EVALUATION OF INTERDISCIPLINARY COLLABORATION IN DESIGN RESEARCH

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EVALUATION OF INTERDISCIPLINARY COLLABORATION IN DESIGN RESEARCH

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ABSTRACT

This project evaluates the extent of interdisciplinary collaboration in the field of design research. Clarity of disciplinary interaction is valued for its potential to improve research. However, the interactions among various disciplines as to how skills, methods, and theories are applied to research projects remain opaque in most cases. By applying an anthropological perspective and using a variety of ethnographic methods, my participants and I were able to identify barriers to, and solutions for, transparent interdisciplinary collaboration in design research. This project goes beyond the various disciplinary contributions that necessarily define interdisciplinary interaction, as personal and professional traits that support collaboration in design-research teams are also included here. A result of this project includes the design of an interactive website dedicated to supporting and improving interdisciplinary design research. The website design is a work in progress, and the next phase of the project will consist of inviting design researchers to participate in its design, and ideally, in its usage on the Internet.

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Introduction

Design research claims to be interdisciplinary in practice. However, the abilities that are present within each design research team, and the contributions to design and research results due to interdisciplinary collaboration remain unclear. My curiosity and concern about disciplinary contributions and collaborative occurrences emerged while interning at a design research agency in San Francisco, California. The result was a project designed to understand work practices in design research in terms of practitioner understandings and uses of interdisciplinary collaboration. The project goals were to identify opportunities, and implement a tool based on those opportunities that facilitated the improvement of interdisciplinary collaboration in design research. Research methods included participant observation, semi-structured interviews, literature reviews, website reviews, quantitative sampling, and abductive reasoning. An anthropological perspective lent support to noticing cultural aspects that are embedded in how and why humans organize their work practices.

The participants in this project work for either independent or in-house design research organizations located within the San Francisco Bay Area. Twelve of the fifteen participants had at least five years of experience in design research. These experts had a deep understanding of the issues which was imperative for this study. However, novices offered fresh perspectives that challenged the views of experts.

Background

Design Research

The field of design research is instrumental in the design, creation, and implementation of products, services, and environments. Design research practitioners use methods from a variety of disciplines and fields such as marketing, ethnography, and industrial design. The term *design* in this sense goes beyond aesthetics, as design researchers consider the functional, cultural, and situational aspects of their concepts and prototypes. These practitioners tend to work in teams (Joseph 2004; Lindberg et al. 2010; Nabavi 2010) and strive to develop ideas that add value for their clients (Walters 2010). The overall approach is people-centered, meaning they design based on the needs and aspirations of people. Design research differs from traditional market research by following more of a qualitative approach (Lee 2012). Design research incorporates methods from anthropology such as seeking to understand cultural norms and trends, observing and conversing with people, and practicing empathy. They do this to get a better understanding of what is needed, including latent needs that lead to preemptive solutions to problems (Langford and McDonagh 2002:129-131).

Values of Interdisciplinary Collaboration

There have been many prefