to," she explained. Program 1 taught students that "power and access are essential to gaining the knowledge to do what [they] need to do," in their work, Spencer told me. Just as the involvement in interdisciplinary work became an avenue for changing the mindsets of colleagues, Jill (Program 2) saw "reading outside the field" as a way of "developing that set of behaviors that allows [students] to see where design could be useful that it currently doesn't exist...and I mean entirely new areas of social practice."

Jill's approach was also understood through the lens of "distancing" professional identity from the more conventional views of design expressed by first year graduate students. She explained, "All of the traditions students have coming into [graduate education] are about themselves as makers....[we have to] reposition their focus on something other than themselves." The issue of passivity in design students was identified by Lynn (Program 4) as a problem of expecting instructors to tell the students what to do: "...we expect [graduate students] to have a point of view....we expect them to take ownership of their work, and get out of the service mentality," she said. Kelly (Program 4), understood "changing student mindset" as an overarching goal of graduate study: "It should be a discontinuity with their previous education...a rupture in the continuum of their thinking," he explained, "and it should be a little bit destabilizing so they can abandon preconceived notions about what [design] should be."

The practice of reflective reading and writing found in the category "externalizing expertise" was a dominant strategy for "changing mindsets." The oft-heard cliché has been that designers do not read—and that design students are seldom required to read and write in their educations (Newark, 2007). Reflective reading and writing also became an important means of "establishing rigor" in the wider field: "...many designers, probably, could do better by reading more..." Spencer told me (Program 1), "not to make them bigger know-it-all's, but to create greater intelligence behind their making." Similarly, Jill (Program 2) and Lynn (Program 4) claimed "writing has a role in how students make." "If we want students to believe reading and writing are important skills for a designer," Jill added, "they'll only make this connection if they're graded on those skills. As Lynn told me, "Writing, critical writing and reflection are things we assess, and we grade it with their Websites, too, so students are forced to do that exercise as a part of [the design process]."

To a degree, “externalizing expertise” was a notable agenda in the participants’ own academic practices, often taking place in a public venue that involved them mediating design in the subcategories, “exchanging ideas,” “seeking new opportunities for design” and “establishing rigor” in the minds of interdisciplinary colleagues. Their activities involved participants: presenting at conferences; leading and attending workshops; attending the courses of their colleagues; lecturing in classes outside of design fields; taking positions in professional associations; and participating in collaborative research—a practice that included seeking for grants with faculty from other disciplines.

Other activities included regularly contributing to academic and professional publications and serving on the editorial board of various design journals. Attending and presenting at conferences have always been important in the life of an academic—an opportunity to network and publicize one’s work. Participants’ practices in the subcategory “externalizing expertise” often enabled them to provide leadership and define rigorous criteria—notably, in areas of design research—that, consequently, guide the direction of the profession. For example, Bill (Program 1) framed the “mediating meanings” process in this context as an opportunity to “invent, refine and critique what we think design research should be.” In this sense, definitions are “mediating artifacts” (Wertsch, 1995; Cole, 1999; Carpay and Van Oers, 1999) and “boundary objects” (Star and Griesemer, 1989; Engeström, 1999). Spencer (Program 1) demonstrated how words can mediate design meanings in the comment: “When we say, ‘mere making,’ it’s a way of devaluing design, and not seeing the depth of productive intelligence.” The mediating role of words and their definitions became an important characteristic of “externalizing expertise” at Program 4. An interesting subcategory is “renaming and reframing.” Lynn (Program 4) illustrates this view in the consideration that:

Each word you choose has a particular history, and we're drawing on multiple histories. If we call what we do "human-centered research," that conjures a certain way of working that we aren't.... By inventing new language, we're trying to come up with a way of thinking and talking about this thing that we're doing—that we know is different from the other models.

Words matter, Charles (Program 4) agreed. "Simply by calling a graduate program a 'graphic design' program, immediately speaks a particular language." Another example of "renaming and reframing" is found in expressions of the meaning of "research." Design has only recently started to articulate what "research" in the field means, Mike (Program 1) explained. "When I was in graduate school [design] was about making...we didn't use the term 'research'—that's what scientists did," he added. The approach designers take in discussing research activity is especially important now, he continued, "...so that our colleagues respect and understand what's being presented to them." In the same sense that design is crafting language around research, Amy (Program 1) believed the field's use of words like "collaboration," "participatory design," and other phrases describing nontraditional design activities, was not as clear as it needed to be. "It still seems like we're servicing something just to service it," she explained. "We use those words and we're not showing how they're applied and why their application is so affective. Breaking it down further, What is collaboration? Is that a competency? Is it an outcome?"

Interestingly, avoiding the word "research" when discussing it with students was a common strategy among those participants who were teaching methods courses. Helping students understand vocabularies around nontraditional design competencies such as research was a goal of Kelly's (Program 4). He told me that he designed his track-three media design seminar—a requirement for first year students who do not have a degree in design, and come from a variety of disciplinary backgrounds—as a platform for "developing

a lexicon through the exchange of multidisciplinary terminology.... In the process of making, students continually redefine what the words mean.”

“Externalizing expertise” in design when communicating to people who are not familiar with the field revealed the practice of accounting for design in terms that were not excessively mired in detail and specificity. By taking the focus off of specializations in the field, participants framed expertise in generalist terms and in language that was crafted for different communities in specific contexts. According to Rochon (1998), change in language alters how we think: descriptions that cast design in generalist terms may facilitate change in the way we understand design’s role, as well as its values and activities —i.e., its professional identity. Their presentation of design as a “generalist practice” was in alignment with the coursework, learning objectives, missions and values of the four programs. Kathy’s (Program 1) argument for framing design as a general activity was in the context of the subcategory “elevating the field”: “...Many of us are highly specialized, or have gone through the arc of their career, like I did, where you spend years mastering a tiny piece of something, like typography or information design,” she explained. “At what point does teaching that become the equivalent of rearranging the deck chairs on the Titanic?” Her answer was, “I don’t know, but I think we have to be able to speak [about] that without it being heresy! I think one of the challenges of the twenty-first century is going to be asking where is the proper place for that degree of specialization in the face of the problems that have to be solved.”

“Renaming and reframing” found participants mediating design skills in generalist terms that were applicable in, and transferrable to, situations other than design. Their generalist renderings of design included descriptions such as: designers sort, prioritize stakeholder needs (Lee, Bill); design activities (ideation, visualization, implementation) facilitate projects moving forward (Mike, Kathy, Charles); designers work

in a broad range of media (Jason); design is communication. “It’s the idea of mediating communication between social groups” (Mae, Kevin, Kelly). Participants also emphasized generalist learning objectives: comfort with ambiguity (Lynn); adaptability (Lynn, Kathy); resilience (Kathy); learning how to learn (Elizabeth, Lynn); and “knowing how to find out how” (Lynn).

In conclusion, the data suggested that “external engagement” is the ground on which participants mediated design, where the primary category “mediating meanings” stemmed from their activities that concerned repositioning, elevating and expanding the field’s role as well as its visibility. In seeking new opportunities, the ideas and practices of design are connected to other disciplines. In turn, these connections transform it (Klein, 1990). Activity theory defines transformation as “changing an object internally, making evident its essence and altering it” (Engeström, 1999, p. 42). In this study, direct interventions that make design “evident” included “changing preconceptions,” “challenging expectations,” “changing habitual mindsets” and “experimenting with teaching” (Lynn, Anthony). Other mediating strategies were more indirect: “reinterpretation, reframing and renaming,” “making appropriate for design” and “providing frameworks” that “build value” for and expose students to new perspectives.

“Providing frameworks” was a means of understanding how “mediating meanings” contributed to an environment favorable to both the transactional “changing” of mindsets through engaging with ideas outside design, as well as the creation of frameworks for research in design with outside perspectives. Participants made connections between design and the practices of other fields, thus “externalizing expertise” by recasting it in “generalist terms” and “providing frameworks” for students to understand the ideas and processes of the other disciplines. Practices associated with other fields are concurrently transformed and made appropriate for design work, which suggests transactional

processes in “mediating meanings.” Participants distanced design from the “individual genius” and the “service provider,” while they reinforced the relevance and value of traditional design skills like creativity, craft and aesthetics. The processes of “mediating meanings” through “distancing” and “maintaining the uniqueness of design,” then, are about manipulating what design and form-making mean—rather than uncoupling them from the designer’s professional identity.

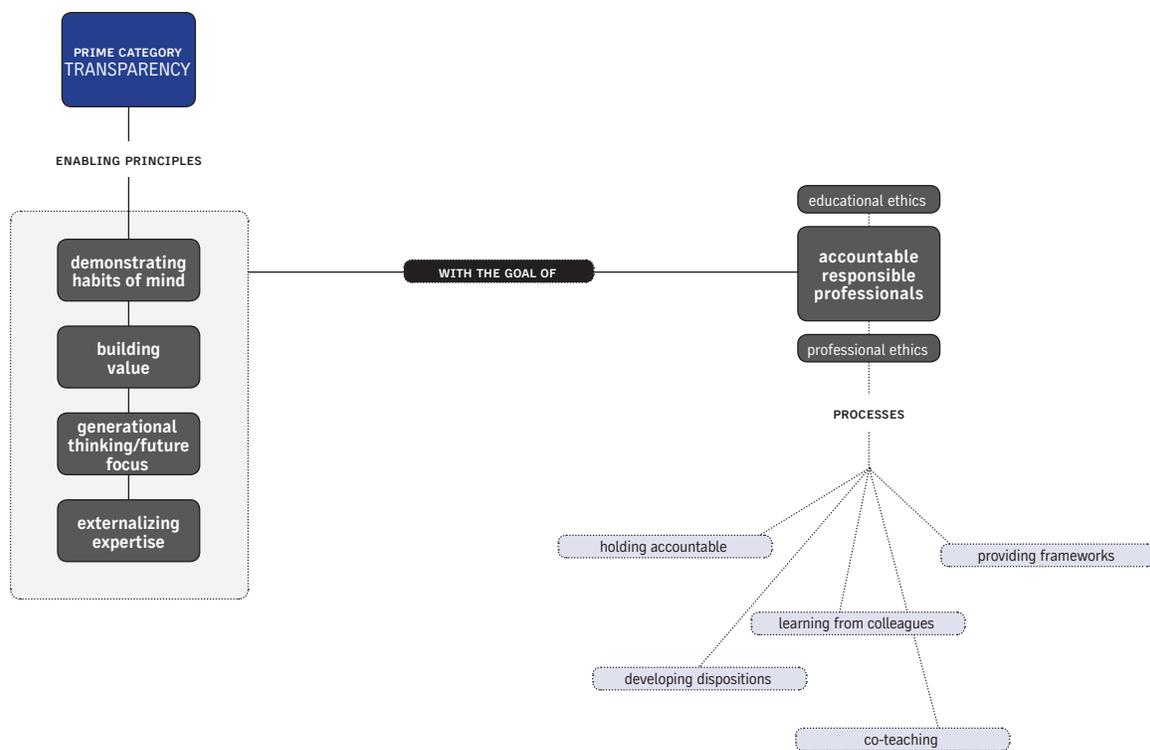
### **4.3.3 Transparency**

In higher education, transparency is an important concern (Ewell, 2005). In this study, the primary category “transparency” was a culture of intentionality and clarity in the practice of teaching: proactively planning, preparing and managing what is learned and how it is learned; demystifying learning objectives, and; building value for what is taught.

Transparency was demonstrated in the culture of each program in several ways. In teaching, it was the difference between, “educating versus professing,” as John (Program 3) put it. Transparency connected the issue of intentional clarity through the subcategories “demonstrating habits of mind,” “building value” and “generational thinking.” Another important concept of “transparency” concerned a program’s culture of ethics that pertained to the character of the relationships between designers and the clients and users of design and between designers and other institutions (Menand, 2010).

An ethical lens was an appropriate one for understanding properties of professional identity, professionalism and academic culture—an obvious connection in that both the academy and the profession work to shape the understandings of all fields. The concepts “accountability” and “responsibility” were important in this regard, and related to one another in that they portrayed a program’s expectations. At the same time, the two concepts were aimed at different groups. Scholars in the sociology of professions contend

that professions are only able to convey what they do as “professional” in as much as they maintain a commitment to public trust through “service, understanding, judgment and learning from experience and community” (Shulman, 2004, p. 530). The survival of a profession depends on the ability to adapt with the needs of society, where professionals renew their field by operating “at or beyond the margins of previously learned performance” (Sullivan, 2005, p. 15). Renewal requires reflecting on assumptions in order to learn, which “often means unlearning” (Schein, 2004, p. 321). Notably, the category “generational thinking,” was demonstrated in expressions addressing ideas of accountability and the ethical responsibilities of design education to the student, as well as the responsibility of the profession to the general society (Figure 4.11).



**FIGURE 4.11** Process diagram for the primary category “transparency”

Three interrelationships between design education and the profession helped frame “transparency” as a primary category in this research and will be used here in the discussion that follows, including: the relationship between (1) the program (and by extension, design education) and the student; (2) the design professional (and by extension, the student as a future professional) and the public—i.e., audiences, clients, stakeholders and society; and (3) the relationship between design programs and design professions.

Responsibility to the learning community had a motivating influence in program teaching practices, and helped to frame “generalist views” of professional identity in terms of the new competencies. Pedagogy and learning objectives in the design field have been notoriously vague and informal (e.g., “learning by doing”). The informality is especially true at the graduate level, as faculty usually assume that students come fully prepared to work at advanced levels from their undergraduate programs or professional backgrounds. The programs in this study accepted students without design degrees, therefore properties of “transparency” had a constant presence in the data.

Transparency became an important issue in each program’s responsibility to their students, demonstrated in the subcategories “establishing rigor,” “building value” and “distancing” (Figure 4.12). Amy (Program 1) viewed “transparency” from a perspective that considered the timeframe of the degree. She noted the issue of the overburdened curriculum problem (refer to Chapter 2). Design education has to “figure out how to develop a curriculum where we are being honest with the amount of information we can deliver,” she explained. “Building value” and “providing frameworks” in terms of “transparency” are crucial when combining students with different backgrounds, according to Joe (Program 3):

There's building value for all the content that we're going to deploy over the semester. When I began teaching, I didn't appreciate how important that was. We accept people without a design background, so we've got people from around the world, and people who haven't worked as a designer, and those who have been designers for a while. All of them are educated in the process of building value.

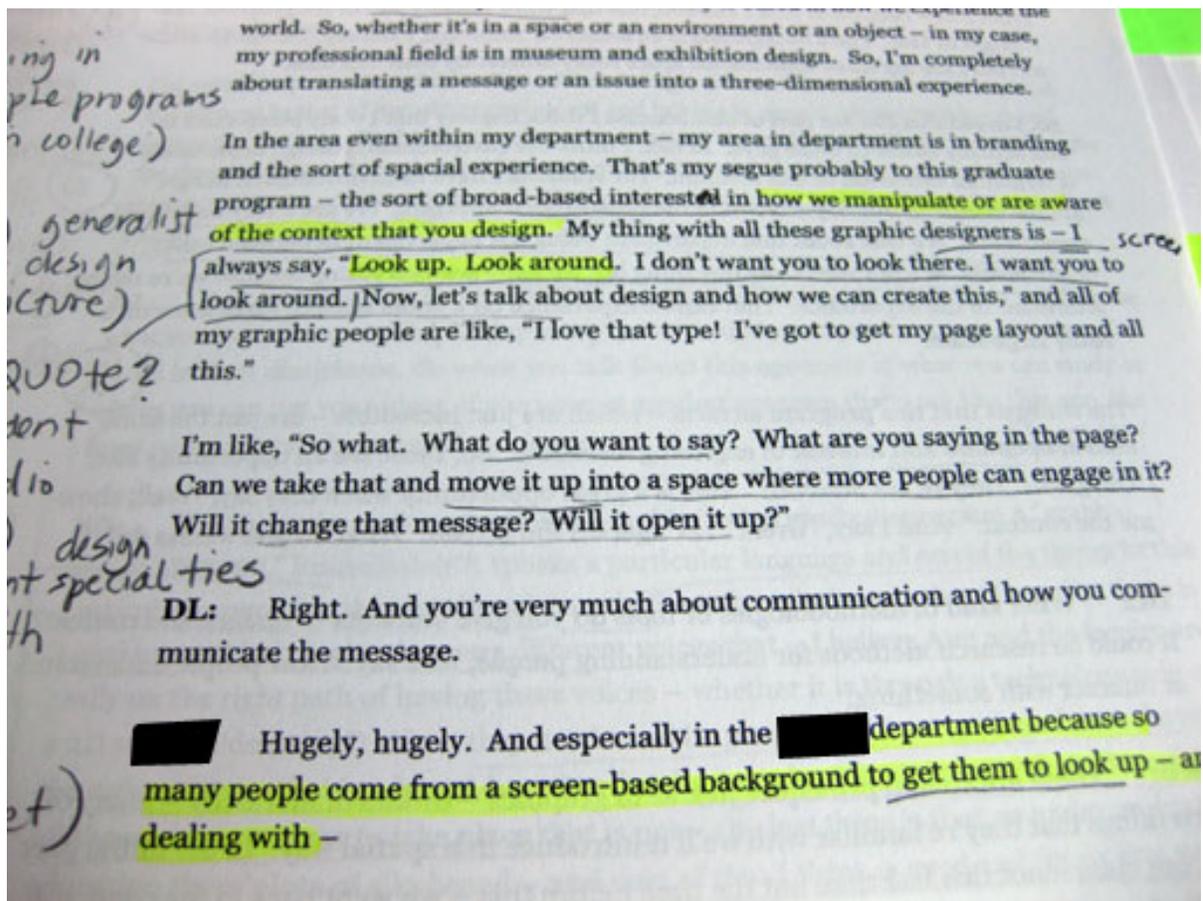


FIGURE 4.12 Subcategories "building value" through "challenging mindsets"

Sarah's main consideration in the juncture of two different schools was, "Would the design students get as much out of it as the HCI students, and what would the different

flavors be for those people?” Her courses were designed to serve not only multiple majors, but multiple types of students, including students attending for a “one-year professional experience,” she told me. “They may never design anything again. You have to teach something about design that’s applicable for those kinds of people, at the very least, to get them excited about it.” Other participants brought up transparency in a studio context with regard to research and graduate work. Often, students are expected to work independently in graduate study, but Jill (Program 2) argued, “Although grad students need autonomy to pursue their interests, there needs to be a level of accountability to common material to facilitate the discussion,” where faculty “put a set of negotiated standards in place for determining what is and isn’t effective.” She contrasted her view of deliberate instruction against other artistic-based approaches that focus on self expression. “The criteria are so self-driven that nobody has a point of entry into anything,” she said.

John (Program 3) echoed this feeling. “Faculty should be more intentional in describing the outcomes of teaching” as a benefit to colleagues in that, “[we’re] coordinating a curriculum of *interdependent* courses.” Opaque learning objectives and concerns about intentionality, assessment and professionalism in pedagogy are notably absent in design education, because “evaluation is based more upon ‘I know it when I see it,’ and ‘I can’t tell you what to do,’” John said. In his view, transparency is an ethical responsibility of design faculty:

Students need to understand the intention and value of what is being taught, that there are discrete learning objectives that can be *named* and there is transparency in the learning contract—and that should be stabilizing for students. Sometimes what faculty do by not naming things—by saying, “Go find out for yourself”—that is very de-centering for students. While we want

them to embrace ambiguity, we can't just throw them out of the spaceship into this big void.

The subcategories “providing frameworks” and “demonstrating habits of mind” were strategies of deliberate instruction by which participants built common understanding and shared knowledge in program coursework. Several participants (Alan, Jeff and Bill) mentioned “confidence” as a motive for “providing frameworks” to engage with nontraditional competencies. Alan, who teaches research methods courses at Program 4, explained, “There are strategies and methods with histories that [designers] can get confidence from, and build upon...rather than just ‘going it alone.’” Frameworks for common understanding are also necessary, Jill (Program 2) maintained: “Just because graduate students have been in the studio before, doesn't mean they're prepared to do independent work—and I would say these frameworks are different from the undergraduate level.”

Although it is beyond the purview of this study, in her comment, Jill touches upon an important underlying frustration that was voiced by several participants—i.e., that undergraduate programs instill students with a very narrow sense of “what [designers] do,” as Jennifer's (Program 2) observed. Amy (Program 1) described the issue as a “monoculture” in undergraduate design education that presented numerous challenges to “establishing rigor” in the field. Both Jason (Program 4) and Amy (Program 1) suggested an altogether new approach was necessary. “I feel very strongly that we need to totally change the way we're teaching communication design,” Amy said. Similarly, “The tone of undergraduate design education has to change from being skills based, or being purely conceptual—that doesn't work either,” said Jason. He concluded, “It brings up issues of learning models and systems...we have to reinvent.” The fact that accreditation procedures played a role in cultivating this monoculture in design was a frequent topic of discussion.

“NASAD, I think, comes out of the old paradigm where design is an offshoot of art,” Kathy (Program 1) explained, and “is a perfect example of how this old paradigm needs to shift. My biggest complaint is that...some of the schools NASAD accredits [are] essentially fine art degrees with a couple of Web design classes thrown in—and then called a ‘design degree.’” John (Program 3) noted further:

While designers have long argued that design is a great liberal education, it’s very skills-focused. Accreditation is determined by “time-on-task” on very discrete technical skill development, which is vocational. Not enough time is focused on developing the designerly way of thinking as a *transferable* skill—which is a life skill in the twenty-first century that is really valuable in the reconfiguration of economies and societies. People today are going to have many more careers than in the past.

A uniform monoculture in undergraduate programs inhibits Master’s students from seeing other purposes for making in design. At the graduate level “you’re making to understand,” Riley explained. “Making in a research mode is very different from aiming for the artifact,” Jennifer (Program 2) said. “It takes a good year for students to have a shift in their thinking...” Similarly, Spencer (Program 1) suggested that undergraduate education neglected to present students with “different categories for doing more,” and left new designers entering the field who are “too traditional and too formal.” He explained:

They haven’t made that “Helen Keller” leap that says, “You’re not a designer because of what your hand-eye says,” but also, the vision to see problems in groups. You’re not just an artist in the studio doing things as you expected, but in order to solve design problems, you need context. You have to understand people’s emotional and nervous systems, and know different styles of leadership. Political science, sociology and

anthropology come into play. So the student enters design, and all these disciplines they may never have been exposed to are required to notice what needs to be noticed, at least on some intuitive level, in order for all that beautifully trained eye to really show it can do anything.

Accountability and responsibility became avenues for participants to connect design expertise, professional identity and curricular objectives to their own activities as professional educators. The category “demonstrating habits of mind” was also important for connecting these concept to nontraditional design competencies. Shulman contended that “demonstrating habits of mind” is a process of revealing the instructor’s thinking and making it accessible through explicating the intermediate steps of understanding—a process that is simply a habit for experts, but is often opaque in teaching (Shulman, 2003).

“Demonstrating habits of mind” in research practice was found in the strategy of using faculty projects and independent studies as a way to teach research and show the methods of its practice. “A lot of the work takes the form of master-apprentice,” Sarah (Program 1) told me. “If they’re getting legs in research, they’re going to join our research projects, and it takes the form of working on stuff together.” Although it was abandoned long ago as being an inappropriate method to prepare designers for the profession (Thompson, 1997), apprenticeship had a strong presence in the data of this study. Another instance was found in the curriculum of Program 4. Rotating “topical studios” were designed as “thesis modeling sessions” that show students the process of pursuing research questions in a design project. Lynn explained:

Each one of us approaches how we pose or investigate questions differently. The opportunity is for the students is to see, with whichever combination of professors they have, that there’s not just one way of doing it. As faculty who have questions within design, we share our questions with [students], and

go on the path with [them], and show [them] how we would do it. Students are walked through how to pursue questions in different ways so they can find what's most comfortable for them or most appropriate to the kind of questions that they want to pose.

In visual communication and interaction design, it is not often to find faculty with formal training in the methods of academic research: the master-apprentice model may be an approach that can be as appropriate for faculty as it appears to be for students. As Bill (Program 1) noted, "I certainly wished I had known about scholarly research before I had this job—it's been painful to learn how to do it." Other participants identified problems in taking less formal apprenticeship approaches:

We recruit undergrad and masters students to work on our research projects as research assistants.... So in the same way you learn to design by doing it, they're learning research methods by doing it. They don't get breath, which is a problem, because they learn the methods that are relevant for the specific project that they're on—but they get a fairly holistic experience, depending on when they join, of how we frame and find the problem, how we pull out a probability, how we design an inquiry that's going to answer the questions and how we synthesize our findings and document the results. I've had a number of students that have gone through this and then have gone on to pursue a PhD, both here and at other schools. So it's become a vehicle for design students, who really get no exposure to academic research, to have a path into the academic world.

Co-teaching was an excellent means of “demonstrating habits of mind” in terms of “transparency,” Jill (Program 2) explained.<sup>20</sup> “If [students] are with one person one semester, and then another person another semester, those two people have two different viewpoints on something. The students can get a sense of being whipped around. If both faculty are in the room at the same time, they can make evident the relationships that are really there, and that things are not as contrasty as they seem.” Co-teaching the graduate studio is a way for Jill and Jennifer to show students at Program 2 that different—even opposing—perspectives can exist through negotiating and explaining differences. Furthermore, as a matter of accountability and responsibility, Jill added, “[Students] need to see [the faculty] as a team. They need to see us as engaged. We don’t all have to be engaged at the same level at the same time, but they need to have a sense that they have a bank of resources...” It is notable that participants specifically mentioned their preference for co-teaching. Anthony (Program 4) described co-teaching as a means of addressing transparency in benefiting students:

I know I have holes in my knowledge, but I also don’t necessarily want to fill them in because I want to be obsessive in some areas. I also want to collaborate and teach, and I think the students get a much better experience between two people who have different perspectives and skills, rather than from one person who’s well read.

Along with responsibilities to students, programs have a responsibility to faculty. Several concepts related to teaching of nontraditional competencies raised important issues around time and faculty development. The need to keep current with the field was a

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<sup>20</sup> It is typical for design faculty to visit and occasionally participate in the studio reviews of their colleagues, however, the understanding of co-teaching occurring in this study is different in that it takes place over the life of the course. Several examples of co-teaching in this study were the equivalent of appointing two faculty to teach the same course. The practice of multiple faculty appointments from a program policy standpoint is rather rare in design programs, especially considering the low student-to-faculty ratio found in design coursework. It is also notable that in this study, several participants co-taught without compensation.

notable concern among participants, seen as a joint responsibility of program and faculty. Jason (Program 4) pointed out that although, “Most faculty in the design world aren’t really prepared [for the changes], but that isn’t necessarily all their fault...programs need to play a bigger role in faculty development and facilitating their engagement with the issues.” Concerning faculty development, participants at Program 1 and Program 4 described the teaching environment as a locus for experimentation, learning and risk-taking. Lynn (Program 4), for example, brought up her role as department chair as having a “tremendous responsibility for creating a space where faculty can take risks, where they can...grow in new directions.” As much as programs promote the work of their graduates and prepare the students to use their work to elevate the field, the programs also have the responsibility of providing a “playground for faculty,” Lynn continued, “a place for them to really thrive as researchers...and encourage them to investigate new things, and give them the space, time, the resources, a safe framework for taking risks...” Sarah (Program 1) concurred: “You need space like that to play,” although she believed Program 1 was “really short” of these kinds of experimental spaces.

Time became an important issue in responsibilities that concern program commitment to teaching nontraditional competencies—and for faculty to practice in a research mode, as is commonly found in other, more established disciplines. “As with all fields,” Jason (Program 4) claimed, “there is certainly a need for freedom from the constraints of the schedule and immediate needs of commercial projects for designers to experiment and look deeply.” Disciplines with longer histories in academic research have already established the necessary institutional support—and the expectation—of research through tenure criteria. Design educators, on the other hand, appear to be valued (and judged) more for the success of their commercial practice. Insofar as a design program is committed to supporting faculty research and preparing graduate students for a research

context, Jason asked, “Do we maintain our commercial practices, and if so...how does that intersect with our research and our responsibilities as up-to-date designers?” He concluded, “I don’t think we have the answers.” John (Program 3) also argued, “To fully engage in one [academic life] versus the other [commercial practice] is all anyone can do. That is a career, and it’s asking somebody to be two different kinds of professionals with two different full-time careers—and that’s not possible.”

Ongoing and open dialogue keeps the discipline and the profession honest. The category “externalizing expertise” brought communication to the forefront in the data of the four programs with regard to ethics and transparency. The missions of the programs had an important role in their commitment to nontraditional competencies. As presented in the early analysis of design programs (refer to Chapter 3), missions have a tendency to be broad and all-encompassing of the universe of professional practice. The past decade has seen the design profession fracture along media, a process that is accelerated by information and communication technology (Dykes, et al., 2009).

Diverse possibilities for situating design in new areas presented both Program 1 and Program 4 with a degree of difficulty in the definition of professional identity in a changing landscape. Both Lynn (Program 4) and Kathy (Program 1) worried, “We can’t just be everything to everyone...” Notably, both of these programs focus in interaction and media design that often must address emerging technology. Lynn explained, “The challenge in this area is defining your expertise.” Following Lynn’s view, Riley (Program 1) found that unclear distinctions between interaction design and communication design were a problem for the students. She believed, “We could do a better job articulating those differences and make sure our students see them, because I think it’s a murky area for them.”

“Articulating expertise” is a dominant subcategory in the approach to defining, practicing and teaching research (Figures 4.13–4.14). As in other fields that conduct formal academic inquiry, design researchers need to be able to make a case for the value of their research findings by externalizing the researcher’s judgement in a way that makes it open for public debate. This understanding was reflected in Mike’s (Program 1) definition of research as “knowledge that is articulated and shared....Once you’ve asked the question, done the work, made the analysis, and reflected on the process and what you’ve learned.” He concluded, “you’ve got to be able to package it in a way so that you can write about it or speak about it, so that you can pass it on to those in the field.”

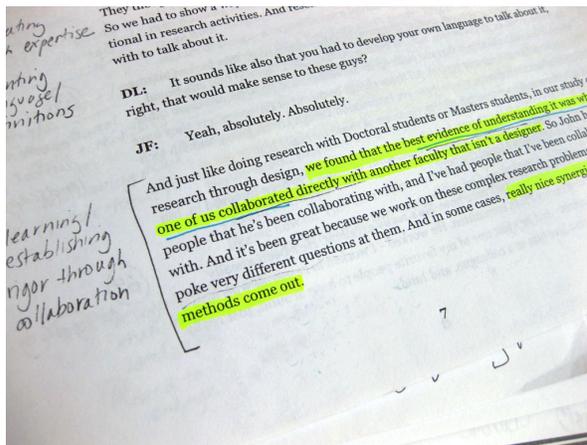


FIGURE 4.13 Subcategory “articulating expertise”

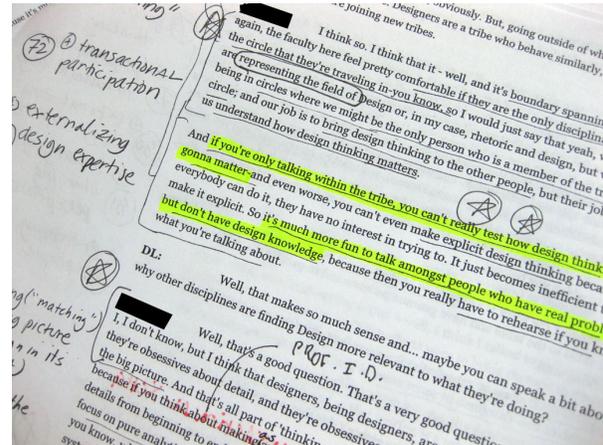


FIGURE 4.14 Subcategory “articulating expertise”

The public articulation of research was a professional responsibility that extended to students at the four programs, as demonstrated in the participant’s use of the Web as a pedagogic tool. At Program 1, Program 2 and Program 4, students were expected to publicly share their in-process work in a public online forum, “To constantly post and to critique each other,” as Kelly (Program 4) explained. Although it is common to find other fields distributing partially developed research, design debates over unformed ideas and

the development of ideas are difficult to find. Critical discourse is more often addressed to completed prototypes or final artifacts—without adumbration of their process of development and iteration.

The subcategories “changing mindsets” and “developing dispositions” addressed numerous learning objections regarding transparency, mostly aimed at preparing students as responsible, professional practitioners. The process was related to asking students to take responsibility for learning, developing their own points of view, thinking critically, being responsible with the expertise and knowledge of other disciplines and determining their own path for how they fit into the profession. Lynn’s (Program 4) understanding of the “changing mindsets” and “developing dispositions” approach was that “every [student] comes with a value system and a set of procedures from their undergraduate that, in some ways, they have to unlearn...” Anthony (Program 4), too, brought up the issue of “student mindset” and the need to manage ambiguity: “I think there’s a certain spirit we expect from students in attacking a project,” he told me. “It’s a messy space between technical teaching and design teaching, and [students] have to have the right attitude in [their] approach. If [they] passively sit back and expect the edges of technical teaching to be very clearly defined...I think [they’re] not going to get it.”

Educational goals that related to the subcategory “developing dispositions” were concerns that also involved building the student’s commitment to their work, understanding that design education is a life long process, “without beginning or end” (Siemens, 2005). For Anthony (Program 4), it was a mindset that, “You’re never really off duty...you’re always looking at how the world is put together.” The student’s professional education in a graduate context is “just the beginning,” Jennifer (Program 2) explained. “I see that over and over...you reach a point at which, ‘this is just the beginning.’” Furthermore, participants believed that “in graduate school, you’re preparing

[students] to give something back...to the discipline,” as Kelly (Program 4) and Jill (Program 2) described.

For Jill, “developing dispositions” was about preparing students to become oriented to thinking about the future of the field, where “at the graduate level, you hope they’re here thinking about the long-term.” Establishing design as a field that holds individual professionals accountable to both publics and collaborators requires students to not be afraid to “engage in people’s lives,” rather than simply “think about [people] in their heads,” Jill (Program 2) and Lynn (Program 4) explained. “That, alone, is a significant shift in [the designers’] role—shifting their point of view to the viewpoint of the people they’re designing for...” said Lynn (Program 4). For Robert (Program 1), the process of “developing dispositions” meant preparing students as professionals who have the agency to make ethically informed decisions about their future work:

Designers are not just solving a specific problem given to them in a company: they are part of a larger activity, serving power to the design activity. As part of something bigger, I want them to experience this as the way they fit into the big picture of things. It relates to their sense of an ethical, moral being in society, and it’s up to them to define how they participate: “Whatever you do, it’s not going to be neutral, so you might as well think. You might as well try to make it a positive impact rather than just not think about it.”

Articulating ideas was an educational priority for the participants, as revealed in the subcategory “holding students accountable.” Holding students accountable to the knowledge of other fields was a matter of providing frameworks for rigor and professional judgement, Charles (Program 4) noted: “You want to move the process along in your area, and then you want students to be challenged in other disciplines, because for [the

designer's] project to survive, it needs to hold up—not just to other graphic designers—but in the world.” When projects cross into the domains of other fields, participants felt strongly about the need to “hold students accountable” to that knowledge. “When you begin to engage with other disciplines,” as Alan (Program 4) explained. “How do you supplement them? What is it that you bring to that conversation?” It is a matter of building more than just value for design: it means concurrently building confidence in the mind of the collaborator the designer is working with. He continued:

What self-evaluation expectations do [other disciplines] have in order to just be confident in using the material that a designer gives them? There are certain expectations that designers need to speak to and satisfy...in order to be able to contribute in a significant way. There's a scholarship behind [their expectations], and...you're being critical of that, and you're advancing them in a way that allows them to depend on the things that the designer is bringing to the table.

Another property of “holding students accountable” in terms of “developing dispositions” concerned how programs prepared students to conduct research on their own (as opposed to the designer working with an interdisciplinary team, where team members from anthropology or social science, for example, would typically take responsibility for the research component of a project). Teaching formal research methods is contentious in design education for legitimate reasons: design schools train designers, not ethnographers. Stolterman (2008) addressed the multifaceted problem of design research, where sometimes, researchers “radically change” scientific methods to fit the design production schedule—or conversely, researchers who use methods directly imported from science without understanding the design process:

This has in some cases led to severe criticism, since it has been seen as resulting in distorted versions of and “sloppy” use of established scientific methods, as is the case between “real” ethnography and the quite popular “quick-and-dirty” ethnography. Another example of a science-based approach that has been adapted by design is the controlled experiment...in the area of interaction usability.... However, with the growing understanding of interaction as an overall experience including all aspects of the design, and the importance of in situ studies, and the notion of emergent qualities as a result of the designed composition, the controlled experiment, if copied from science, does not fit the needs of design practice.

Holding students accountable in collaborative, interdisciplinary research practice, requires teaching “a good sense of boundaries as far as what [designers] can and can’t, and should and shouldn’t, be doing,” Jeff (Program 1) contended. Students demonstrate this responsibility by “externalizing expertise,” explaining how they are (and are not) using analytic methods from other fields—especially when the student alters a method, “knowing that when they depart from established research,” continued Jeff, “they have to know how to talk about it in the right way...” Evoking the notion of “responsibility,” Alan (Program 4) approached teaching research methods and “developing dispositions” from the view that, “the challenge...is getting [students] to understand the history of the approach they’re using.” He added, “As professionals, it’s something students are obliged to be aware of...”

Joe (Program 3) approached “developing dispositions” and “externalizing expertise” as “removing tribal language” particularly when designers work in collaboration with people outside of design. When teaching interpersonal aspects of collaboration he explained how he begins with a transition period he called “crucial conversations” where he “builds value” for unfamiliar ideas. “Building value” is particularly important in

multidisciplinary courses, he explained, because students rarely have a deep understanding of working in collaborative studio situations. Once value is built for new ideas, he told me, the faculty “build off of that scaffold a process that gets students to use a common language and gives them something to point out together, so that it’s externalized.”

An important effect of “transparency” that came from asking students to assume responsibility for their own learning included giving students agency in making decisions about course topics and asking for their comments and personal observations about coursework, as well as other issues such as the facilities in the program. A relationship of mutual respect emerged as a subcategory that I came to understand as “practicing what you teach.” It required giving up control for Jennifer, Lynn, Anthony, Mark, Joe and John. Interestingly, this subcategory also revealed the participants’ ability to be flexible and comfortable with ambiguity—as they asked of the students. Jennifer (Program 2), for example, described how in her graduate seminar, she was only allowed “...to guide the group’s choice [of topic] a little bit,” however, she was clear she “can’t say ‘No’” to their decision.

John (Program 3) addressed “practicing what you teach” as a “shift in perspective,” explaining that “leading is really messy because if you’re going to really lead, you have to be willing to change directions.” Participants often found students straying into areas that went beyond the knowledge and expertise of the faculty. Admitting one is “not an expert” was a recurrent theme. Lynn (Program 4) found the feeling to be a “terrifying” way to teach that was also, paradoxically liberating:

I think it’s really interesting, because it’s a way of operating as a faculty that’s very accepting of the fact that you don’t know everything—I sometimes feel like I have no mastery over what I’m teaching. I’m not at the

same starting point as the students, but in some ways, they know more than me about some things.

In terms of “changing student mindsets” in the contexts of transparency and “faculty knowledge and expertise,” Anthony (Program 4) told me how he told students he does not “have all the knowledge, and I’m just dripping it out to [to them] every class.” He described his experience of interdisciplinary teaching as “always being out of your depth in all areas.... Some days, this department is going to feel like ‘I am Master of nothing.’ Other times, it’s the most exciting synthesis—and that’s the same for faculty as well as students.”

The primary focus of design education has been on preparing students how to *do* design. Small attention is given to teaching them how to *be* a professional designer by upholding a standard of ethics. In this regard, the subcategories “generational thinking” and “generalist terms” had a notable effect on “transparency” and professional identity (Figures 4.15–4.16).

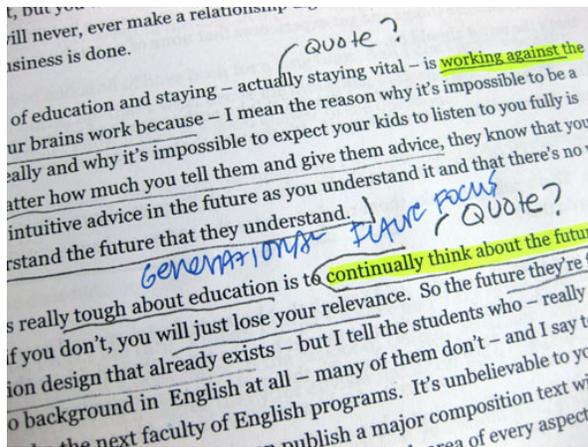


FIGURE 4.15 Subcategory “future thinking”

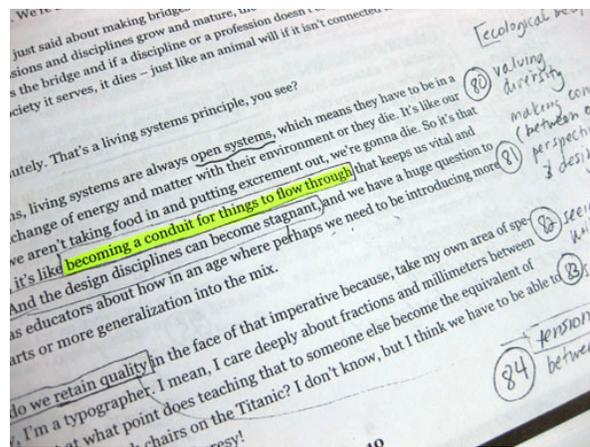


FIGURE 4.16 Subcategory “future thinking”

The view of professionalism that emerged in this study was qualitatively different from the formulaic view typically conveyed in the field—i.e., professional behavior is about meeting deadlines and producing polished comps. These concerns are not unimportant—

rather, “professionalism” had a broader, more generalist understanding for the participants in this study. Nevertheless, it is notable that design does not have a shared code of ethics. The nearest design comes to an ethical code is found in a publication (AIGA, 1998) and a series of brochures (AIGA, 2001) produced by the AIGA for educating clients about working with designers. The writings describe the designer’s responsibility to the AIGA organization, to clients and to other designers, and cover topics dealing with copyright and plagiarism (AIGA, 2001), but they do not address responsibility to the public or the audiences of design—a lack that has been noted as a significant oversight (Nini, 2004). More progress is found in design education, as seen in the recent development of an ethics guideline for faculty that addresses responsibility to students as well as the profession (AIGA educators.com, 2010).

“Future focus” was a learning outcome in the courses of most participants. “Generational thinking” became a notable subcategory of “expanding” and “elevating” the field. Amy (Program 1) argued, “Graduate education could be doing a better job of providing teachers...we need to be figuring out how to educate that next group of design educators.” Jason (Program 4) approached professionalism with a future-focus by way of contributing to the field’s discourse by writing. “We have to educate the design world, both students and practitioners, that they need to engage with the issues and pay attention to them—not just look for the gems to apply to their next project, which often seems to be how design publishing works.”

The perception that the profession, as a whole, does not see graduate education as a venue for the field’s development was also common among the participants in this study. “It’s a vocational service,” Kathy’s (Program 1) said. “The profession most often just wants us to provide them with employees.” While it is certainly important to “embrace what the practice community does,” Bill (Program 1) argued, “in the end, the majority of work in my

area is Web: how do we keep the breadth of what interaction design can be open for all of our students?” Noting the medical field as having an ideal relationship between professionals and academics, Kathy (Program 1) explained, “Doctors look to medical education to further research, to help define where the discipline is going, and a valuable source of knowledge for practitioners...we have yet to attain that kind of relationship.” Elaborating this view, Jill (Program 2) illustrates the interrelated subcategories “elevating the field” and “establishing rigor” regarding “future focus,” with her comment that:

Design is a field in transition from a trade to a profession, and if we’re going to play in professional status, we have to be interested in a research effort. We have to produce people who can actually do criticism. We have to produce a body of literature that’s something other than the latest competition with a few captions. And we have to have a real interest in methodology. How is that going to happen from an undergraduate curriculum when you only have four years to educate somebody for entry to the field? It’s just not reasonable; [students] neither can handle nor have the maturity at that point to make sense of the kinds of things we’re talking about. Not everybody wants to do this, but everybody ought to be concerned that somebody does it.

Demonstrating “generational thinking” and “transferable skills,” John (Program 3) told me that he prepared students to “find different paths” for applying their skills in any context. There was a belief among the participants that the role of graduate programs in elevating design and directing its future, while crucial, remains questionable because of the current state of graduate education. As Jill (Program 2) explained, “My greatest fear is the proliferation of graduate programs in schools that don’t have the resources to support them, and don’t understand the heavy responsibility of what it takes to deliver something

distinctly different from the undergraduate.” Widening the lens of accountability and “generational thinking,” Mark (Program 4) contended, “what American education can offer in a practical, professional sense, is a set of critical, intellectual and conceptual tools that help people figure out what the next thing is going to be. It will become less and less imaginable that we could compete just delivering “training,” and there’s not enough time in an undergraduate experience to get both.”

The related concepts “transferable skills” and “future-thinking” became germane to the reframing of professional identity in “generalist terms.” Mae (Program 3) understood this process as learning “how to think” in graduate study—skills that are “transferable throughout a student’s career, whatever the student wants to be.” Not surprisingly, “uncertainty” and “ambiguity”—and the confidence to manage them—had a strong presence in the data where it “generational thinking” was concerned. Alan (Program 4) understood this relationship as preparing students to be comfortable with ambiguity and viewed the process of discovery as a part of this practice, believing that although “students may not know the outcome,” he explained, “if they commit to a mode with which to know the world, something productive will come of it.” The development of this ability, Alan noted, was “terrifying for [students].”

Similarly, Joe (Program 3) told students that he “doesn’t know exactly the future” that he was preparing them for, but he was “confident” that he “understands the transferable skills and competencies” that he sought to equip them with—jokingly adding that he did not “know exactly what the title is gonna be on the business card.” Lynn (Program 4) demonstrated “generational thinking” with “ambiguity” as being “comfortable in unfamiliar situations.” It is important, she explained, “Because we don’t know what they’ll be making; we don’t know with what tools; we don’t know where; we don’t know how.”

The notion that design skills are transferrable into areas other than design was another dominant thread concerning transparency, ethics and generational thinking. John (Program 3) reflected the view that the purpose of graduate school—and its relationship to the profession—is to “prepare students through inquiry for their lives as people and citizens,” and “the ability to engage systems with complexity and ambiguity is very scalable and is very transferable.” He explained, “I’m less interested in what education can do for the profession, than what it can do for the student.” A program’s focus on what is best for the student improves the field: “It can help prepare more reflective and more mature individuals, and that enhances the field as a whole,” he concluded. Kathy’s (Program 1) stance was also one of generality and transferability regarding the benefit of individual students:

At the end of the day, you want your students to be flexible and resilient...you want them to have ethics, care about the world that they live in, and...be safe and happy and productive—and you want them to embrace change, because God knows if they don’t walk out this door understanding that change is a way of life, and embrace it, we haven’t done our job. Then, almost secondarily, you want them to be good designers.

Categories that emerged in “transparency” suggested a holistic view of teaching, in that categories encompassed a range of practices from individual activities to collaborative relationships with others (especially in situations of external engagement), to relationships with students and colleagues and those that take shape in public arenas beyond the programs. “Transparency” also proved to be an important venue by which participants exposed students to a broad palette of transferable educational experiences that engaged them in authentic behaviors and practices of responsible researchers, ethical design professionals and accountable citizens. Notably, each participant expressed great

concern for the future of the profession, which belies the belief commonly found in the professional literature that academia ignores the needs of the professional sphere. It appears this particular contention arises from design educators thinking in vastly different time horizons than those working in professional practice. Arguably, professionals are more inclined to think in shorter—and even immediate—terms. Design educators, on the other hand, think about the future of the field several decades in advance—as the data suggested of the four programs in this study.

#### **4.4 Subquestion 1: New Competencies as Design Concepts**

*How do programs approach definitions of nontraditional competencies as design concepts?* This subquestion addresses several absences in the professional associations' recommendations for incorporating nontraditional competencies in design education (e.g., AIGA, 2007; Research Society, 2009). These absences include the need for detailed descriptions of the contexts for additional competencies, especially for visual communication design practice, and guidelines for updating curricula and learning experiences that are effective in a studio framework.

While the intent of this question was not to uncover definitions for each competency, it is particularly useful to examine the meaning of the word “research” because the term is used inconsistently in the field (Davis, 2008; Poggenpohl and Sato, 2009), and its meaning shifts depending on the perspective wherein it is used (Bayazit, 2004; Michel, 2009).

The problem with the definition of research in the design field is understandable; it is a young field in terms of disciplinary status and still in the early stages of building a research culture (Durling and Friedman, 2000; Friedman, 2000). In more established disciplines, research is commonly defined as a systematic inquiry of a problem with the

goal of discovering, interpreting or revising knowledge. This definition would probably hold true for the physicist, the statistician, the engineer, the anthropologist and the organizational researcher—despite disagreements over what can be counted as an appropriate outcome of inquiry (Klein, 1990). In design, this collective understanding is not the assumption; faculty may teach research practices that go no further than a trip to the library (or a web search) to collect information about a particular subject. The confusion over research is further reflected in the professional literature. “Design research methods” are often presented as an array of options that span radically different theoretical perspectives without an explanation of the differences in philosophical or epistemological underpinnings (Ladner, 2010). As John (Program 3) exclaimed, “[These writings] are almost meaningless in helping to define ‘research’ in the field.”

The data point towards a holistic understanding of nontraditional competencies—a unified concept and activity, i.e., “interdisciplinary collaborative research.” The unified concept was especially the case for teaching design practices as a mode of inquiry. Three categories related to the approaches participants took in defining nontraditional competencies as design concepts emerged in this study: (1) making connections; (2) making distinctions; and (3) being in the conversation. Design activity and in most cases, design pedagogy, were framed as a research practice in their own right—i.e., a tool and a process for questioning, speculating, testing, understanding, reflecting upon and producing knowledge. The understanding of formal inquiry in this study was, at times, a balancing act for the participants: on the one hand, “design-as-research” is an activity on a par with the methodological approaches of other disciplines; on the other hand, design is very different from other disciplines. Notably, participants held both of these views simultaneously, reflecting longstanding theoretical debates about design’s emerging status as a “real” academic discipline (Archer, 1995; Michel, 2007).

Although *research* comprises the bulk of the discussion that follows, the idea of “interdisciplinarity” is the term bridging the competencies into a unified idea that is framed in a design context. My understanding of this integration is that participants found “doing research” (in their academic activities) and “teaching research” (in their pedagogic practices) as *interdisciplinary collaboration* and *interdisciplinary research*. The point may be subtle, but important in that it became a prominent theme in the data. For example, participants held the view that academic research was an activity that required “multiple minds” in a collaborative context (e.g., Jason, Anthony, Bill, Sarah, Riley, Robert, Alan, Amy and Lynn). Furthermore, interdisciplinarity was a common characteristic of all four faculty groups. It was foundational for Program 4 in their recent redesign of the curriculum, and it was the motive establishing new hiring policies. “It was the idea that no single faculty member would know everything that was necessary for any one project,” Lynn explained.

The subcategories “making connections,” “renaming and reframing” and “making distinctions” were processes of defining and delineating nontraditional competencies to emphasize their legitimacy as design activities. These categories had a high degree of dimensionality in the data, from the alignment of research agendas with parent institutions and other related disciplines to the rejection of scientific paradigms. Participating in research was seen as an opportunity for the field to establish a presence in the larger landscape of inquiry and a way to “help build a larger awareness,” within the field itself (Spencer, Program 1). Kelly (Program 4) reiterated the “network of exchange” idea “...sometimes understanding [research] is more about the idea of a network of individuals that share ideas, and the outcome is just an outgrowth of the ideas that have been exchanged.”

Data from documents showed that program interest areas for research were defined in broad and flexible terms, which allowed programs to align with research priorities in their colleges and institutions. Interest areas were defined according to pressing issues in society, including: design for health and well-being; design, technology and education; the design of public infrastructure; and design for aging in place, among others. The participants in this study who were active researchers approached their work according to the values of their programs as much as from a sense of responsibility to other fields. For example, while faculty and student interests guided the agenda for research, in cases where these crossed into the domains of other fields, the faculty would consult with the appropriate experts as a rule. At Program 4 Lynn told me, “We say to students, ‘You wanna go over there? You wanna verge into art world or architecture or film? We’ll bring in an advisor from that direction to give you a critique from the perspective of that field, so that if you wanna go there, you’re answerable to that critique.’” Furthermore, consultations over domain expertise extended to colleagues in other design areas. Jeff, a faculty member at Program 1 with a social science degree and formal research training, explained:

If faculty [without formal research training] are advising a grad student on thesis or teaching a course on methods, they’ll call somebody like me, or an outside guest from practice, to come in and give a lecture or consult with a student. In the same way that if I have a typographic issue, I don’t try to handle it. I’ll send the student to Riley, Amy or Mike.

In the subcategory “renaming and reframing,” participants described how they “provided frameworks” for common understanding, elevated design research in the minds of collaborators from other fields in order to maintain the uniqueness of design. Design activity was framed as research activity. “Design can be more than application, it can be research,” Mae (Program 3) told me, “the idea of research is something other disciplines

understand.” As an appropriate model for “real research” (Zimmerman, et al., 2007), design has been described as “strategic intent,” equivalent to “truth” (Nelson and Stolterman, 2003). Rather than taking the position of science to seek the “universal and existing,” Nelson and Stolterman argued, “design deals with the specific, intentional and non-existing. [It concerns] “the creation of a desired reality manifested as an ‘ultimate particular’”—a notion that Stolterman (2008) attributed with “the same dignity and importance as truth in science.” “It’s not about seeing designers as ‘doing something different’ from other disciplines,” Bill (Program 1) explained:

It’s about valuing how designers approach similar problems differently....

There’s the application of real behavioral theory on what we know we know about people, but then a new focus on relevance, and a much more nuanced understanding of ‘preferred.’ And it’s different from the anthropologists, who talk about the current state in a very nuanced way. But this is also a speculative future that’s grounded, not just dreamy, but a possible speculative future.

This approach demonstrates the subcategories “establishing rigor” and “making appropriate for design.” Bill described this process as, “Formalizing an approach to research through design that makes it acceptable...in the scientific and engineering research communities.” As a process of inquiry, “Designing in a research mode is very different from aiming toward the artifact,” Jennifer (Program 2) explained. Like Bill and Jennifer, participants were mindful of articulating the distinctions between design inquiry and approaches used in other disciplines. Designers typically use research methods from other fields—a practice that becomes problematic when approached with little understanding of the theories behind the methodology—or, as some have argued, by researchers without enough understanding of design practice (Stolterman, 2008).

Alan (Program 4) suggested that an insufficient understanding of practice, design history and existing modes of inquiry, are a problem for professionals: “I struggle with certain conversations in the [design] discipline that jump wholeheartedly to the structures of other disciplines without any way to be critical of that...it undervalues form making as a tool for creating knowledge,” he told me. Kathy (Program 1) added, “The confusion about bona fide design research is very muddled by the whole tenure structure.” Jill (Program 2) also recognized this confusion as a condition at her own institution: “I don’t think research is consistent amongst the faculty body, and I don’t think it is in the field. I do think it is among the group of doctoral programs internationally that are doing this type of work—but even a Ph.D. isn’t a guarantee that people really understand empirical research.”

Participants felt that valuing the viewpoints of human participants in research was a characteristic that distinguished research in design from scientific, critical or historical modes of inquiry. John’s (Program 3) understanding of research came from:

[Nigel] Cross’ idea of a “third discipline” (Cross, 2001). It’s less important to come up with a definition than understanding there is a way of thinking that comes from a humanistic view the world, which is interested in certain kinds of questions about who we are, about society and culture.... There’s scientific ways of thinking and inquiry interested in certain kinds of answers, and then, if design is a third discipline, it has its own way of seeing and thinking, and its own activities, which are less focused on the question. It’s not about answers, it’s about “goodness of fit.” It’s about solutions—I use the word “appropriate” in the sense that solutions can be extremely creative, but there are practical solutions to the question at hand that need solutions, of which there are multiple solutions. The solution you keep, verses the ones you

point to and say, “That’s a solution, but it’s not going to be *the* solution today, here, now.

The ability to communicate visually in specific contexts became another value that differentiated the design approach from other models. “At the core, [research] has to happen through the act of designing in some way,” (Alan, Program 4). Design’s “capacity to manage multiple forms of thinking while simultaneously engaging others,” was something Mae found noticeably absent in other fields she had worked with, also noting the absence of an ethical dimension that considers “the context of the problem, rather than approaching research from a purely knowledge-based position.” Several participants brought up the inappropriateness of certain research frameworks—especially, the scientific method—while valuing what these models have to offer to design. “There are things to be learned, but the model’s too foreign—that’s the problem with trying to import scientific paradigms into design; it’s ridiculous,” explained Lynn (Program 4).

An interesting subcategory of “establishing rigor” was the definition of research given to students. Several participants mentioned they avoided the word “research” altogether. Rather than call it a “research methods courses,” at Program 3 and Program 4 these courses are called “people knowing.” Jill and Jason, among others, like Alan (Program 4), told me, “I try not to use the word research for a little bit. Instead I talk about ‘How do you discover? What are ways of knowing? What are structures with which to organize and see the world around you, and where do they come from?’ We talk about it on those levels first, and then we talk a little bit about how that fits within the ways that we can know...” Jill’s (Program 2) approach stemmed from the inconsistent definitions among the faculty, where the differences created confusion for the students:

I have a tendency not to use research as a term as much in the Master’s program as I probably could, because I try to reserve the term exclusively for

either the effort to extract latent meaning from writing—not just library retrieval, but actually getting meaning out of it; or, I reserve the term for empirical research done through observation. I qualify “research” with the Master’s students as “research through making,” meaning, there is a dialogue that goes on between your head and your hands as a way of pushing things—by putting speculative objects out there and gaining information about a concept, a principle or a setting. I try to make it very clear that what they’re doing is a prompt, not a researched solution, so when they come up with researchable questions, they’re not going to answer the questions, they’re going to pose the questions—the visual demonstration is a way for them to unpack what that impression is about.

There were clear variations illuminating how academic culture played a role in the approaches that programs took to nontraditional competencies and professional identity. In their teaching of research methods, Program 1 and Program 2 had become “more formalized” and “more regularized,” according to Sarah, Jeff and Elizabeth. Program 4, on the other hand, designed a course “that wasn’t about canonizing what those methods had to be, as much as understanding the world as a way to start the research process,” Alan explained. There was also tension in how research was defined at Program 2 and Program 3. John and Jeff’s concern was if Program 3 was:

Teaching methods that have been codified, or a method for generating methods that is about inventing new methods appropriate for what needs to be discovered, and how it needs to be researched, based on all of the contextual issues so that [students] can be responsive—and not just apply the square peg method because that’s the one we have. There’s some tension in that.

Jennifer (Program 2) was also hesitant to say, “Research is ‘X,’” pointing out, “we are not the only ones doing [research]. Our history is under question; everybody’s wondering what is valuable, what are methods that are not scientific, and if they are not exactly scientific methods, what are they?” Several categories suggested possible explanations of why definitions for new competencies—especially research—were varied among the participants. Program context played an important role. As the older two of the four programs, Program 1 and Program 2 have had research agendas in the curriculum for many years (+15), and have had ample time to develop teaching strategies that serve to regularize the purpose and meanings of research.

At Program 1, Program 2 and Program 3, the meaning of “research” was framed with a view toward other fields on campus that already have established cultures of inquiry. Tellingly, in this regard, Mike (Program 1) identified competition as an issue. “Design tends to loosely call ‘information gathering and retrieval of literature’ research, but we’re on campus with some pretty big heavy hitters in the sciences and humanities that do empirical research. So it’s our job to clearly articulate design research, and set that in the landscape of academic research.” Furthermore, some of the participants at Program 1 and Program 3 taught in a college outside of design. As faculty who have regular interactions with other fields, they demonstrated a more detailed and specific view of research than some of their peers teaching exclusively in design. Finally, the context of Program 4 was specific to fine arts and design. While the data suggested that participants from the program were knowledgeable of inquiry in other non-design disciplines, they did not, however, need to compete with other “hard” disciplines for institutional resources and research funding.

All participants, nevertheless, maintained that design needs diverse ways of teaching and engaging with nontraditional competencies: a view demonstrated in the *in-*

*vivo* phrases “no dogma” and “more than one way.” There was the agreement that all design programs need not—or may not want to—address nontraditional competencies and “speak to design at large,” as Alan (Program 4) said. “We need people working at all ends of the spectrum...” Kathy noted (Program 1). “We pose and investigate questions differently, and there’s not just one way to do it” (Lynn, Program 4). “I don’t know if holistically as a discipline there is any particular knowledge school of thought that we need to engage in, as much as understanding that we should be having conversations with people that produce knowledge through different frameworks,” Alan remarked (Program 4). With a view towards establishing rigor, Jill (Program 1), added, “However, everybody in the field ought to be concerned that somebody does it.”

Several categories in “nontraditional competencies” were also found to be dimensions of the primary category, “mediating meanings,” where participants engaged in “distancing” and “establishing rigor” through “changing misconceptions and challenging preconceptions.” The mediation was more complex than simply changing other peoples’ minds, however. “Mediated meaning” required transactional dialogue and a common language with which to talk about design with other disciplines. As a way of participating in the conversations of other disciplines, Alan (Program 4) stressed the importance of “fundamentally understanding that there are structures to knowledge, and that depending on what discipline someone comes from, they see the world in a different way—and there are real values and foundations there that you can understand as a way to not get cut off in the formats of other disciplines.”

Another example of the mediating process of defining research came from Bill and Sarah (Program 1), who developed together a “research through design” framework that “allows designers to do what they do normally, which is design,” but concurrently:

Shows the HCI community that design research contributions were just as important. We say “research through design” is making an artifact to codify understanding about a current situation and then it suggests a future state. That’s been a pretty successful way to position ourselves here because when I came, people didn’t know what design was.

Indicative of this comment, mediation with different perspectives enabled participants to engage in important reflective activities that required “communicated thinking” (Carpay and Van Oers, 1999). Mediating meanings also became an avenue for establishing rigor in design through testing ideas in the process of carrying out collaborative research projects. Transactional exchanges were demonstrated particularly through the subcategory “learning from colleagues.” Sarah (Program 1), for example, said, “We found that the best evidence of understanding our model was when we collaborated directly with another faculty who wasn’t a designer.”

Questioning norms in practice also became an important aspect of this process: design researchers “poke different questions,” Sarah (Program 1) told me, while design is a “different mode of speaking to the same questions...” according to Alan (Program 4). Notably, participants found this type of social, interdisciplinary learning to be a part of their identities as educators. Kelly, for example, explained, “In terms of other disciplines, there’s a lot to be found...” He explained:

When students see the way other [disciplines] approach their work, and how they might share a similar language or approach to the way they conduct research, that can be liberating. It’s less about form, it’s less about style—it’s about an approach.

Mae (Program 3) was able to connect her practice as an academic researcher with her teaching practice through the “scholarship of teaching” framework (Boyer, 1991),

meaning that teaching itself is a legitimate object of study.<sup>21</sup> The “mechanisms of participation in design” are the emphasis of her coursework in methods that concurrently expand the scope of her research interests into other areas.

The ability to render design research in terms that other fields can understand comes first through developing a clear understanding of the models and methods employed in other disciplines—and identifying how they differ from the approaches commonly taken in design. Participants regularly engaged with experts from other fields, a practice that requires them to establish “shared intentions” with their interdisciplinary colleagues (Carpay and Van Oers, 1999). Both Mike and Spencer described how at Program 1 “English and Design teach in similar ways.” Spencer saw himself teaching English as if it were a design subject. Spencer’s “rhetorical approach in the professional writing program is very much the way we teach communication design,” Mike confirmed.

At the four programs, overlapping interests provided the foundation for participants to mutually discover common grounds with their collaborators and learn from each other. The exchanges taking place among the participants within their interconnected, multidisciplinary relationships required sense making and multidirectional learning (the idea of multidirectional networks of relationships will be important in the discussion of transaction and plays an integral role in the emergent theory in Chapter 5).

The categories “academic culture” and “professional identity” played a crucial role in how programs understood nontraditional competencies as design concepts. A cross-

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<sup>21</sup> Boyer wanted to replace the traditional academic hierarchy with a constellation of interests that included four legitimate types of academic life: the scholarships of (1) discovery, (2) integration, (3) application, and (4) teaching. The venerable term “scholarship” united the academy under the idea of “learning,” instead of research and teaching. Boyer also sought to end the debates about the relative value of research and teaching: “The most important obligation now confronting the nation’s colleges and universities, is to break out of the tired old teaching versus research debate and define, in more creative ways, what it means to be a scholar. It’s time (for the profession) to recognize the full range of faculty talent and the great diversity of functions higher education must perform” (Boyer, 1991, p. xii).

disciplinary research agenda was a catalyst for the participants to establish diverse connections within and beyond the immediate program, and provided a means for programs to better accommodate students without backgrounds in design.

Programs also understood nontraditional competencies in different ways, specifically in terms of how they defined research. While participants saw the need to establish rigor in ideas and practices of design research, they did not always agree on the ways in which models from other disciplines contribute to the goal of establishing designing as formal inquiry. Although there were commonalities among the programs—as seen in categories like “maintaining uniqueness” and “more than one way,” there was also a great deal of variability in the conditions, dimensions and consequences, suggesting unpredictability in understanding, with meanings varying widely among the participants. The views of the participants taken together, however, are according to current literature (Schön, 1987; Cross, 2001; Krippendorff, 2006; Lawson and Dorst, 2009). Rather than provide one clear understanding or theory, different, and even contradictory, definitions of research can be found. There is, nevertheless, agreement that design is a unique activity, requiring its own intellectual approach, different from scientific or other models, and solidly based in design practice and situated contexts.

#### **4.5 Subquestion 2: Elements of Professional Identity**

The second research subquestion asked: *What elements characterize the professional identity of designers who practice from perspectives that include nontraditional competencies?* This question arose from the need to understand how design faculty think about their own discipline. The goal was to understand the degree to which there is a sense of coherence among the participants that could serve to provide a conceptual structure for a professional identity in design in the context of nontraditional competencies.

As discussed in Chapter 2, Kuhn's disciplinary matrix (DM) was used as a framework to understand "professional identity" as a set of elements characterizing community commitments to ways of thinking, speaking and doing (Kuhn, 1970, p. 181). Kuhn noted that his list of elements was not exhaustive, but representative of the kinds of things an occupational community share. The notion of "paradigm," which was recast as the "disciplinary matrix," was important in forming the understanding that paradigms have social, cultural and symbolic dimensions.

In this study, an occupational group of designers is a community that has undergone similar education and training, and therefore shares a similar view about design and its place and purpose. This common worldview guides the designer's work, and is expressed in ways that collectively shape perception. Kuhn argued that this perception is transmitted through example, persuasion, impression and imitation rather than explicit rules or criteria. Thus, DM elements represent tacit knowledge acquired through social learning (ibid, p. 191). The elements of the disciplinary matrix are discussed in Chapter 2, and summarized briefly here.

*Generalizations* in this study, concern "common language, ways of talking, terminologies, propositions, and definitions...of the symbols they deploy" (Kuhn, 1970, p. 181). As a semiotic device, generalizations help anchor communications among a culture-sharing group. In this study, expressions were identified as being symbolic generalizations if they were specific to design practice or if the phrases could be used to define design, the designer's role and the activities of design.

*Shared commitments* are beliefs about "ontological or heuristic models that supply preferred or permissible analogies and metaphors" that also serve to guide the group's activities. In this study, shared commitments address the skills and knowledge necessary to be proficient in nontraditional design competencies and the understandings

about what designers do in situations involving these new conditions of practice. Phrases were identified as “shared commitments” if they were expressed as analogies or metaphors (i.e., using the word “like” or “as”) for design theories, models or ‘rules-of-thumb.’

*Values* provide a holistic sense of the profession, and may be shared with other design areas like industrial design, service design, experience design and architecture. Values express the obligations, ideals or desired ends of a professional group. They also help the group characterize important issues, weigh consequences, as well as choose among competing traditions of performance. In this study, values were identified in comments that concerned design philosophies as well as comments that expressed the participants’ beliefs about why design is important, the good that design serves in the world or the importance of engaging in design practice.

*Exemplars* are the typical problem-solutions introduced to the group through their education and professional training. Kuhn described exemplars communicating a sense of the community’s activities, an idea developed from the view that people gain tacit understanding in experiential learning through exemplars. In this study, exemplars helped separate the procedures of designing from the desired outcomes of design—i.e., the type of design activities that represented excellence for participants. In this sense, exemplars represented: best practices; the situated, experiential and shared techniques used to demonstrate success; and examples of work that express a central idea to designers or a well known example. Exemplars were also identified in stories of failure, as representing something to avoid.

Three categories developed in the process of analyzing data with a view toward answering this research subquestion. These were (1) shifting, (2) sifting and (3) socializing. “Sifting” became a metaphor connecting the emergent categories to the DM and helped frame what the design activity entailed for the participants. Concepts are categorized

according to DM elements that was used as the framework for identifying the emergent categories (Table 4.6).

**Table 4.6 Categories of professional identity**

DM ELEMENT	PROFESSIONAL IDENTITY CONCEPTS	EMERGENT CATEGORY
<b>Generalizations</b>	Designing is a model for inquiry; design is generative; design is not defined by objects; design is not art; designers are “less at the ‘board,’” more into strategy; play a larger role; do more; design can be maximized, expanded, relocated in other contexts; expanding our power and competency; thinking through making; showing future state with clarity	<b>SHIFTING</b>
	Designers serve multiple roles, wear multiple hats; design is “opportunity finding”; finding the problem; design mediates meaning; look at the whole; finding a fuzzy situation; framing projects;	<b>SIFTING</b>
	Design is communication; design is a mechanism for social participation; making the argument for “being there”; telling the story to the different groups; design is social production; jumping into the conversation;	<b>SOCIALIZING</b>
<b>Commitments</b>	Verbs, not nouns: skills are generalizable, transferrable; sensitivity to context; ask leading questions	<b>SHIFTING</b>
	Making the details match the “big picture”; sense-making (not strange-making); making arguments as opposed to making designs;	<b>SIFTING</b>
	Design is the “glue,” “bridge,” “conduit,” that unites different worlds; trans-disciplinary enablers; designing from other people’s perspectives; design lives in the practical world; engaging proactively not reactively	<b>SOCIALIZING</b>
<b>Values</b>	Design(ers) playing a larger role; expanded context; moving into bigger areas; shifting how we talk about design;	<b>SHIFTING</b>
	Making the right thing versus making the thing right; confidence to know where the designer fits in;	<b>SIFTING</b>
	People-centered: valuing peoples’ lives; making society better; starting with people; facilitate between technology and human experience;	<b>SOCIALIZING</b>
<b>Exemplars</b>	Leaders: design can do more; shapers of society; strategizers Loners: designers do not work as “creative geniuses” Pioneers: not just one identity; pushing design in new areas	<b>SHIFTING</b>
	Faciliators; mediators Translators; editors; sense-making not strange-making	<b>SIFTING</b>
	Advocates: for design’s place	<b>SOCIALIZING</b>

The ideas communicated in the participants' comments that represent the major categories of the disciplinary matrix were expressed in different terms, thus more than one excerpt is included to provide depth in their views. Where appropriate, statements were chosen to show interrelationships between categories and subcategories. Some comments addressed more than one category and therefore may be duplicated in multiple categories—though duplication was kept to a minimum to avoid excessive repetition. All participants were asked about their thoughts on the designer's role. Some participants discussed this question with the educational goals of their program or the learning objectives of coursework. Other participants framed the question according to their views of the general design field or the kind of designer they hope to educate. A few participants discussed the question with all three perspectives of student learner, general designer and future professional. Where possible, answers that addressed the question for course objectives and student learning have been omitted, as they are specific to design pedagogy and may not be applicable for understanding professional identity.

The understanding that the outcomes, skills and activities of design need to *shift* from the traditional scope of artifact creation, production and form making was a common theme in the data of the four programs. Mae explained, "Our role [as designers] is understood as doing the styling, but that's changing..." Design is "...a field in transition..." and it is, "moving into bigger areas," where the designer's role is expanding (Jill, Sarah, Charles). The shifting role of designers applies to the way designers talk about their role, as Amy posited, "Design has to really shift the lens away from always talking about typography, type and image, color and visual hierarchy; it keeps setting us back into these modulars we can't shake." Furthermore, this increased role requires design activity to move back and forth between "micro and macro views" of the problem at hand, and "shifting the perspective" (Mike, Kevin, Lynn, Mae). Designers need "the capacity to

change modes in working,” and “change directions and shift gears while doing work” (John). In terms of being a “generalist” practice, participants often described design activity as “scaleable” (Jeff, Joe) and “transferrable” (Jeff, Mae, Rebecca, Kathy and John) to whatever situation graduates find themselves in—whether that situation is in the design field or elsewhere. While participants believe it is still a dominant characteristic of professional identity, the form-making activity itself is shifting. Mae’s comment reflects the participants’ views:

[As designers], we are really seeking peoples’ experiences and desires. As mediators, we are shifting between different worlds within the context of our roles as designers.

“Designers are not only form-makers or problem-solvers anymore,” Charles explained, like Jill (Program 2) and John (Program 3) believe, designers are becoming “less interested in ‘being at the board’” and “not always just solving problems, but finding opportunities.” When asked if form-making, craft and aesthetics are becoming less important for design work in lieu of the other nontraditional competencies, none of the participants found this to be the case:

**Mark:** “I feel that they’re both important, and I feel that neither is going away” (Program 4).

**Kathy:** “Program 1 has always had a long tradition of making, and I don’t think that’s going to go away. We don’t want to lose a bit of that—if anything, we want to emphasize it more” (Program 1).

**Mike:** “In my book they are equally important” (Program 1).

**Mae:** “They’re equal...as a creative problem solver, what’s the designer’s contribution, their expertise? It’s form...visual languages” (Program 3).

**Mitch:** “I think the studio doesn’t go away, because what’s the studio? It’s a place to practice methods in a project-based environment” (Program 1).

**Jeff:** “There are additional factors to consider, but I don’t see those things coming apart at all” (Program 3).

Regarding form making, the shifting role of the designer was understood from the understanding “form” is assuming new meaning. Robert (Program 1) elaborated, “The *object* of design—not the *process* of design—has changed.” Furthermore, design artifacts are not only less tied to specific material or formats *per se*—form is becoming less visual, less visible, and even *invisible*.

**Jennifer:** “Form-making in a research mode is very different from aiming toward the artifact” (Program 2).

**Mae:** “[Design] expertise is form...but form is really broad” (Program 3).

**Bill:** “Like any designer, [interaction designers] are form-givers, but their form is the behavior...” (Program 1).

**Lynn:** “You will never come in contact with the XML markup unless you look for it; but I am of the opinion that is where the design of text will take place, and it is not visible. It’s in the writing...” (Program 4).

Several of the participants’ responses were framed in terms of what design is *not*. These views (rather logically) were in line with concepts that became interconnected with the category “distancing”—i.e., design is not art (refer to Section 4.3.2). The designer is not the “individual genius” behind a project (Lynn, Mike, Jeff, Elizabeth, Joe, Jill, Riley, Kathy). Jeff understood the role of the designer in the design activity as “sense making” as opposed to “strange making.” There were other noteworthy subcategories regarding what design is not. Design and the designer’s identity are not defined by “outcomes”—i.e., format, medium, artifact, specialism. Design is, “...*not* tied to one media,” and “...*not*

defined by what we make...” Rather, design is “interested in inventing new mediums” (Bill, Lynn, Charles, Jason), defined by “how we pitch it or frame it,” (Lynn). It is notable that these views of the profession are more aligned with emergent design practices such as Service Design, Experience Design, Strategic Design and Participatory Design (c.f., Garret, 2003; Moggridge, 2007; van Allen, 2007; Sanders and Stappers, 2008; SDN Service Design Network, 2010).

Several concepts in the “shifting” category were, logically, related to the primary category “mediating meaning” (refer to Section 4.3.2), as they were related to processes of “establishing rigor” and “elevating design practice.” Noteworthy in this regard was the view that design is speculative and generative—i.e. “the discipline of genesis,” as Kevin put it; “making opportunities,” according to John. Design activity is a mode of research and formal inquiry, e.g., “...a knowledge producing tool,” said Alan. Mae understood designing as a “theoretical framework...more than just application.” The primary means of framing design as a process of inquiry was through the concept of “thinking through making” (Jason, Kelly, Lynn, Alan, Spencer, Kim, John, Anthony, Jeff, Jill and Jennifer).

Charles’ description of design as, “Gathering information, gathering lots of different ideas and then, as a designer, being the editor and understanding how to sift through all that and make decisions to then move forward...” was indicative of the participants’ views in the “sifting” category, and suggests several elements for a common professional identity. The “sifting” category revealed a range of properties, from “seeker,” to “sense maker,” to “interpreter,” “framer” and “editor.” Designers “find opportunities,” “make opportunities,” “define fuzzy situations,” and “see where design could be useful,” (Charles, John, Kevin, Jeff and Jill). Designers must also “see” from different angles and perspectives, in the process of “looking, understanding and making,” Kevin explained. While Spencer described the designer’s role as one who “makes the details

match the big picture,” Bill explained it as “...finding the harmonious intersection.” As seekers, designers are “always looking,” as Anthony put it, and “stepping back to look at the big picture,” according to Mike. Mark thought it was important that designers “see the world through different lenses,” and Kathy and John thought it important for designers to “view things from level of systems.” Along similar lines, Mae, Kathy and Jill noted the designer’s ability to “look at the whole without neglecting the details.”

In being comfortable with ambiguity (Kathy; Lynn; Charles; Joe), designers have to “roll up their sleeves and begin iterating solutions” and “quickly map out a territory” with minimal information (Kathy). They need to be able to “know how to find out how,” as Lynn put it. For Jason, designers “need to understand and be able to interpret for others the modes of different kinds of research.” As sense makers, designers have to “know how to ask questions,” “know what is the question,” and “not be afraid to ask questions” (Jennifer, Lynn, Charles). Spencer described interpretive activities as:

Knowing selectively and strategically how to listen, and how not to listen, and how to give people what they need—and not just what they ask for—so that [people] recognize that’s what they needed all along...so that they feel that they have been heard in the most profound way.

The designers’ ability to interpret design matters from a “socializing” standpoint concerns the ability to “do what’s appropriate for the situation” (Bill; Jason). Jason saw these as intertwined abilities where designers “deploy communications in appropriate media and across multiple media.” Along with writing skills, spoken communication is critical with regard to “socializing design.” As a design skill, communication is a social process—it requires mediation where designers interpret and intervene in the delivery of messages (a more traditional understanding of design as communication); additionally, it

involves being an effective “storyteller”—as Lynn put it, designers have to know “what makes good fiction.”

The storytelling concept was notable in the data of Program 1 and Program 4, particularly in the context of interaction design. Its absence in the data of Program 2 and Program 3 highlights one major difference in professional identity of interaction designers and visual communication designers. Designers “understand what makes good fiction” and need to know how to “craft good stories,” according to Lynn. Interaction designers develop and present their ideas by “sketching through narrative,” according to Bill and Sarah. As discussed previously in the “shifting” category, the meaning of “form” in interaction design is the “behavior.” The form of behavior is not tangible or material, suggesting why storytelling is more dominant in the data of some programs.

The interpretive role in a communicative capacity requires designers to “articulate their expertise to others who don’t understand their field,” (Lynn); “articulate a plan for what is to come that someone understands,” (Jill, Sarah); “articulate process,” (Kim); “communicate how they see and analyze,” (Sarah); and “tell the story that makes sense to different groups” (Bill). Participants identified the roles of editor, framer and synthesizer as being able to:

**Kim:** “pull out a very specific, ‘prototypeable’ instance of big, broad brief” (Program 4).

**Kevin:** “frame the problem” (Program 1).

**Kathy:** “framing problems appropriately” (Program 1).

**Bill:** “...find the harmonious intersection,” and “solve the right problem” (Program 1).

Shared commitments among the four programs saw designers and the role of design described as “being a conduit,” “facilitating between” and “uniting” different worlds.

Most views about the purpose of design were defined as inherently social, outward-looking practice. The idea that design has a valuable social affect and serves a common good led to values that concerned “making the world better” among many participants. “There’s an implication that tinkering continues, refinement continues, or you try things out to understand what’s still not working or how to make it better,” Kathy explained, “it’s in our culture to expect things to be wrong.” “...The things you make, at the end of the day, ought to solve social problems,” Spencer contended. Mike believed that design “can contribute to making people’s lives better,” while Charles and Amy saw design’s potential to “guide the world in a real way.” Bill defined the issue as one concerning professional judgment, or, “making the right thing versus making the thing right.” Several participants brought up the contextual nature of design from the social standpoint, requiring “people skills,” in negotiation, inviting the viewpoints of others, and in “socializing design to survive”:

**Jill (Program 2):** “design is social production, which by definition means it is contextual.” It is concerned with “how ideas live in the practical world.”

**Jeff (Program 1):** design is “socially aware of context.”

**Charles (Program 4):** “To be effective...designers need to be a part of the discussion of the context that design sits in.”

**Mae (Program 3):** “We always go back to people...bringing more people in at multiple points of the design process...through an ability to engage with people with sensitivity to context.”

Socializing design was strongly tied with the notion of moving projects in a positive (forward) direction through the student’s willingness to “step into” and “engage the unknown” (Bill; Mae). In their ability to work collaboratively, designers are *facilitators*, capable of “moving an idea forward” (Mike) or “moving a project forward” (Charles). Kathy described the designer as a “cross disciplinary enabler.” In their facilitator role, designers

are often found in the context of interdisciplinary collaboration. “We think that collaboration, the ability to work effectively and harmoniously in a team of other people is essential,” Kathy told me, asking, “How can the designer on the team function as the person who can begin to unite people from many disciplines and facilitate productive action within those kinds of teams?” Similarly, Mae framed the designers’ expertise as a “conduit”: “Designers can really be...engaged in different areas of complexity, and can translate it, and facilitate two different worlds or multiple worlds of interdisciplinary engagement.” Amy also understood the facilitator role as “uniting.” She explained, “Design has really pulled together really different groups of people into one space where they can begin to have a conversation...”

#### **4.6 Subquestion 3: The Design of the Teaching Environment**

The third subquestion is: *From the perspective of participants, what characteristics of programs facilitate their approach to teaching nontraditional competencies? What characteristics of programs do participants believe inhibit their approach?* This subquestion addresses academic culture directly and was key for understanding how participants framed their teaching practices in the context nontraditional design competencies.

Cultures of collegiality and commitment were evident in the relationships among the participants in each of their respective programs. The subcategories “generational thinking” and “agency” were important in framing this understanding of culture. Generational thinking was demonstrated through long term commitments to teach nontraditional competencies that included human, material, financial and conceptual resources. For example, at the organizational level, curricular structures, financial resources and faculty appointments were allocated separately from undergraduate levels.

Support was provided for the recruitment and acceptance of students from multiple disciplines—as well as the time for faculty from other departments and institutions to advise them. Teaching assistantships served the dual purpose of supporting both faculty and students. Programs often provided regular, ongoing financial support for faculty to not only present at conferences, but to attend conferences and developmental workshops to simply “find out” and learn. The ongoing support of collective facilities was crucial in achieving educational goals that concerned nontraditional competencies. Libraries reflected program research commitments by maintaining diverse current holdings and subscriptions for academic journals, professional trade publications and access to online subscriber databases—related to design and otherwise.

At the organizational level, each program mentioned the *in-vivo* code “low walls, no barriers.” Although Lynn (Program 4) was initially distressed over what she described as “ad-hocism” in the upper level of administration, she grew to appreciate “low walls-no barriers,” explaining, “If you have a department chair who’s entrepreneurial, who has a really good faculty, you can build something—you have the agency, you have the permission, and if you can make the argument, you can get the resources.” As an environment where faculty are “rewarded for changing,” Spencer—somewhat jokingly—attributed Program 1’s establishment of three different interdisciplinary graduate tracts to “a lack of official policy.” The strength of Program 1 was that “Disciplinary walls are almost nonexistent,” as Bill continued:

Barriers have really been lowered so people like Sarah and I—who are in a computer science department even though we’re not computer scientists—provide a bridge for design students to come over, and for computer science students to move back and forth and engage in different models of inquiry.

Change was a constant theme in the data of the four programs, and the participants' attempt to manage it resulted in processes of alignment, integration and coordination. Teaching design from a perspective that was sympathetic to research practice, interdisciplinarity and collaborative working situations required a flexible, agile teaching environment on multiple levels. As Mike (Program 1) explained, "Because we bring in people with a range of backgrounds, already we're teaching in a different way." Sarah (Program 1) saw the curriculum as a design problem that needed to be solved. "Clearly, we have more to cram in than we did 20 or 30 years ago...some things have to be condensed and some things have to be expanded—there are constraints, just like any design problem." A notable category in program flexibility and its "ability to adapt" regarding the teaching environment was "see(k)ing provisionality." See(k)ing provisionality is the ability to "get around" policies and other structures that appeared (at least at first) to pose barriers for the participants. "Agency" and "going against the grain" was a common theme. Jill's recollection of her experience at Program 2 exemplifies this subcategory:

We were constantly in what we called 'space wars' with other department heads, fighting over the scheduling of large, group classroom spaces. I realized if students were kept within sections, we could stack all of their courses in the same room. So we pulled out of all the competition for common space and promoted the notion that students will be stable and the faculty will move—and I think it was one of the best things we ever did.

Mark's understanding of the evolution of Program 4 within the larger context of the institution demonstrated "agency" in seeking to distinguish itself, establish rigor and go against the grain of the wider institution. "It's been a gradual process of trying to achieve self-definition," he told me. "The institution has a strong reputation for

accomplished, polished-looking work, rather than critical richness, or being afraid to show process; but I think Program 4 is very committed to changing that conception—while at the same time, not being in conflict [with the wider institution]. I’m quite excited by the idea that the program could develop uniqueness—not through being the opposite, but by productively marrying those two defining values.”

The manipulation of the 16-week academic calendar and two 12 unit semesters of courses with three credits—the standard curricula for most disciplines—was a common practice. Studios were based on loosely defined thematic content that facilitated the ability of Program 2 to adapt, integrate and coordinate with pressing design issues. “That’s what maintains [the program’s] responsiveness and agility,” Jill said. “If we were more prescriptive about what each of those [course] themes was about, I don’t think we could keep up. We can respond on a dime if something changes out there, and that’s a nice position to be in.” This agility was also the result of a loose framework at Program 2—however, a *loose* framework did not imply the *absence* of a framework. “The curriculum that we have is really just this bare bones armature,” Jennifer explained:

It’s not like [my graduate experience], where the faculty assign the same projects every year. We are very free at Program 2 to try to get at the issues—whatever issues—within this skeletal framework. Whatever is germane at the moment, responsive to things that people are talking about, or new theories that have come out that we see happening out in the world...[the curriculum] is able to adapt to these kinds of things.

Program context had a notable affect on agility, according to the participants, where small size was often, but not always, an important element. The small size of Program 4, as well as its exclusivity in the domains of fine art and design, was a motivating factor in hiring policies that involved “expanding levels of participation” to maintain its

interdisciplinary focus. Flexible hiring policies enabled professionals and academics external to the program and institution to engage regularly and teach according to the program's need. "It's a real virtue of how the department as been coming together...there's a lot of freedom for how people can teach within the department itself," Mark noted. "Program 1 is a very small university...it's very nimble..." Kathy told me, "It's very easy to introduce new initiatives or try out new things because we're so small—there aren't the levels of red tape, and it's not a state school, so we don't have as many controls to pass through. I recently asked how long it would take to get a new Master's degree approved at the administrative level, and Kathy responded, "Maybe a year—which is pretty darn fast." Program context also revealed an interesting, albeit paradoxical property regarding size and institutional status. When asked whether faculty could work across disciplines as deftly if Program 1 was a part of a *public* institution, both Mike and Spencer were adamant that it would be impossible:

We couldn't be public. Because we're private, we don't need to go to the State to petition for anything. We can start programs whenever we want, and we can start and end classes whenever we want. That makes us agile. That meant that design and [this department] could join forces and within a year have a joint program. In a public university, it may have taken more than a decade. We have an agility here to keep up with practice and keep courses of study up to practice.

On the other hand, Bill, whose faculty appointment was split between HCI and interaction design, suggested that experimental work is facilitated by his location in the extraordinarily large School of Computer Science:

Because we have seven computer science departments, we don't need people doing core stuff. I'm in a fringy department, on the fringe of the fringe. If

there are holes to fill, and if the program is small, you need people covering the core. As your scale grows bigger, you can really begin to move out into interesting directions...into these much more interdisciplinary, collaborative spaces that smaller departments will always have more challenges with.

Flexibility and having the agency to “make change happen” created a condition where teaching environments were easily designed to reflect the Programs’ visions of future practice. Participants often described how they were able to not only “respond on a dime” to the “momentary issue,” but that flexibility and adaptability were crucial categories for carrying out educational objectives in the new competencies. Much attention was given to physical space, where the goal was having dedicated and flexible settings (though not always in terms that participants needed or preferred). Mitch (Program 1) posited that new competencies were better promoted by teaching in the traditional studio context. “If anything, [other fields] are looking for the studio-making ethic,” he told me. “People are starting to understand it’s not just the methods—the environment has a very important affect on how [designers] work in this way.” He felt that other schools are considering design’s project-based learning method, because “that’s what life is like.” Physical space has to “support how you expect the class to work,” Jill elaborated. Rooms need to be arranged, partitioned and adapted according to the specific activity and furniture should be mobile to accommodate.

Not only does the instructional space need to accommodate adaptation according to the design activity, there was the additional need for diverse *types* of spaces—group space, public space, small group collaborative space, quiet space, dedicated undisturbed space. Regarding the inclusion of these diverse spaces, Lynn described Program 4 as having “flexibility built in to the design” so that faculty are able to “try out different things,” recommending that, “we think about what supports the kind of work that’s happening and

how we can mold the space to make that possible—whether that means people need giant tables, or do they need more individual spaces? Do they need quiet?”

The policy at Program 1 required faculty to develop new courses on a regular basis—not just when faculty felt the curriculum needed updating. Notably, this policy was not viewed as burdensome, Sarah explained, who saw it as an opportunity to try out new ideas in teaching or course content. She explained how this flexibility in the development of courses facilitated teaching as well as the maintenance of a more interdisciplinary student cohort each year—the goal was to “cross-list every course,” Sarah noted. “You really try to design a group of students that bring different things,” she explained, “I think it’s important, because there comes the elements of teamwork.” Jeff elaborated, “We try to balance out how many people with strong academic credentials—but maybe not strong design backgrounds—with strong designers who perhaps, are not quite as academic. Ideally, we look for both, but we definitely try to get a mix.” Sarah’s consideration in the juncture of two schools whether “design students would get as much out of [a course] as HCI students...” Her HCI coursework not only accommodated multiple majors, but multiple types of student: two and three year majors, as well as students who attend for only one year of professional experience.

Participants often described their ability to teach from a standpoint of “being flexible,” as a “just-in-time” teaching method (Jeff, John, Joe). Jeff, for example, explained the strategy of continuously aligning his research methods course with the Master’s studio (and studio faculty doing likewise) in order to introduce topics that “follow a sequence of time in the design process,” according to the progress of the studio project. “Students acquire methods in a just-in-time kind of basis,” John explained, “they’re doing the collaborative research in the studio, and then as they progress, they acquire the kinds of methods that they would need to use at that certain point.” The result is a series of courses

that are in alignment with each other. The ability to teach this way required faculty to consult with each other often, rather than teach in isolation. This provided the opportunity to learn from each other for several participants. For Lynn (Program 4), being flexible in teaching was a skill acquired from co-teaching with her colleague Anthony. She described how she was able to experiment with strategies of instruction and become more comfortable with ambiguity with a view toward not expecting certain design outcomes, understanding that being flexible is about “learning to assess what’s in front of you.”

Authentic problems, audiences and clients ground nontraditional competencies in “real world” contexts. The category “providing frameworks” was important for teaching students how designers might, for example, “do research” in professional practice. The thesis is more than just a way of positioning students for work upon graduation. All programs offer a series of courses that provide frameworks for students to approach the thesis process. Notably, participants often described the Master’s thesis as a particularly relevant framework for “developing dispositions” for nontraditional competencies. Students have to engage in the formats, structures and behaviors of a professional researcher, Elizabeth explained, including a “full-blown proposal, a research question and sub questions, assumptions, limitations and a literature review.” Alan noted that thesis courses are “frameworks to get students to jump into looking at examples of design as tools to question or question itself...” Specific research methods courses were proven useful for “regularizing a sense of research among students,” Spencer told me—especially in the context of “establishing rigor” in student work and the field:

Our course covers archival and catalogue research that you would do before a project...and in preparation for your research, defining your problem, and trying to create some kind of design for going ahead with a project and then, at the end, evaluating the effectiveness of the project. This is a kind of

research thinking that's even brought to regular design work so that when working for a professional firm, students can talk about a systematicity and a methodology that often might not be seen in practicing firms.

As mentioned in Section 4.3, participants avoided using the term *research*, however, regarding teaching research as a design practice, they encouraged students to use the perspectives and altered the methods of other fields. It is important to note, however, that participants did not simply import theories and methods from other disciplines into design coursework. In other words, understanding the processes of other disciplines does not mean teaching designers to become ethnographers. Two categories demonstrated this point: “maintaining the uniqueness of design” and “making appropriate for design.” “Making appropriate for design” is recasting methods and ideas from other fields—e.g., strategies such as participant observation and survey methods and providing frameworks for explaining research—to render them appropriate for design contexts. At Program 1 and Program 4, students invent methods to obtain data that is “appropriate for what design needs.” Jeff, for example, teaches:

Methods that we've borrowed and adapted for our own purposes. We borrow from anthropology, but we don't do a true ethnography, we do designs' versions. We borrow from HCI our versions of “think aloud protocol” and “contextual inquiry,” for example. Then we have an area of “innovative” methods that designers invented—participatory design, tool kits, crafting, co-design activities.... We teach largely ethnographic exploratory observational methods, interviews, questionnaires, action research—co-design and participatory design—and evaluative research: testing and getting feedback on products and prototypes.

Master's level research is about learning a process for identifying problems and asking grounded, practical questions, "Not exploratory, 'Big Research,'" Robert noted, "...but how to come up with real problems in the real world and really articulate the problem—and how to go about asking questions." External audiences require that an assignment has "a consequence in its presentation to the outside world," Jill said, "not that it's a commissioned work for a company, but it means that [the students] are going to have visibility and accountability." Mae believed it was important to ask students to grapple with the "chaotic nature of context" in design problems, explaining, "It's not just theoretical learning...every class brings in the real problem, the real people, so students see how it works... It means, for example, the staff member from the community center who works with a certain population becomes a project partner with my students in a subgroup." Regarding the provision of frameworks for authentic activities in projects, Sarah mentioned "content" skills and "skills" skills, where projects not only teach students about how to design an interface:

There's going to be skills related to gathering requirements. They might do a literature review because they need to know what the 'state of the art' is, what the technology is. They might do interviews with people. They develop personas and scenarios, and they might do what we call "speed dating," which is rapid concept evaluation. With each project, we're embedding not only the content and the medium, but also the design activities that lead you towards a solution. Also, they're working in teams, and I always try to talk a little bit about that, although, I personally have not formalized any lecture about teamwork. I saw this year that I really needed to do it.

In the context of providing frameworks for technology, Jason (Program 4) explained, "I've developed several tools for our students that allow them to focus on

concept and design without having to become engineers. That's just a really strong philosophy of mine in teaching these kinds of students is that they should get to the idea quickly as possible—not that they shouldn't understand the technology, because they have to engage with it.... My experience is that if you don't have those kind of tools for them, they get bogged down and they'll spend an entire term learning how to write a bit of code.”

Narrative and storytelling were conducive to teaching interaction design at Program 1 and Program 4. “Body storming is an improvisational approach to design where you pretend to be a user in the context of your design, and you physicalize it in the moment that you have a need, and then discover, using your entire body,” Bill explained. “It's not just visual; it's a much more multi-sensorial style of envisioning things, but it's also a narrative style, in that interaction is action—and the only way you get at the action is to be in a narrative context.” Bill describes his version of improv as “social and collaborative because it's about engaging with other people and talking, listening and watching the idea transform as students try to make sense of it and invent it—but they invent it with their body, not just with their head.” Sarah added, “We talk about sketching through narratives, rather than just pixels, because I think that gives the designer more agency in what they're doing and it paints a richer picture of how we design.”

A sense of collegiality, participation and sharing were demonstrated through what I came to understand as a “culture of ‘being there’” at each of the programs. Robert (Program 1) explained “being there” as a realization that students, when put in a room together, will learn regardless of faculty presence: “I know the faculty don't have to exist,” he explained, “but I think that culture of ‘being there together’ helps a lot.” “Being there” is more than an individual's physical presence—it is a social and cognitive state of mind. A culture of “being there” was ubiquitous in the data from fields—it was found in the corridors as well as the classrooms, and in the participants' various interactions with

others in the learning community. Participants often brought up the value of having professional relationships across departments and the importance of advice from others outside of their program in processes of course development, planning and evaluation. The subcategory “staying in the loop” is, if anything, about a cognitive commitment to “being there.” Jill explained “being there” as having to “read and pay attention to what’s happening out there,” noting, “one of the ways to do that is to make sure the program has exposure to people from outside...” Regarding co-teaching with other colleagues, she concluded, “It’s important that we be there...because you’ve got to be there to make sense out of it as well.”

“Being there” is about engaging in a way that requires empathy and openness to the thoughts and feelings of others. The ability to make a case for design’s presence in the questions of other fields, for example, requires such an understanding of the perspectives of others. When entering interdisciplinary conversations, as Alan (Program 4) argued, the ability of design to contribute hinges upon knowing “the expectations that design needs to meet from other disciplines...” and “the self-evaluation expectations that they need to be confident in using your material. There are certain expectations that designers need to speak to, and you need to be able to satisfy those to really be able to contribute in a significant way,” he explained. A concern for “being there” includes drawing on one’s experiences and using will to imagine and change one’s future.

Notably, feelings of “ownership” regarding ideas and coursework were not found in the data. “The people here, in my experience, are very open and willing to collaborate,” Kathy told me, “I have not seen as much academic posturing here as one can find in a university, where people are guarding their ideas and it’s very competitive.” “Designers have a tradition of tightly owning their ideas,” Sarah added, a trait that extends to design education in the courses that are taught. Conversely, Sarah “feels happy to share the pieces

of the curricula” that she develops. “What makes it unique is when I execute it—and I don’t know that everybody feels that way.” Faculty had no problem with swapping classes from semester to semester, while others, such as Kim and Anthony (Program 4), often sought opportunities to combine their classes with each other and with other colleagues. The ability to combine classes was accomplished at Program 4 by scheduling studio courses concurrently on the same days and by faculty coordination regarding the alignment of project schedules. A collegial attitude was extended to diverse, even conflicting, perspectives and became a teaching moment in co-teaching at Program 2. “Jennifer and I are extremely different,” Jill explained:

We come at things differently and have different perspectives. I would like to think that there’s healthy respect for each of those positions. We’re not interested in conversion; it’s not our job to convert each other to one way of thinking—nor is it our job to create acolytes in the studio who think like we do. Somehow, students have to learn that those differences will be there.... It sounds like chaos, but if you’re committed to making it work, then you make sure that students aren’t caught in a dilemma of different opinions. What I think [co-teaching] does is get around any blind spots either of us might have on what we need to be doing. We can sit down and Jennifer will bring up a whole different set of current hot button topics than I would—and I think that creates a more interesting perspective on what a studio might concentrate on in a given semester.

As further evidence of a “being there” culture, the practice of team teaching was ubiquitous in the data of the four programs. Somewhat ironically, the allocation of an atypically large 9 credit block for the Master’s studio had the effect of enabling co-teaching at Program 2 by discouraging the appointment of only one faculty, “Because it’s hard to

dedicate a single person to one course of nine credits,” Jill explained. Furthermore, the nine credit studio “was also by design to mix things up,” she continued, “if [the students] live with one person one semester, and then another person another semester, those two people have two different viewpoints, and the students can get a sense of being whipped around. If both faculty are in the room at the same time, they can make evident the relationships that are there, and that things are not as contrasty as they seem.”

The data point to the design of the teaching environment as facilitating a culture of “being there.” Space and technology were both important in this regard, according to the participants. Robert explained, “Studio space is not there by chance...keeping a big space, holding onto it, is a conscious decision.” Programs integrate the first and second year Masters students in different ways: by sharing studio space, collaborating on special projects or combining them in classes. “We think [mixing the different year levels] is important because they learn from each other that way,” Jill told me. Furthermore, faculty teach in the student’s studio (rather than a classroom) at Program 2, to “create a common space for work,” she explained. “It creates an impression that the studio is not just for being in your own head on your own computer—it’s place for discourse and dialogue.” Collective studio space is key in building a culture of “being there” among the students at the four programs:

People have talked about laptops and the ability to work at home, but the bigger issue is the resentment felt by students who work at the studio when one doesn’t stay. The people that are most disgruntled are the students who are always there. There’s a feeling that the person who is not there doesn’t want to be part of the community, and the other students resent that. It also ramps down the competition when they’re all there, and they see each other’s work.

Regarding a “being there” culture, programs began teaching as well as developing relationships among new student cohorts by the subcategory “having conversations.” This process begins early at these programs—typically the summer before students arrive on campus. Faculty work with incoming Master’s students before their arrival to provide appropriate software and hardware. At Program 2, students are given a reading list before their official enrollment “and having done an interview in which they are required to be on campus and meet their potential classmates,” Jill continued, “we’ve found that they start having conversations before they get here. It builds a sense of camaraderie that I think ramps down the competition a bit. Once they’re here, they carry on those practices.” The idea “constant articulation is critical,” as Jennifer (Program 2) and Joe (Program 3) believe, was often expressed by the participants, including John (Program 3), who views graduate education as “having independent space and time for different kinds of conversations.”

A culture of “being there” was further cultivated by the use of technology. Alan (Program 4), framed the role of technology in the “being there” process as a compliment to the physical and social dimensions of teaching: “What does it mean to be a researcher and what does it mean to share your work—and how do social and online spaces provide opportunities to have those conversations?” As in the need for different levels and types of physical space, space for online presence also requires multiple levels: “What are the ways students can have public conversations that still include rigor in some ways and then in other ways, just share their work in a kind of different conversational space...” Participants brought up other issues around the interpersonal aspects of collaboration, including trust and building value. Bill, for example, teaches *body storming* from an improvisational perspective because “improv is really about learning to listen and trust your teammates to not completely fail,” he told me. Joe (Program 3) noted that much of his time was spent

“helping to facilitate solutions to those sticky problems about ‘I don’t like the way you talk to me.’” In this regard “providing frameworks” and “building value” are vital in creating a culture of “being there”:

These issues present one of the biggest challenges to learning to collaborate and expose fears about control and creativity and success.... We give them tools to help them manage the human aspects of collaboration. We build a value for it and we teach a process for it.

A common feature extolled in design school recruitment literature (including the programs in this study) is their offering of ‘state of the art’ computer facilities. While technology has become crucial in the education of designers, its support and upkeep are aspects of the teaching environment that are often an afterthought—or worse, altogether neglected. Jill noted the tendency of those who staff the college lab to “think of themselves as little kingdoms” in the ownership of equipment of the school. A distributed technology model somewhat alleviated this problem at Program 2, Jill told me—however, it demands the right mindset and personality. “Chris is never in the lab; he needs roller skates—but there are others who don’t get out of a chair,” she explained. The arrangement is different from models in most schools, where often, central computer labs do not accommodate even basic use. This lab design requires it to be installed in a centralized location using a “battery hen” configuration that maximizes the presence of the technology, as Jamieson (2000, p. 223) argued:

Typically, such labs are outfitted with cheap, often inappropriate furniture and fittings which defy ergonomic principles, fail to accommodate the use of non-IT resources and offer little scope for student-student interaction without impeding other users. Ironically, this type of environment serves to isolate the student as an individual learner, binding the student to a

single computer in a situation often characterized by overcrowding. The potential for student-student interaction is rarely realized, owing to the layout and the fit of the facility, as well as the way it has been represented to the student in terms of the type of behavior which should be enacted in that place.

A technology-focused design that reflected a culture of “being there” was present in various degrees at the four programs. The integration and coordination of physical, conceptual and digital space is an approach to the design of the teaching environment that appears to explain how the four programs managed to establish a “being there” culture that avoided the isolating effect of the “battery hen” configuration. The category “holistic design” became important in this regard, demonstrated in processes of “coordination” and “alignment.” Lynn understood the role of technology in building a culture of “being there” as a means of coordinating different scales of conversation. She described “three spaces” that Program 4 occupies: “the physical space of the studio in the facility, the curricular space, and the web space,” noting how the Web aligns with the intention of the space and the curriculum. “As a community, the Web is a space we occupy,” she explained, “we have little conversations and big ones, and we speak outward and we speak together—same as in the physical space. There are public components and intimate components.” The coordination, alignment and integration of policy, pedagogy, technology and space regarding “flexibility,” “developing dispositions,” “questioning existing practices” and building a culture of “being there” was summed up nicely by Jill (Program 2):

I think that the furnishings have to not look pieced together, and the designation of permanent studio space, and the requirement that their computers are there—the requirement to be there. We tell students they have to be there from 10AM–5:30PM, five days a week. All of this is to build

a culture—and to make a clear separation between home and work, because I think we’ve lived for half a century now with this model that somehow it’s good to kill yourself and stay up all night and have everything come down to the wire—and that’s just bad planning. If they’re going to be empathetic to audiences they ought to have lives outside of school. So if they treat the educational experience in the way that they would treat being employed, then they ought to keep regular hours, and think of themselves as not racing to the finish on a project—to really being committed to an enterprise in the studio. It’s got to be an accommodating space in that way, and it’s got to support that kind of effort.

There were several barriers to teaching nontraditional competencies that were the result of the teaching environment. Touching upon the problem Jill addressed concerning the territorial tendencies of labs, Mark (Program 4) noted the difficulty of navigating policy at the institutional level regarding access to facilities. “There were times when I was making calls to try to figure out how to make the facilities more available, and it wasn’t a straight line, it was too complicated,” he explained. Some participants also felt that the trend toward models of greater efficiency in U.S. higher education has raised the level of stress, negatively affecting the faculty and the greater teaching environment. Noting recent budget cuts at Program 2, Elizabeth pointed out, “The expectations went up...there is this idea of adding three more credit hours of teaching...and then, we’re supposed to be able to [collaborate] across campus!”

Raising the “disciplinary hierarchy” issue, Elizabeth noticed how some departments fare better. “Architecture seems to be able to give people release time on a regular basis, and graphic design has not,” she told me. “They have more faculty lines than they absolutely need. We’re always very tight.” For Program 1 and Program 3, the

perception of a hierarchy stemmed from their location in a fine arts college. Kathy explained, “As an operating structure that we’re embedded within, this is a huge problem.” Her comment that follows is remarkable, and demonstrates one of the reasons why mediating meanings is crucial for the design of the teaching environment:

For 24 years we’ve had deans that come out of the School of Art. I did some research and found that the School of Art has more space per student. They have the biggest expendable budgets...the biggest amount of fundraising done on their behalf. They are in great shape, and the School of Design is not in great shape, and part of that is due to a complete misunderstanding of what we do.... They see us as coming out of the tradition of Ruskin and Morris. I wouldn’t argue that is one of the main threads of our lineage, but that certainly is not where we are today as a profession—and it most certainly is not where this program is. Our natural collaborators are the Schools of Business, Engineering, HCI and English. We don’t collaborate with anybody in the College in Fine Arts, and it hurts us that they do not understand what we do. It hurts us in terms of funding: we’ve had practically no funds raised on our behalf; every year the other schools have millions of dollars raised on their behalf. It’s difficult for us to get contracts with industry approved and facilitated at the college level because they fundamentally don’t understand what we’re doing over here. The fine arts live by philanthropy—Design and Architecture do not.

At Program 3, the preconceptions of fine arts colleagues effected the curriculum design, making the implementation process “a nightmare” for John. “There was a lot of pressure...to build the graduate curriculum off existing undergraduate courses.” A bias towards the fine arts approach to design also had the potential to affect the design of space.

“Graduate activities are entirely different from those in the undergraduate program,” John explained. “It’s not about the need for a personal studio spaces and access to tools—it’s about having an independent space and time to have different kinds of conversations. There’s a lot more talking than making things.”

Change due to the incorporation of new competencies was a source of tension for some participants. Regarding “too much to teach,” Kelly (Program 4) raised the problem of covering material that is not clearly associated with the norms of design in terms of student expectation: “We literally have to carve out space where we’re conducting research...and we have to give that incubation period. Sometimes that’s really tough, because the students want to be making every week.” There were tensions associated with issues of time, credit structure and workload for both student and faculty with regard to teaching research methods in courses that were designed to be “smaller engagements” than the typical studio. “It’s an ongoing challenge,” Joe (Program 3) explained. “We’re dealing with students who are at their wits’ end regarding workload.” It is a complex problem that addresses time management for both faculty and student: “I think what’s difficult is that the academic year ends, and the students and stakeholders still have goals that aren’t met,” John said. “Nobody limited their horizons, but the academic program ran out.”

Sarah (Program 1) elaborated on this view, “We have many things—the design skills, the software skills—then, we have this whole new modern design piece. That’s a lot.” She continued by addressing the anxiety designers feel over their expanded roles and responsibilities when seeking to engage with other disciplines and the consequent shift in meaning of their professional identity due to the demands that nontraditional competencies imply for design practice:

We’ve been planning changes to the undergraduate curriculum, which range from changing the whole freshman year to being about, “What is design,”

taking a big picture—and I love that, but at the same time, it gives me anxiety to think that students aren't going to study typography or form and color because we're reframing design. The old timer in me wants to have the studio, but the person who's working now in the world realizes we need other things, too.

Elaborating on the conundrums of interdisciplinary collaboration, Sarah continued:

I just gave a talk to, essentially, MBAs, and they want rubrics for how to design—they don't care about typography. So that's one extreme example of how we have to service people. Is it bad? I don't know how to answer that—it's different. The net result is that the uptake of design increases, design grows bigger—but the worst part is that they may only know [the typefaces] *Times* and *Verdana*—so it's tough! I feel at the undergraduate level, we still need the kind of education that we've had for a hundred years.

Space was a critical element of the teaching environment for each program as it had a notable affect on the participants' ability to adapt pedagogic strategies to accommodate nontraditional design competencies. Of all the impediments to teaching design from an alternate approach, participants brought up space (or, rather, the lack thereof) as the most critical issue—particularly at Program 1 and Program 2. Notably, spatial issues were more often a barrier for the two older programs. The problem of “not enough space” was especially relevant to the program goal of creating a culture of “being there.” At Program 1, for example, Robert explained, “Some [design strategy students] don't want to move [into the studio space reserved for second year design strategy students]” because they don't want to leave the community they've developed with peers in the Interaction Design Program. Jill also brought up spatial flexibility and the number of students yearly accepted into Program 2: “We have fixed walls, which means that certain

rooms can only accommodate certain numbers. I can't decide to have two studio spaces adequately sized for 7 and 13 students one semester, and then turn around the next semester and have two spaces for 10 and 10."

Although it may enable more flexibility in studio work space, technology—laptops in particular—was also sometimes seen as a barrier to building a culture of "being there" at Program 1. "I like our re-configurable rooms, but now that students have their own laptops, it's not functioning so much...." Sarah explained, "Collaborative work spaces are important, and I think that's what [the program] lacks at the project level." Building a culture of "being there" was also inhibited by available space that was, nevertheless, inflexible. Jill (Program 2) was concerned about holding an upcoming seminar in a space other than the usual Master's studio because the room could not accommodate discussion among an unusually large number of students. However, she explained that the means by which faculty would ultimately get around that barrier was their ability to "work harder to make the dialogue happen" when they do work together in the studio during other classes. "In other words," she continued, "I have to make the seminar activity integrate with studio activities when they're working in there."

Another practice that presented a problem in terms of interdisciplinary teaching was the timeframe of the usual design studio course. Other disciplines schedule classes in 1–2 hour blocks of time, and coordination with a 3–6 hour studio presented a big challenge for Program 1, according to Sarah, and the goal of "cross-listing every course," as well as accommodating the schedule of multiple majors. "Design has a different schedule," Sarah explained, "our classes are three hours and then they end at odd times, so it's hard to brick them in with the regular short class schedule." Time-on-task was a related problem for Jill, who, like Sarah, among others, demonstrated the notable affect of "questioning existing

practice” in the context of the subcategory “seeking provisionality.” Broaching the taboo of questioning the relevance and effectiveness of the studio pedagogy, Jill claimed:

The studio is such a long tradition, so it’s really hard to say this, but I think it’s a tradition that needs examination. It has to do with how people spend their time—are they spending it in the best ways possible? What do they need to bring from outside the studio to make the work productive and informed—and how do you account for that when you're working with a student in that context? How well matched it is to the place in which the ideas have to live afterwards? We have created this artificial setting that is so distanced from the kind of ideas that students have professed to be about, that there’s a certain dishonesty in the presentation.

In summary, the data showed the importance of continuity in the communication of values and objectives across the teaching environment as essential in processes of anticipation, defining and preparing students for change in practice. Establishing a sense of community through a culture of “being there” and a willingness to examine values openly were not questions for these programs—they were necessary conditions for taking seriously the need to prepare for constant change, transparency, ethics, accountability and responsibility in design education.

#### **4.7      *Introduction to the Core Category***

The core category in this study is “transactive integration.” From the perspective of the participants, “transactive integration” is a process of connecting people, tools, habits and places in a network of interactions and meanings integral to teaching, learning and professional design practice. “Transactive integration” was chosen as the core category because it was pervasive in the data and demonstrated a strong connection to the other

primary categories, thus establishing the criteria for fit. It also interpreted what the participants reported to be taking place in their respective programs—establishing the criteria for work. Transactive integration satisfied the criteria for relevance, as it was relevant to issues regarding the design of the teaching environment, and pointed toward processes of anticipating, defining and preparing students for change in design practice. Finally, it suggested a level of abstraction that indicated its potential for future elaboration, thus establishing the criteria for modifiability (Corbin and Strauss, 2008).

“Transactive integration” came about through the consideration of what category connected approaches to teaching nontraditional competencies to the design of the teaching environment. Two subcategories also emerged during selective coding: “transactive perspective” and “transactive alignment.” In the discussion that follows, relevant literature is included alongside the presentation of the core category and core subcategories with the goal of answering the research question: *How do leading graduate design programs express their approach to anticipating, defining and meeting the demands of preparing students for changing social and professional conditions of practice through the design of the teaching environment?*

#### **4.7.1 Transactive Integration**

Inspired by Deweyan philosophy and ideas from cultural geography that render the human landscape as *materialized discourse*, Cutchin (2007) proposed that physical environments serve to mediate the conditioning of our habits, and are inseparable from the people and actions that transpire within them. He posited an interconnected, multidirectional relationship between habit and environment as “the transaction of the social and the individual, with habit as being central to that transaction” (Cutchin, 2007, p. 50):

Habits, perhaps the most taken-for-granted aspect of human life, cannot be fully understood without more careful consideration of how humans “inhabit” the natural world. A particular understanding of places—another taken-for-granted element of human experience—as cultural landscapes that are scalar in character clarifies how the mediation of self and society occurs... (ibid, p. 50).

Specifically, Cutchin based his theory on Dewey’s transactional view of habit as shaping all human thought and action, that is, in turn, motivated by belief: change over time creates conditions that can no longer be approached out of usual habit. “Much of the purpose of transaction...is to functionally coordinate or re-coordinate relations for the benefit of the entities that constitute it,” (ibid, p. 52). Tension from doubt over one’s habits leads to creative thinking and new behavior. The design of place, according to Cutchin, conveys meaning through events, norms, rules and procedures or in the historical, political and cultural significance of built form. At the intersection of culture and environment, places of learning are “cultural landscapes,” “rich with symbolic meaning,” where the cultural and social meanings of place connect people, habitat and habit—in other words, the teaching environment communicates and shapes social norms and suggests customary ways of thinking, feeling and behaving that effect our well-being (Cutchin, 2007, p. 54).

Without understanding how, at least in part, the process of habits operates between the social and the individual through material places, we cannot really understand how we might concretely intervene to rehabilitate our affairs when things go wrong (ibid, p. 53).

Cutchin explained that people actively participate in habit formation and maintenance through the design of environment—and vice versa. Habits are “social tools,” both “ready to use” and “components of creative acts”; the creation of new habit is

facilitated as “people interact with each other in their transactions with ‘place’” (Cutchin, 2008, p. 52). Furthermore, environments are “laden with past habits that provide the matter for current habits...that are continuously in the making—a central part of the ongoing transactions that bind people, society and nature” (ibid, p. 57). Notably, Cutchin implies here that change in environment can render habits obsolete, or create conflicts between them such that one habit inhibits the performance of another: “we can intervene in places to improve them.... Changing place and landscape changes the social and, through that process, can positively influence habits...without rehabilitation of place and landscape, habits will continue as before” (ibid).

In a similar vein, Jordan (1998) employed a theory of perception that illustrates another dimension of Cutchin’s transactive view. From psychology, *coordination* refers to a position that an organism is seeking to realize, determined by information that it perceives in the environment. This information informs the individual’s progress and enables their ability to “adapt on an anticipated path towards an anticipated location” (Jordan, 1998, p. 181). Following Gibson’s theory of “direct perception,” Jordan posited that perception is an act of “information detection,” while *affordances* are “future possibilities” (1998, p. 181). Affordance considers the apparent (obvious) and plausible (potential) properties of something that would lead to its use, as Gibson (1979, p. 130) described it:

The *affordances* of the environment are what it *offers* the animal, what it *provides* or *furnishes*, either for good or ill.... I mean by it something that refers to both the environment and the animal in a way that no existing term does. It implies the complementarity of the animal and the environment.

Jordan’s premise was that perception does not come from phenomena *within* the environment, but rather from within an individual’s *need* to move through it: whether

affordances are detected therefore depends upon the individual's position. Not all people perceive their environment in the same way, highlighting the interdependence and interconnectedness of the individual in his or her environment (Heft, 1989; Van Lier, 2004). Affordances are not limited to objects—artifacts, places and events, for example, may also carry and communicate opportunities for interaction (Van Lier, 2004). In the sense described above, Jordan's definition of perception as "continuous coordination towards some goal" based on the perception of affordance—incrementally, purposefully, aligning action to achieve a future desired state—is a good illustration of the transactive understanding that came out of this study.

Cuchin's theory of "geographic pragmatism" (Cutchin, 2003) is the basis for understanding how the central category "transactive integration" emerged in this research. Concepts associated with "looking outside design" pointed to multidirectional processes that had the effect of the teaching environment becoming more than just a "container," a place where instructors teach and students learn (Cutchin, 2004). The understanding that emerged in this study was partially informed by the external engagement taking place in the participants' academic activities and how their views formed in these situations were incorporated into teaching practices in addition to influencing the norms of the programs. The subcategories "externalizing expertise," "constant tinkering" and "being a conduit" suggested an ecological view of the teaching environment that I came to understand as a multidimensional, multidirectional context for learning (Siemens, 2005).

Subcategories including "expanding perspectives," "establishing rigor," "generational thinking" and "bringing design to others" brought a transactional effect to the participants' collaborations, and furthermore, an ethical dimension appeared to be at work in these activities. Diverse interactions also proved to be transactional in that they enabled an appreciation for the "mutual dependency" in the participants' relationships

with others, that included the recognition of the limits of design expertise. Transaction was also found in processes of “mediating meanings” in interactions with students as much as it was found in interactions with colleagues. In the following quote, Spencer articulates how mediated discourse can become a catalyst for transactional (ex)change:

When our program started, we thought we’d be sharing abilities, but we didn’t. One of the big commitments we have as a faculty is that we all know that because we work together in this interdisciplinary program, we’re making students all of whom are better than we are. To me, that is the biggest sense of satisfaction I can imagine—because our students are able to synthesize things and get experiences that none of us on the faculty have—and that’s the way it should be.

In the situational approach to grounded theory, Clarke posited that, “...perspective dominates the interpretation upon which action is based. [This point of view] is relentlessly relational and ecological” (2005, p. 21). Definitions of *perspective* may be evoked here, as they suggest something important about Clarke’s statement. The *Oxford English Dictionary* offers three understandings that were particularly relevant: (1) *the relation or proportion in which the parts of a subject are viewed by the mind; the aspect of a matter or object of thought, as perceived from a particular mental point of view.* Specifically, the point of view itself as a way of regarding something. This definition highlights the specificity of the view point of the individual. Intuitively, it makes sense that the vantage from which a person is positioned to see determines what may be seen. The second definition that offers insight is: (2) *a mental view, outlook or prospect, especially through an imagined extent of time, past or (usually) future.* This definition suggests that perspectives exist in a particular moment in time. The third definition—while obsolete—is nevertheless pertinent: (3) *the action of looking into something, close inspection; the*

*faculty of seeing into a thing, insight, penetrativeness.* In this sense, perspective is insight—the process of envisioning.

In this research, the core subcategory “transactive perspective” became an approach to *looking*—a position from which to “see” and “seek” possibility through the identification of alternate avenues for accomplishing goals by purposefully changing existing habits, rather than *reproducing* them. Several concepts in the data supported the idea of “seeing” and “envisioning” in the participants’ transactional interactions. Transactive views facilitated the ability to find innovative venues for accomplishing objectives by re-envisioning usual approaches from a new perspective. Even though habits help us go about daily life without contemplating every decision, notably, habits also pose invisible barriers to change (Cutchin, 2008). The programs in this study appeared to navigate these barriers through the subcategories “having agency,” “see(k)ing provisionality” and “constant tinkering.” For obvious reasons, the design of environment is clearly contingent upon numerous internal and external forces. In this study, it appeared that, “The fewer and narrower are the rules, the more room there is for discretion, initiative, insight and innovation, contextual adaptations and functional variations” (Conner and Clawson, 2004, p. 33). Participants did not have to purposefully engage outside of their normal, everyday routines, nevertheless, new opportunities were able to arise naturally because of their established connections outside of their field and program. That they regularly identified the mutability in their situations was as dependent upon imagination as much as it was on their contacts and experience. “Low walls, no barriers” was a subcategory that became an enabler of agency, even while it was, at times, a source of frustration for the participants.

The understanding of agency arose from situations where (although they faced different kinds of problems that *could have* become barriers to achieving their goals) the

participants were able to—despite barriers—find creative ways of surmounting obstacles. For example, the amount of time and effort required to teach nontraditional competencies from an appropriate design point of view was a common contention in this study. Furthermore, the lack of flexible space and the rigidity of the academic calendar presented challenges to teaching beyond the purview of the typical design studio. Location in an environment with administrators and other colleagues who interpreted design differently than the participants was a reoccurring theme in the data of the programs.

In considering the institutional conditions that are necessary for successfully integrating new competencies into the teaching environment, participants mentioned criteria that included: collegiality; quality and intensity of participation among the full faculty; administrative support for professional development; and opportunities for pedagogical experimentation. What sort of effect do such “features” of the teaching environment have on a faculty’s “habit processes” (Cutchin, 2007)? Habits of isolation, distrust, competition, frustration, disenfranchisement and complaining—and the belief that no options exist, are “coping behaviors” reinforced in the way environments are designed (ibid, 2007, p. 56)

The subcategories “constant tinkering” and “seeking (and “seeing”) provisionality” arose from the need for a more flexible teaching environment, demonstrated in the ability of the participants to change courses of action in teaching practices and the norms of programs. This was done in terms that involved, as Joe explained, “engaging proactively instead of reactively.” Notably, the “ability to adapt” category was closely connected to “questioning current practice” (both of which were ubiquitous in the data of the programs), in that participants approached problems knowing, as Lynn described, “there is *always* a better way.” While it may be logical for readers to associate the idea of “agency” with a more ‘go-it-alone’ approach, the agency

demonstrated in this study did not counteract the interdependence that was core in the concept of “transactive integration.”

Teaching environments not only supported the activities and behaviors of students, but those of the faculty. Participants often described situations that required learning on their part, usually in collaborative contexts such as co-teaching, mentoring and research activities. External engagement was an opportunity for them to learn from different perspectives and mediate meanings about design. The complexity and interconnectedness of their daily work required participants to often exercise independent judgment and consult with others beyond the confines of discipline and program, crossing boundaries to do so when necessary. Faculty did not “do as they were told” or the minimum requirement of the job description. Instead, they operated on the belief, “If things are the same for too long, they need to be assessed, just because *things move*,” as Kathy (Program 1), Lynn (Program 4), Joe (Program 3) noted. Jennifer (Program 2) further explained, “We move, the students move, the world moves, technology changes—when I visit an undergraduate program and see that they’re still doing eight-inch squares, I think, ‘*What* are you doing—and *why?*’”

The “ability to adapt was also connected to the ability to see—and seek—provisionality in a situation. Their ability presented approaches to teaching and working as academic designers that were not limited to how the participants functioned in a program; approaches were integrated into other areas of their work that extending outside the institution—to activities involving external engagement within the design field and beyond. Participants were able to circumvent policy (and establish new policy), break out of the semester-course structure, bend the academic calendar and align courses and credit structures to achieve teaching goals—e.g., the creation of opportunities for co-teaching, the establishment of a professional, collaborative studio culture of “being there,” the

development of rigor in coursework and the admission of non-majors in studios and seminars.

Participants often employed analogies to describe perceptions and practices that helped organize their meanings with “transactive integration” in mind. As a “way of seeing” and a “vehicle for thought” (Larsson, 2003, p. 154), their metaphors enriched the view of “professional identity” as a concept that was understood in “generalist terms.” Metaphoric expressions in this regard included “shooting from the hip,” “working without guidelines,” “charting new territory,” “operating on the fringe,” “crossing boundaries” and “going against the grain.” The first two examples demonstrate transactive contexts, as the participants who used them (Jill, Sarah, Alan, Amy, Bill, John) did so as a means of solving problems related to procedures and policies that were nonexistent in their programs. Other metaphors were used to describe professional identity in the context of “distancing” and in other situations involving tensions related to teaching nontraditional competencies. Despite the independent (as opposed to an interdependent) tone of these subcategories, participants were able to move beyond their habits and adapt new ways of seeing, thinking and doing that were beneficial for both faculty and program.

Participants also spoke of teaching philosophy, teaching practice and understandings of design using spatial and ecological metaphors. Spatial processes in this study included “seeing the big picture,” “getting a broad range,” looking “holistically,” “thinking generationally” in “long time horizons,” operating at a “systems levels,” cultivating “diversity” and “focusing on the future.” Such metaphors were especially useful in connecting the ability to adapt with the subcategory “seeing provisionality” and other processes of anticipating, defining and preparing students for change in the conditions of practice. Participants had a clear sense of where their own institution was going and a solid understanding of institutional priorities and long-term commitments. As people perceive

and interpret their environment scaled to their position (Jordan, 1998), it made sense that expansive and more holistic “big picture” perspectives are the most productive for “see(k)ing provisionality” and anticipating and interpreting change in the environment.

Notably, most views of the teaching environment were informed by looking at a situation from an expansive vantage point. “If you don’t see the large picture, the way design fits in the society,” Robert explained, “it becomes less interesting. I want [students] to experience the way they fit in the big picture.” Another illustration of “transactive perspective” was demonstrated in situations where participants were involved in design discourse at the national level, where they were often found guiding the direction of the field through “mediating meanings.” A wider engagement was a powerful scale from which to work and proactively “make change happen,” as Bill (Program 1) and Joe (Program 3) noted.

This study found participants deeply concerned with the needs of their constituents, expressing an accountability of design education to more than just student, program and field. Their considerations led programs to become better coordinated with multiple collaborators as well as potential and unforeseen stakeholders—a condition that related to the core subcategory, “transactive alignment.” In the meanings of the participants, “transactive alignment” is defined in this study as evolving, incremental change to curricula, coursework, projects, practices, policies, methods and procedures, etc., in order to better coordinate with the broader field. Revealed in strategies of regular assessment, the willingness to learn from colleagues in co-teaching and collaborative partnerships, and setting aside time for reflection as a faculty body, “transactive alignment” appeared to be the means by which programs gained (and maintained) their flexibility and their ongoing adaptive behaviors.

Transactive integration was identified as the core category after considering the effect that maintaining a “future focus” had on each program. The state of transactive perspective required keen awareness of the dynamics and meanings in the broader environment of the programs. Their knowledge of the wider context was revealed through several expressions, as Mark explained the context of Program 4, “It’s as if practice, and ways of thinking and ways of seeing, are assuming their own definitions—pulling away from traditional disciplinary categories.” The effects of transactive alignment on approaches to change in the conditions of practice was demonstrated in Kathy’s (Program 1) use of metaphor that found graduate programs “becoming a conduit for things to flow through.” The conduit metaphor was understood as a way to keep the design field “vital and healthy,” thus revealing the relationship between sustainability, professional accountability to others, and the purpose of graduate study in design.

As an integrative process, “transactive alignment” was notable in the participants’ academic activities and teaching practices. The subcategory “constant tinkering” was a part of each programs’ common goal of building a diverse, flexible infrastructure that could respond to change. Flexible structures in curricula, course objectives and pedagogy, as well as rules and policies, enabled the programs to not only “change on a dime,” but to “experiment with teaching,” “work with collaborators on diverse terms” and “respond to what’s current.” Their “constant tinkering” was not in lieu of, or in contradiction with, the participants’ more holistic approaches from a “big picture” perspective. Rather, the two different vantages appeared to complement one another.

A notable effect of “transactive alignment” was demonstrated in the concept “practicing what you teach.” The academic activities and teaching practices of participants mirrored their student learning objectives at each program. Mirroring became an interesting theme in the primary category “transparency” as it related to learning

objectives that addressed “comfort with ambiguity.” Spencer (Program 1) found that, “You can’t teach design if you’re not good at and very comfortable with managing contingency, because you never know what people are going to produce. So you have to be able to think on your feet immediately...to keep the reflective and the refinement processes moving ahead.” Joe (Program 3) found “comfort with ambiguity” as a way of teaching by “demonstrating habits of mind.” “I’m comfortable teaching so I can tolerate a high degree of ambiguity,” he explained, and for students, “it’s not about ‘Are we doing this correctly?’” My comfort with ambiguity, I think, allows them to learn.”

The transactive processes described in this study resulted from teaching environments that established goals, values and objectives that were not in conflict with each other. As Bill, Jeff, Jill, Joe and Jason, among others, explained, “Because it happens at the faculty level, it happens at the student level.”

#### **4.8 Summary of the Emergent Categories**

The preceding discussion of the emergent categories and their relationships, properties and dimensions, demonstrated “transactive integration” as a prominent approach to the design of the teaching environment. Transactive integration was understood through “mediating meanings” and “external engagement” that took place in the participants’ exchanges. External engagement facilitated processes that enabled faculty to understand—and generate understandings—about the design field from a perspective that enabled program alignment with the broader field.

The *in-vivo* code “looking outside design” was crucial in that it revealed multidirectional patterns of activity that had the effect of the teaching environment as being integral to the participants’ transactive learning experiences. “Looking outside design” led to properties of “mediating meanings” and “transparency,” as well as pointing

out the interconnectedness of the emergent categories—it brought about the consideration of “transactive integration” as a way of understanding the different processes taking place in each program’s approach to the design of the teaching environment. These understandings revealed “transactive integration” as a social and spatial process whereby programs, faculty and students work in partnership towards a goal of alignment in the anticipation, definition and preparation of students for change in conditions of practice.

## **Chapter 5: Transactive Integration—Conclusions & Implications**

### **5.1 Introduction**

The final chapter of the dissertation is aimed at further addressing the research question and subquestions that guided the study and the emergent grounded theory. It begins with a presentation of the integrated grounded theory and concludes with suggestions for further research as well as reflections on the implications for design education and future interventions by design programs.

The study analyzed data from in-depth interviews, existing documents and observational field notes to understand an array of issues related to the ability of graduate design programs to prepare students for change in the field. Findings demonstrated the importance of the design of the teaching environment, and revealed a primary goal in its design should be to enable behaviors and practices that promote learning and positive outcomes for instructors as much as for students. Doing so benefits not only design programs and their communities of learners, but the wider profession. As an organization, the design school is more than just a physical place for teaching and learning: it is a social environment that provides situations for participation, sense-making, coordinated action, and the adoption of tools, technology and language. From this view, the teaching environment is not passive: teachers and learners shape the environment, and it shapes

them (Cutchin, 2008). Teaching, learning and the instructional setting are not designed around collaboration and interdependence, but isolation—of individuals, disciplines and subjects (Tompkins, 1996; Heider, 2005). Noting systemic isolation in the educational system in a chapter entitled “Waste in Education,” Dewey (1902) wrote:

...the great waste in the school comes from [the student’s] inability to utilize the experiences he gets outside the school in any complete and free way within the school itself; while, on the other hand, he is unable to apply in daily life what he is learning at school. That is the isolation of the school—its isolation from life. When the child gets into the schoolroom he has to put out of his mind a large part of the ideas, interests, and activities that predominate in his home and neighborhood.

Studies of academic culture provide insight into academic work and the cultures influencing that work, but there is little understanding of the design of the teaching environment as having an influence. This study found that teaching environments need to become more flexible and provide avenues for diverse external and internal interactions, while aligning effectively with the broader conditions of design practice.

## **5.2      *Transactive Integration and Related Theories***

Learning is vital to the perception of affordance (Gibson, 1966). The theory that emerged in this study is that teaching environments should be designed to provide individuals with more diverse networks of external engagement that enable them to learn new habits of see(k)ing (anticipating), thinking (defining) and acting (preparing students)—with the ongoing process of “transactive integration” enriching learning as a transformative experience. The key to the design of environment lies in taking cues from the immediate learning community and the wider field of practice from a holistic view (Van der Ryn and

Cowan, 1996). Holistic design assumes an ecological perspective that is a *cultural* process rather than an *expert* one (ibid). From the transactive approach that emerged in this study, a model of design using a functionalist view will not work—neither would an aesthetic model emphasizing form. What is required is an approach that can be used, that has meaning and whose meaning can be changed. Environments communicate affordances for interaction in several ways: the shape of a room and the position of furniture and people are obvious considerations. Other aspects, such as the ability to convert space for multiple use or emergent interaction, are not as clear. Less obvious are the ways in which long-standing norms and policies affect an individual’s ability to perceive affordance and respond. Figure 5.1 represents the transactive processes that emerged in this research.

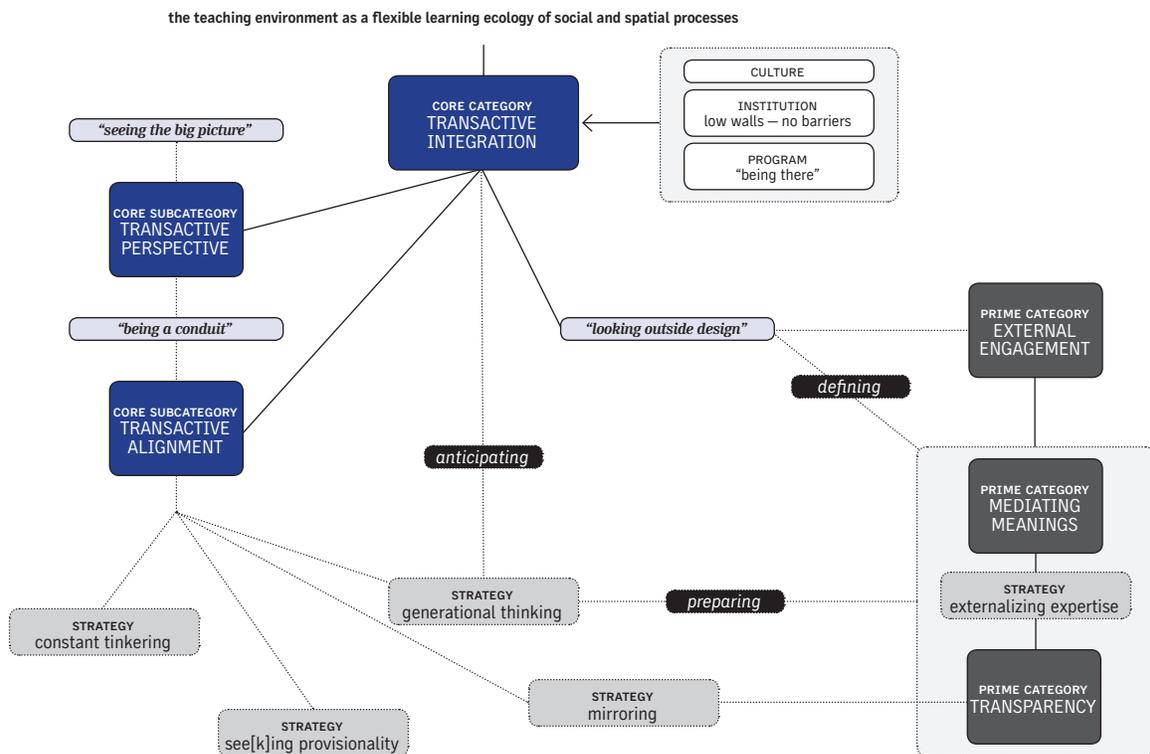


Figure 5.1 Relational elements of the core category “transactive integration”

This study revealed that faculty perceived their ability to engage in certain practices and interactions as a result of program culture through the design of the teaching environment. The values of program culture expressed in the participants' descriptions of their teaching strategies focused on behaviors that facilitated the integration of nontraditional competencies. Language was the feature of program culture most often mentioned as contributing to the participants' success. Engaged participation through a "culture of 'being there'" required the contribution and expression of new ideas, engagement with non-design discourse communities and clarity in communication. Each of these actions were important factors leading to transformative learning, affecting the ability of the participants to perceive affordances and overcome barriers to change. Professional ethics, transparency, flexibility, and a culture of "being there" were standards included in a program's strategy regardless of intention or situation. As Cutchin (2008) proposed, the design of environment is the design of a system of habits, where environment presents affordances and communicates meaning through the places wherein habits are produced, understood and transformed. The program teaching environments in this study were outwardly looking and socially engaged places of learning.

The idea of "perspective" became a notable theme in the data, as it captured the participants' approaches to their varied pedagogic situations with a transactive view. Teaching environments might not have been as supportive if the programs took a singular approach to their design—i.e., revising an assignment, instituting a policy, introducing one course into the curriculum. Instead, change was enabled when a "big picture" was considered—one that accounted for the interdependence and interconnectedness of space, technology, organization and pedagogy, as each of these dimensions was aligned to an underlying objective that was clearly defined and communicated with a vision of *future* practice.

The high degree of value the participants placed on their interactions with diverse disciplinary communities was an example of program culture in this study. Furthermore, the development of a culture of “being there” was extended to all individuals—faculty, students, staff, administrators, among others. The theory proposed in this study demonstrated that when faculty become informed about issues that are important to programs and the wider institution, they become deeply engaged as advocates for the field and the community.

Participants approached the design of the teaching environment with the same degree of commitment to their own learning as they did for their students—demonstrated in the number of activities inside and beyond the individual program. Faculty substantially benefit their teaching, program and professional field when provided with better opportunities to mediate between external and internal contexts.

From the data emerged dense, multidirectional interactions that were embedded in processes of “mediating meanings.” These processes were a matter of “crossing boundaries to make projects work,” while concurrently understanding the benefit of “learning from colleagues.” The interaction between the external and the internal was a notable aspect of this research, as demonstrated in Kathy’s (Program 1) analogy that:

Living systems are always open systems, which means they have to be in a constant exchange of energy and matter with their environment, or they die. Like our bodies, if we aren’t taking food in and putting excrement out, we’re gonna die. So it’s that exchange, becoming a conduit for things to flow through, that keeps us vital and healthy.

“Future focus” became an important category in that each participant expressed genuine concern for the future of the design profession. The role of design education to constantly question and imagine where the field is now, where it could go, and how it

*should* develop, was a constant presence in the data. Kathy’s personal experience with running a design business, knowing that professionals “can barely think about next week, let alone ‘Where’s the profession headed?’” brought her to the awareness that:

For [design’s] own welfare, [the field] has to make time to think in longer time horizons. [We] could connect almost every wicked problem we have right now to humans thinking in incredibly short horizons of time.

Participants also took a long-term view of the trajectory of their students’ careers. Strategies for managing change in practice included educational experiences that would produce designers who could “externalize expertise” in a way that carried the potential to move design towards a more sustainable vision of future practice.<sup>22</sup> An awareness of how students entered and experienced the profession served to remind participants that the future experiences of their students were intertwined with the purposes of their programs. This awareness resulted in their ability to commit themselves to a long-term focus and take initiatives beyond their immediate spheres of responsibility and concern. Spencer summed up the interconnectedness that came to define this awareness:

The secret of education, and of staying vital, is working against the grain of how our brains work. The reason it’s impossible to be a good parent—and why it’s impossible to expect your kids to listen to you fully—is because no matter how much advice you give them, they know you’re always giving intuitive advice in the future, as you understand it; there’s no way you can understand the future they understand. What’s really tough about education is to continually think about the future they’re facing—and if you don’t, you will just lose your relevance.

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<sup>22</sup> *Sustainable* in this context is not concerned with the preservation of environmental resources. Rather, in this instance, sustainability is specific to the *sustainability of the profession*—participants often expressed thinking and planning that had the goal of ensuring the design profession remained viable, relevant and able to thrive in the future.

This exchange illustrated an approach to teaching that was indicative of the participants in this study—a courtesy that was extended to students as much as to professional colleagues.

The design school is the setting where students are given insight into relationships that will define their view of the profession and shape the field “for the next forty years,” as Jill argued. Preparing designers to take on the responsibility of a “future focus” requires the “transformation” of students through “developing their capacity to critically reflect on their beliefs and be open to the perspectives of others” (Sullivan, 2005, p. 16). Transactive integration therefore included an awareness of the present and future interconnectedness that the participants described. The category “see(k)ing provisionality” was also connected to the central category in that it suggested in many ways the effects of choice, agency and resilience.

It was in the context of “external engagement” where the transformative potential of an awareness of non-design practices came into play, where participants expressed the value of being exposed to diverse perspectives—for students (as future professionals), and for themselves (as educators). Exposure came from a range of sources: colleagues within and beyond the program, members of different communities of practice and general publics, stakeholders, students and design audiences.

Program cultures placed great value on “diversity” through seeking “hybrid backgrounds” in faculty, students and exposure to diverse disciplinary perspectives. The goal of seeking diverse perspectives and backgrounds was a necessary condition that engaged programs, participants and students in transactional exchanges that were conducive to developing new insights and learning through the lens of interdisciplinary perspectives. One consequence of building these relationships was more reflection in the participants’ approaches to teaching and “cross-cultural communications” (as Lynn called

them). The rewards of engaging in deliberate reflection are important. Notably, Dewey understood reflective thinking as an essential tool that enabled educators to direct their activities and plan effective courses of action with appropriate ends. According to Dewey, “Reflection converts action that is merely repetitive, blind and impulsive into intelligent action” (Dewey, 1964, p. 211) Careful consideration of language (in mediating meanings) came about through the participants’ desire for precision and clarity in communication with others.

Participants emphasized the constant change in design skills and knowledge as much as they stressed the need for education to prepare students for professional success in a rapidly changing field. They found that “looking outside design” carried dispositions and habits of mind that were necessary for becoming lifelong learners. “Looking outside design” was supportive of their beliefs and aided in the development of frameworks that were appropriate from a design perspective as well as by researchers in other disciplines. “Looking outside design” is further espoused in the views of Chen et al. (2008, p88): “When the perspectives of a variety of boundary spanners are introduced, learning becomes richly embedded in the infusion of the constant comparisons of differences which emerge from spanning multiple communities of practice.” In conversations with collaborators, the participants discussed and reflected on their values and habits with an appreciation of transactional experiences that included the understanding that, “What we share is not as interesting as what we don’t share” (Bender, 1998, p. 190). Spencer succinctly summarized transactive exchange as a result of questioning current practice and deliberate reflection:

Our job is to bring design thinking to other people, but their job is to help us understand how design thinking matters. If you’re only talking within the tribe, you can’t really test how design thinking is going to matter—and even

worse, you can't even make design thinking explicit, because if everybody can do it, there's no interest in trying; it just becomes inefficient to try to make it explicit. So it's much more fun to talk among people who have real problems, but don't have design knowledge, because then you really have to rehearse if you know what you're talking about.

### **5.3      *Suggestions for Evaluative Guidelines***

The premise of this research was that an in-depth understanding of approaches to teaching nontraditional design competencies—informed by an account of academic culture and beliefs about professional identity, including program constraints and opportunities—could potentially support other faculty and design stakeholders in the development of guidelines for designing effective instructional settings. This section outlines several key points derived from the study's findings.

At a basic level, graduate programs can identify the extent to which their own cultures are (and are not) aligned with their existing missions, values, rules, norms of policy, learning objectives and current pedagogic practices. To what degree are their cultural characteristics aligned and integrated with the four dimensions of the teaching environment—the organizational, pedagogic, spatial and technological levels? Programs in made certain commitments—often with meager resources—knowing the impossibility of trying to “be everything to everybody,” as Kathy, Jill and Lynn put it. Prioritization of goals and the coordination of missions, values, curricula and resources enabled programs to do what they do—teach at the *graduate* level—extremely well. In planning teaching environments suitable for preparing designers at the graduate level, several key elements concerning the commitment of resources had the potential to affect a program's ability.

(1) **faculty:** Graduate study is different than education at the undergraduate level.

Building graduate curricula from existing undergraduate courses, and simply assigning additional assessment criteria for the Master's students, does not equate to graduate work. Graduate programs require a dedicated core of qualified, full time faculty that not only provide leadership and vision for a program; dedicated faculty are necessary for establishing the kind of interdisciplinary and external relationships demonstrated in this study. Introducing interdisciplinary content and research methods into the curriculum hinges upon credentialed faculty who are qualified to teach that content. Faculty and administrators need to consider: How do rules and norms enable or inhibit working with experts from outside the program and field, including hiring decisions and policies, norms of selecting, inviting and working with external guest speakers? Similarly, how do program rules and norms affect the faculty's ability to make available technological resources for long distance collaboration?

(2) **students:** If graduate programs seek contributions from students with training in other disciplines, the findings in this study reveal the importance of "cross-cultural communication" and building value for nontraditional, or atypical content that enters the curriculum. Furthermore, students without undergraduate design backgrounds require extra support to ensure that their "hands can keep up with their minds," as Robert and Jill suggested. In this regard, programs that wish to recruit these students can ask, What criteria should be used in determining which students from have the most potential to be successful graduate level design—i.e., beyond the design portfolio, what else can be assessed to determine acceptance? At a more general level, the findings in this study reveal the importance of establishing clear criteria that align with a program's understandings of professional practice. What type of students does a

program attract—and, in turn, which types of student should be recruited to enable the program’s vision of future professional practice?

(3) **curricular structure:** This study demonstrated the need for graduate programs to organize graduate degrees around a flexible curriculum that has the ability to respond to trends and unforeseen changes in the field of practice. Clearly, the ability to change course content and drop or add coursework has an impact on curricular flexibility.

Educators can ask: How do program rules, norms and policies that deal with curriculum approval enable or inhibit its flexibility? Who should be appointed to the curriculum committee responsible for this approval? Additionally, how can the credit structure meet the needs of curricular adaptation and innovation?

(4) **integration of nontraditional competencies:** Important consideration include: what kinds of outcomes are the result of coursework—i.e., in terms of nontraditional competencies, what should be identified as an outcome of project assignments? What resources are necessary in teaching new competencies (e.g., literature resources? faculty resources? spatial and technological resources?) While most participants felt that the nontraditional competencies were important to the designer’s work and expressed values that reflected that belief, they also indicated the difficulty of managing learning activities between students and external stakeholders. If understanding research from the perspective of other disciplines and collaborative skills are necessary for design professionals, this study demonstrated that these competencies are skills that should be taught—and integrated into all learning objectives. Furthermore, the findings indicate that explicit instruction in nontraditional skills may be desirable early in the curriculum in order to prepare graduates who can effectively work in a professional setting. If nontraditional competencies are to be included, it is beneficial to introduce concepts early in the curriculum—as a natural part of the design process—because most

students have yet to learn how to use the findings of research or work effectively in interdisciplinary group. Giving students frameworks for learning how to use nontraditional competencies may, in turn, enhance their enjoyment of these activities.

#### **5.4 *Suggestions for Further Research in Design Education***

This study investigated the interaction between academic culture, professional identity and the design of the teaching environment by examining instructor perceptions of their own approaches to teaching nontraditional competencies within graduate level design programs. Based on the findings presented in Chapter 4, a substantive theory of transactive integration was proposed. As a middle-range theory, it is an appropriate standpoint from which to pursue further investigation (Corbin and Strauss, 2008). Several ideas come to mind for future research. While the difficulty in gaining an understanding of the culture of a design program through the analysis of its teaching environment cannot be overstated, it is a profitable endeavor, according to Schein (1985, p. 147):

Even if we begin to have an intuitive understanding of an organization's culture, we may find it extraordinarily difficult to write down that understanding in such a way that the essence of the culture can be communicated to someone else. We have so few examples in our literature that it is even hard to point to models of how it should be done. But when we see the essence of a culture, the paradigm by which people operate, we are struck by how powerful our insight into that organization now is, and we can see instantly why certain things work the way they do, why certain proposals never get bought, why change is so difficult, why certain people leave, and so on. Few concepts are so powerful in the degree to which they help us decipher what may be a very opaque area. It is the search for and the

occasional finding of this central insight that make it all worthwhile.

Suddenly we understand an organization; suddenly we see what makes it tick. That level of insight is worth working for, even if, in the end, we can share it only with colleagues.

Davis (1998; 2010) argued that how faculty teach design has as much effect on a student's perception of a design problem and the development of problem-solving strategies as what is taught. Studies of the experiences of other programs in the process of change—especially over longer periods of time, could help build a deeper understanding of how the teaching environment influences design pedagogy, learning and the perception of affordance from a transactive view. Even though different academic contexts were represented in this research, more studies are needed that explore the role of undergraduate education in transactive relationships with graduate and Ph.D levels. An investigation of transactive processes between academic and professional contexts that examine anticipating, defining and preparing students for change in design practice could help the field proactively transform, rather than simply react to change after it occurs.

The use of technology was a notable approach in each program's teaching environment. Participants understood technology as an affordance for learning through reflection (Dewey, 1933; Schön, 1989) that influenced academic culture in a positive way and enabled a richer pedagogic experience for the participants. Studies have shown that an understanding of technology only as a means of "information retrieval" reinforces isolation in both teaching and learning (Johnson, et al., 1999). Ihde (1993), however, supports the idea that technology is a way of seeing, doing and being in the world—a habit, as Cuchin (2008) might describe it. In this study, social media and other technologies were used in ways that became transformative for faculty as much as for students. Traditionally, the teaching environment does not support the integration of technology for design learning

and pedagogy. More investigations could provide an understanding of transactional relationships between technology habits and the design of the teaching environment or, similarly, between the design of physical and virtual environments. Other studies could, in turn, investigate how transactional exchanges among different communities are cultivated and sustained through social networking, wikis, blogs, and other social media.

Gibson asked why people change the form and substance of their environment: his answer was “to change what the environment affords them” (Gibson, 1979, p. 130). Data suggested that the teaching environment of each program was a venue for faculty to participate in diverse networks of external engagement—its design was supportive of their need to learn. Existing studies of learning in design education, while few, mostly address the experiences of students. Seldom do we acknowledge that design educators need their own learning situations in order to enrich their academic activities. More investigations into the benefits of faculty development may shed light on new learning situations that benefit the full career span of the design educator. Additionally, studies could be done of different learning models, such as situated learning, distributed learning, apprenticeship and mentorship (Lave and Wenger, 1991; Wenger, 1998; Oblinger et al., 2001) to understand how research grounded in a transactional perspective supports habits of lifelong learning for all.

### **5.5 Conclusions: Implications for Design Education**

Quoting the developmental psychoanalyst Erik Erikson, Lee Shulman wrote, “If you want to understand a culture, study its nurseries,” and “if you wish to understand why professions develop as they do, study *their* nurseries” (Shulman, 2005, p. 52). The strength of the influence of program culture on the ability to anticipate, define and prepare students for change in design practice as reported by the participants was a surprising result that

emerged from this investigation. The picture of program culture drawn from the data was that of an interconnected network of multidirectional social and spatial processes. The identification of culture as an interconnected process is not a new concept, however, it does not appear to be a topic that has been explored substantially from a theoretical perspective. Therefore, the description of program culture represented in this study is an interesting contribution to the exploration of the complex concept of culture. Undertaking a study of academic culture in graduate design programs also demonstrated the important role of empirical research as a means of renewing design education and professional practice (Corbin and Strauss, 2008). The role of research in understanding the culture of design and shaping the future of design education is further supported by educational scholarship that has theorized there are limits to the growth of any discipline based on its present knowledge—and that isolation of a disciplinary community is not possible in times of uncertainty (Sullivan, 2005).

The onus of advancing design is a joint responsibility between professionals and professional schools that demands high ethical standards—even in uncertain situations. This study revealed that an adaptive, forward-thinking and socially engaged discipline learns from different perspectives, respecting the cultures it works within while seeking to understand its own. Design's emphasis on teaching and learning by application requires a partnership that is committed to working across cultures. Such a commitment is not just a pedagogic issue—it relates to how design education and design subjects are perceived and valued outside of the academy. Concurrently, if education is to be a partnership with an ethically-oriented profession, the design activity must be framed as a social good with a commitment to social ends. Research in ethics suggests a relationship between a profession's understanding of the needs of its constituents and the ability to establish a workable plan for future action (Sullivan, 2005). Design is faced with numerous challenges

to its relevancy as a socially engaged, ethical and future-focused field. Challenges include individualistic approaches to instruction and an inadequate, one-dimensional understanding of practice.

As a place that communicates the norms of designing and influences the perceptions of professional identity, the culture of the teaching environment transmits values and expectations for desired behaviors. Unfortunately, there are individuals who promote the idea that clients disregard, or do not understand, the role of design. The romantic ideal of the “creative genius” ennobles an attitude of disdain for some design work—particularly commissions arising from corporate industry and advertising. This same ideal also commends the outright rejection of business clients with commercial interests on the grounds of its categorization as a compromised and tainted mode of practice.

The culture of the teaching environment, through studio discourse and practice, can create contempt for clients, users and audiences—or any others who respond critically to the designer’s solution. In projecting such values, students learn to begrudge the service commitment that, ironically, defines “what it means to be a professional” (Sullivan, 2005). The status of “profession,” however, is not simply determined by individuals in a given field. The ability—and the right—to exist as a profession is fundamentally a social contract with those whom the professional serves. Tellingly, Shulman, following May, suggested that when a profession becomes marginalized, it is typically due to the neglect of the service responsibilities that society has traditionally regarded as being important (Shulman, 2005). Design education has a responsibility to improve the student’s ability to confront change in both professional and social conditions of practice over the long term. Sullivan further contended that current opinions of professions portended a shift in cultural views that rendered professional status from “trustee” to “technical expert” (2005,

pp. 8–12). Negative attitudes were attributed to a weakening idea that reduced professional claims to the purely technical.<sup>23</sup> Indeed, Sullivan’s claims suggest that unless professional ethics are prioritized in the curriculum, design could become a field of highly competent, but ethically ignorant professionals.

Participants brought valuable insights, providing a rich perspective on the nature of learning and the institutional conditions necessary for learning to thrive. Learning does not simply happen; it is an active process that individuals *make* happen—and it requires change (without change there is no learning; without learning there is no change). An approach to change in design education does not have to arise from individual effort or institutional mandate. It can be achieved by presenting new ideas and having the commitment to continuously reevaluate present visions of future practice. Notably, participants created situations that facilitated transformative learning—even for long-time veterans, insofar as dramatic shifts happened in long-standing and comfortable habits.

Finally, it is important to note that service is a quality of a good leader. Findings identified an important role for design education in developing a sustainable vision of future practice—most professionals and academics would agree that education is the future of the profession. The challenge is to develop thoughtful, convincing arguments for what design brings to a situation beyond clichés of styling and group facilitation. Design programs can take the lead in shaping an ethical view of professional responsibility by demonstrating what is implied for the design field in becoming competent beyond “technical expertise” (Sullivan, 2005). By projecting a socially engaged, informed and ethical profession, design programs can articulate the kind of transformative narratives that the field still needs.

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<sup>23</sup> Sullivan’s (2005) example of the shift in the opinions of professions was from the field of accounting in its unprofessional behavior during the investor scandals of the 1980s and 1990s. He attributed the practices that led to the scandals to values that were initially instilled in most leading business schools.

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## **APPENDICES**

## APPENDIX A: INITIAL DEPARTMENT HEAD CONTACT EMAIL

Dear [Department Head Name],

I'm writing to seek your interest in taking part in a study of innovative curricular and pedagogic practices in leading U.S. graduate design programs. The inquiry is directed toward understanding relationships among emerging educational practices, the teaching environment and convictions about design: e.g., the skills required for students entering design fields, sources of knowledge, relevant non-design disciplines, and the role of the designer in the design process. Specifically, I am focusing on three educational practices regarding: **1)** design research methods, **2)** non-design disciplinary knowledge and processes, and **3)** frameworks for student collaborations in the course of studio projects. Although they have been identified as important design competencies, few graphic and interactive media design schools emphasize these topics in their curriculum. [Name of Program] is a notable exception. With Meredith Davis as my committee chair and academic adviser, I am conducting this study as a part of my research in the Interdisciplinary PhD in Design program at North Carolina State University.

### What participation will involve from you and your department

- An initial conversation with you (approx. 30 – 45 min.) via phone, Skype, or email
- A series of open-ended interviews\* (see below) with graduate faculty (identified with your help)
- Assistance with collecting information about the program, the curriculum, course syllabi, student handbook, etc.
- Permission to visit the school in the Spring 2010 semester (approx. 1–2 weeks) and observe classes relevant to the study

I want to emphasize this study is not intended to elicit any information about the personal – as opposed to the academic – lives or opinions of participants. Nor is it an evaluation of your specific program. With your help, this study will benefit design by building new knowledge for the field, and providing in-depth understanding from the design faculty perspective about the changing nature of contemporary professional practice – and what shifts in practice may imply for design education in the future.

Attached (fyi) you will find the “Agreement to Participate” form. **You do not need to sign it right now**; it is attached for your reference. I sincerely hope you are interested in taking part in this study. Please kindly respond regarding your interest at your earliest convenience. If you have any questions about the study, please feel free to contact me. You are also invited to contact Professor Meredith Davis [**phone, email**].

I look forward to speaking with you soon,  
Deborah Littlejohn  
Phone: (919) 802 6077

\* I estimate interviews with faculty will require about 60 – 90 minutes via phone, Skype, or email. Although unlikely, it is also possible that a follow-up interview may be necessary, as agreeable with each individual.

## APPENDIX B: FACULTY CONTACT EMAIL

Dear [Design Faculty Name],

This is Deb Littlejohn following up on the [insert date] email from [dept head name] regarding your interest in taking part in a study of graduate design education. The inquiry –of which I hope the proposed discussion with you would form a part – is directed toward understanding relationships among educational practices for emerging competencies in design, the teaching environment of innovative graduate programs, and collective beliefs about the design field. I'm requesting an hour–90 minutes of your time to meet individually for an interview, [if applicable] and if I may also visit specific graduate courses pertinent to the study while I'm on campus this semester from [insert dates]. Interview questions will cover topics related to what you think are the 'pressing issues' for students entering the design field; the changing roles of designers; where understandings and influences about the field come from; what are the skills and knowledge students need to be effective in contemporary practice, etc. I'll also ask questions about the research, interdisciplinary, and collaborative competencies; how you define these competencies in the context of design practice and your approach/philosophy regarding how you teach them. If you would kindly respond at your earliest convenience, I'll contact you next week about possible times that fit your schedule.

Please do let me know if you have any questions or comments about the study. You are also invited to contact Professor Meredith Davis, my committee chair and adviser [phone, email]). I look forward to hearing from you soon, by phone or email, and thank you in advance for your time and consideration ,

Deb Littlejohn  
[phone, email]

### **Brief description of the project:**

***Anticipation and Action: Pedagogy, Culture and Change in Design Education*** (Working Title)

Design is a profoundly changing field of practice and discipline of study. Economic, social and technological trends have given rise to a different set of competencies that bring much to bear on the designer's traditional knowledge and skills. One of the most critical issues for design education is how to devise adaptive strategies for curricular and pedagogic practices that are reflective of the opportunities and sensitive to the challenges of changing roles for design and designers. This qualitative study will explore how several leading graduate design programs anticipate, define and act upon changes underway in the design field and uncover the contextual relationships that support their strategies.

Three closely related competencies provide the impetus for my inquiry: 1) the ability of designers to understand people and contexts for design through evidence-based research and empirical-analytic methods; 2) the ability of designers to interpret and utilize interdisciplinary knowledge; and 3) the ability of designers to collaborate in multidisciplinary teams. Concerned with curricular and pedagogic practices associated with these transformative competencies in the context of interaction design and visual communication, the purpose of inquiry is to build a theoretical understanding of the relationships between academic design culture, curricular innovation and the particular circumstances of the teaching environment in which instruction takes place.

Please note that I do not intend to elicit any information about the personal – as opposed to the academic – lives or opinions of participants. Nor is the study evaluative of your program or particular course. With your help and expertise, this study will benefit design by building new knowledge for the field and providing an in-depth understanding from the perspective of design faculty about the changing nature of contemporary practice – and what these changes may imply for design education in the future.

### **Courses to visit\***

**[LIST OF THE FACULTY'S RELEVANT DESIGN COURSES IF APPLICABLE]**

Courses were chosen from listings on [name of school] website. Please note that my visits to your class are in no way evaluative. I want to get a sense of the class, the kinds of projects assigned, and a sense of the studio/space and how it is used for instruction. I also want to find out, if applicable, how digital/networked technology is put to use in the class (through interviews as well as class visits). As soon as convenient, I hope it will be possible to obtain a copy of your syllabus, course outline/description, and planned assignments. These materials will help me prepare for my interview with you.

## APPENDIX C: IRB PERMISSION LETTER

North Carolina State University is a land-grant university and a constituent institution of The University of North Carolina

**Office of Research  
and Graduate Studies**

**NC STATE UNIVERSITY**

Sponsored Programs and  
Regulatory Compliance  
Campus Box 7514  
2701 Sullivan Drive  
Raleigh, NC 27695-7514

919.515.2444  
919.515.7721 (fax)

From: Debra Paxton, IRB Administrator  
North Carolina State University  
Institutional Review Board

Date: March 15, 2010

Project Title: Anticipation and Action in Graduate Design Programs: Building a Theory of the Relationships Between Academic Design Culture, Professional Identity, and the Teaching Environment

IRB#: 1220-10

Dear Ms. Littlejohn and Dr. Davis:

The research proposal named above has received administrative review and has been approved as exempt from the policy as outlined in the Code of Federal Regulations (Exemption: 46.101. b.2). Provided that the only participation of the subjects is as described in the proposal narrative, this project is exempt from further review.

NOTE:

1. This committee complies with requirements found in Title 45 part 46 of The Code of Federal Regulations. For NCSU projects, the Assurance Number is: FWA00003429.
2. Any changes to the research must be submitted and approved by the IRB prior to implementation.
3. If any unanticipated problems occur, they must be reported to the IRB office within 5 business days.

Sincerely,  
Deb Paxton  
NCSU IRB

## APPENDIX D: INTERVIEW GUIDE

My study examines how faculty make sense of and act upon change in design fields—esp. (currently) the shifts related to emerging research methods in design, interpreting and using interdisciplinary knowledge to inform design decisions, and skills related to working collaboratively in teams made up of non-design professionals as well as user or audience-experts. Some questions may be more or less appropriate to your situation, but you're also welcome to suggest other issues that are more relevant for you...

### 1. Program & faculty roles and activities:

A. Can you describe what the [Prog. Name]'s philosophy of design is about?

- i. How does the program envision the role of design and designers in society?
- ii. What gap does the program seek to fill in regards in graduate design education offerings?
- iii. What grad programs do you compare yourself with (e.g., re: beliefs about the profession/curricular focus, etc)?

B. What College/University policies are/should be in place that support your efforts in teaching [research methods and/or interdisciplinary content and/or collaborative frameworks]? (probing for policies related to space-planning, technology, flexibility in curriculum, organization of faculty work)

- i. Do you teach [course name] on a regular basis? (If so) How (if at all) has the course changed over time?
- ii. (If not) If you felt it was necessary to change or adapt your course (content, structure, projects), how would you go about changing it (e.g., what procedure, if any, would you need to take)?

C. What other disciplines are of particular interest to [design specialization]?

- i. Why are they important?
- ii. How does [Prog. Name] relate to other design fields, e.g., other design majors in the College? (probing for how this relationship might be reflected in the curriculum, coursework and/or project assignments?)

D. Using [course/s] as an example, (or speaking more generally about the curriculum), can you tell me about the Program's approach (your approach) in deciding what non-design content you cover in the curriculum/your class?

- i. How is interdisciplinary coursework integrated in the curriculum? (required? elective? adviser directed? student selected?) OR
- ii. How are the knowledge and skills covered in your [non design course] used in other design courses (e.g., studios?)
- iii. What do students grapple with most re: understanding, learning, using interdisciplinary content in their design work?
- iii. Have you discovered any unanticipated issues or consequences in forging interdisciplinary teaching partnerships or integrating interdisciplinary content in your classes?

E. Can you talk about [your/the Program's] approach to devising collaborative experiences for your students?

- i. Who do the students work with? Do you manage the process?
- ii. Is that approach standard for the program?
- iii. Have you found unanticipated issues or consequences when integrating collaborative experiences into curriculum/your coursework?

F. How does the Program define 'research'? (prompt: What qualifies as 'research')

- i. Is that a collective understanding in the program, or are there different definitions depending on the class?
- ii. What research methods do you introduce to design students? Where do students seek out resources?
- iii. Are there any 'best practice projects' you use as exemplars in explaining to students what design research is about?
- iv. What do students grapple with most when conducting or using research to inform their design work?
- v. Are there unanticipated issues or consequences in trying to introduce designers to research methods & strategies?

G. What assessment criteria do you use to evaluate these competencies in your students' design projects (e.g., class projects, final thesis projects)?

### 2. Perceptions about the design field, faculty beliefs and activities:

A. How would you characterize the design field?

- i. What factors (e.g., social/economic/technological) have affected [interaction design/graphic design]'s growth/direction as a field?
- ii. What new roles for designers are emerging in [interaction design/graphic design]? Where do you see your graduates going?
- iii. What skills and knowledge are necessary to be successful in these roles?

B. How important are new competencies like [research methods/interdisciplinary knowledge/ability to collaborate] compared to other priorities (e.g., aesthetics, relationships between form and content)?

- i. How do you stay abreast of changes in the [design specialization] field? (probing for 'significant others', conferences, journals, etc.)

C. A graduate degree is not a requirement for practice. What are some of the considerations for choosing to study design at more advanced levels? Why do students go to [Program name]?

D. How do you think the design profession perceives graduate education?

# APPENDIX E: IRB CONSENT FORM

## NORTH CAROLINA STATE UNIVERSITY INFORMED CONSENT FORM FOR RESEARCH

**Title of Study** *Anticipation and action in graduate design programs: building a theory of the relationships between academic design culture, professional identity and the teaching environment* (working title)

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**Principal Investigator** Deborah Littlejohn

**Faculty Sponsor** Meredith Davis, Professor, Director, Master of Graphic Design Program

**General things you should know about research studies** You are being asked to take part in a research study. Your participation in this study is voluntary. You have the right to be a part of this study, to choose not to participate or to stop participating at any time without penalty. The purpose of research studies is to gain a better understanding of a certain topic or issue. You are not guaranteed any personal benefits from being in a study. Research studies also may pose risks to those that participate. In this consent form you will find specific details about the research in which you are being asked to participate. If you do not understand something in this form, it is your right to ask the researcher for clarification or more information. A copy of this consent form will be provided to you. If at any time you have questions about your participation, do not hesitate to contact the researcher(s) named above.

**Purpose of this study** The purpose of this study is to explore curricular and pedagogic practices in graduate design programs that concern the emerging competencies in contemporary professional design practice (i.e., research methods, integrating interdisciplinary bodies of knowledge into the design process and collaborative teamwork processes), and build a theoretical understanding of the relationships between graduate programs' convictions about design and the particular circumstances of the teaching environment where instruction takes place.

**What will happen if you take part in the study?** If you agree to participate in this study, you will be asked to discuss your thoughts and convictions about contemporary design, professional practice and design education (e.g., skills required for students entering design fields, sources of knowledge students should be familiar with, associated disciplines, and the role of the designer in the design process). In regards to courses that concern the competencies pertinent to the study, you will be asked to describe your teaching strategy and philosophy. If you are currently teaching these courses, you may be asked permission for the researcher to visit one or two class sessions and take photographs of the studio/teaching space during a site visit. You will also be asked to provide PDFs (or printouts) of curriculum documents including syllabus, project assignments and course outlines. Class visits are in no way evaluative of specific teaching practices, curricula or coursework.

**Risks** There are no foreseeable risks or discomforts used in the study. Your identity as a participant will be held in strict confidence.

**Benefits** This study seeks to contribute knowledge regarding design education and pedagogy and hopes to benefit the design discipline at large.

**Confidentiality** Information gathered over the course of the study will be kept strictly confidential. With your permission, the interview will be recorded for purposes of researcher recall and analysis. Recordings will not be shared or distributed. One year following the completion of the study, the interview recording will be destroyed. Data will be stored securely in private notes kept by the researcher wherein your identity will not be revealed. Unless you grant permission otherwise, no reference will be made in oral or written reports which could link you to the study.

**Compensation** There is no compensation for participation in this study.

**What if you have questions about this study?** If you have questions about the study or the procedures, you may contact the researcher, Deborah Littlejohn (dklittle@ncsu.edu) or NCSU faculty sponsor, Meredith Davis (meredith\_davis@ncsu.edu).

**What if you have questions about your rights as a research participant?** If you feel you have not been treated according to the descriptions in this form, or your rights as a participant in research have been violated during the course of this project, you may contact Deb Paxton, Regulatory Compliance Administrator, Box 7514, NCSU Campus (919 515-4514), Box 7514, NCSU Campus (919 515-7515).

**Consent To Participate** *I have read and understand the above information. I have received a copy of this form. I agree to participate in this study with the understanding that I may choose not to participate or to stop participating at any time without penalty or loss of benefits to which I am otherwise entitled.*

**Participant's signature** \_\_\_\_\_

**Date** \_\_\_\_\_

**Investigator's signature** \_\_\_\_\_

**Date** \_\_\_\_\_

## APPENDIX F: SAMPLE CODING MATRIX

CATEGORY IN-PROCESS	CODES/CONCEPTS
<p><b>Changing mindset-dispositions (preparing)</b></p>	<p><b>challenging expectations:</b> comfort with ambiguity; believing constraints/barriers are mutable; “being out of one’s depth”; “dispelling any sense of a ‘major’” <b>defining interest areas:</b> building sustained body of work; student understanding work as part of a “larger context”; framing complex problems w/ longer time horizons <b>responsibility/accountability:</b> understanding/respecting different perspectives (interdisciplines, people); <b>professionalism</b> “giving back” to field; empathy; <b>externalizing expertise:</b> building rigor (curriculum/ideas/work); making is understanding/thinking/research; demonstrating, reflecting, “remove tribal language” <b>“get out of the service mentality” (distancing):</b> traditional design roles; not “a student”; faculty don’t have “all the answers” [re: knowledge, telling students “what to do”; constraints are mutable]; “getting outside the studio” “studio an artificial bubble”; “getting students to look up” <b>identifying opportunity:</b> new/non-existing careers/new areas where design has not been <b>socializing design(er):</b> improving people’s lives; “knowing you have it wrong”; taylor conversation to audience; “spending time with ‘real’ people”</p>
<p><b>Diversifying design (anticipating)</b></p>	<p><b>diverse expertise</b> (hiring full-time faculty outside design; inviting non-design specialists; multidisciplinary faculty; dual appointments) <b>generalization:</b> design skills/knowledge transferrable (to areas outside design; “preparing students to go anywhere”; generalist views of design; “wearing different hats”; “not a monoculture”; developing/introducing courses [regular activity]; <b>erasing disciplinary boundaries:</b> “we’re training new kinds of people”; “new blood”; combining different majors, year levels; not privileging a mode or outcome in student work; nurturing work that resists definitions; multiple student backgrounds; accepting non-designers as majors; classes open to outside majors</p>
<p><b>Looking outside design (anticipating/defining)</b></p>	<p><b>boundary crossing:</b> operating outside the field; “having a foot in different worlds”; “bridge person”; “having ‘conversations’ not ‘a conversation’”; multidisciplinary fac. backgrounds; working in multiple design areas/multiple disciplines; teaching in non-design programs; partnering with others in research; reading outside design; using multi-disciplinary models [for teaching; for research]; “finding community with others (non-design)”; hiring non-design fac; inviting specialists not affiliated with the program; inviting clients, users, stakeholders into studio; asking, accepting expert advice and/or input [e.g., advisory boards, working with industry, allowing non-design faculty thesis committees, etc.]; <b>distancing</b> [“traditional design discourse not very interesting”] operating outside college/university context [national-level commitments; profession/industry] <b>getting students outside studio:</b> valuing, encouraging student activities outside studio; “studio is a bubble”; read outside design; see value in non-design perspectives <b>teaching non-designers:</b> “bringing design thinking to others”; lateral/dual department development; recruiting non-designers; developing design courses for non-majors [inside/outside program]; developing courses for mixed majors [designers and non-designers]; combining different design/non-design majors in design classes; serving on thesis committees outside the program/vice versa)</p>
<p><b>(re)Defining expertise (professional identity)</b></p>	<p><b>approach-process:</b> process, not artifact; not defined by formats, but how framed; not focused on artifact <b>balancing new practices with traditional skills:</b> traditional design skills/values still necessary [e.g., aesthetics, craft]; not “loosing creative authority”; knowing how to use and interpret research findings—not follow them <b>design is NOT art:</b> designers’ ego; “multiple minds to realize design” <b>research:</b> design poses questions; ideas-driven; speculative; research &amp; theoretical literature; a way of understanding/demonstrating; framing challenging problems; questioning convention <b>design is social practice:</b> communication; “creative fiction”; balancing-compromising conflicting goals; conflict resolution; improving people’s lives; facilitating change; future focus; employing technology as communication mediator; having “big conversations and little conversations”</p>
<p><b>Expanding design (anticipating)</b></p>	<p><b>advocating design:</b> clarifying design expertise; changing others’ perceptions about design; elevating design practice; “design can play a greater role in society/in knowledge production” <b>establishing rigor:</b> “pushing into new areas”; expanding design’s role; “crossing into new territory”; “charting new territory”; “finding opportunity spaces”; uniting different worlds [design space a location where different disciplines work together]</p>

CATEGORY IN-PROCESS	CODES/CONCEPTS
Socializing student/ design/er (defining/preparing)	<b>changing student mindsets:</b> faculty don't have all the answers; "teaching is an experiment"; "being comfortable with what you don't know"; practicing what you teach; demonstrating habits of mind; involving students in 'real' faculty research; "you're on this journey with me"; showing how industry 'works'; taking risks [e.g., in teaching, teaching in new ways]; <b>nurturing an environment for exchanging ideas:</b> student educational experiences; students are experts; students know more about some things than faculty; accepting student input; not limiting student work; "confidence to know where they fit in" <b>deliberate instruction</b> (sub cat) externalizing teaching/learning objectives (transparency in teaching [and learning]); holding students accountable to other disciplines; "my job is to help students see intelligence in production" [process focus]
Making appropriate for design (defining)	<b>borrowing &amp; adapting:</b> practices, models, research methods from other disciplines; inventing research methods; "room for crazy design research that breaks all the rules" <b>seeing/maintaining uniqueness of design:</b> design is not science; inventing new definitions; [re]framing concepts to be appropriate for design; "what does design need from research?"
Locating the program vs. current design culture (culture)	<b>detecting change:</b> perceiving deficits [e.g., student competencies]; responding to what's current; establishing rigor (differentiating graduate from undergraduate study); finding common ground (valuing multiple perspectives in design; having shared philosophies; "no dogma"); going/working against the grain ("training new kinds of people"; operating on the periphery; "fringe-y department"; "work that resists definition"; taking a different angle-road-path; traditional design (discourse) stagnant) <b>low barriers/no walls:</b> esp. at the administrative level; no boundaries; no 'silo'; collaboration encouraged; "putting stakes in the ground"; <b>seeing the 'big picture':</b> (generational thinking about student trajectory); looking at trends; taking generalist views of design; preparing professoriate; taking the long view [i.e., future focus]) <b>seeing provisionality:</b> seeing the need for change; finding problems with current practice; seeing need to teach differently; externalizing teaching/learning objectives; distancing from fine art; questioning teaching practice [re: traditional design education culture] <b>questioning professional practice</b> [re: traditional design practice) student backgrounds (valuing, recruiting diverse students from non-design; accepting non-design students as majors) <b>sub-category—faculty-faculty relationships:</b> deliberate instruction: externalizing teaching/learning objectives [amongst faculty as well as students]; faculty collegueship/connectedness ("I'm not an obstructionist"); diffusing ideas; not owning a class; respecting colleagues' different perspectives; learning from colleagues [e.g., teaching practices]; sharing discoveries; sharing failure/success; valuing teaching over individual practice) <b>faculty engagement</b> (reflecting [as a group]; "staying in the loop"; "faculty are always 'on the make'"; team teaching; willingness to experiment, take risks in teaching [engaging with unfamiliar practices]; committed to "making it work")
Responding to changes in the field (anticipating)	<b>managing change:</b> seeing change as constant; detecting change; adapting to change; continuous learning; constant tinkering; "there's always a better way"; making trials; cycles of evaluation; creating change <b>building a flexible infrastructure:</b> generous curriculum [not too specific/flexible/open to new ideas]; broad interest areas; flexible hiring practices; flexible levels of engagement [e.g., hiring faculty on their terms]; connecting faculty research interests to course offerings; considering school-wide policy when planning change; getting around inhibitive policies
Providing frameworks (defining & preparing)	<b>building value for new/non-traditional design concepts:</b> avoiding term "research" [students]; making appropriate for design; actualizing readings outside design in the studio; mediating meaning [to students and other disciplinary collaborators]; involving students in research "you're with me on this journey"; embedding faculty research [e.g., via research reports, readings] in studio design context; "dealing with the studio"; framing interest area/ideas as a 'project'

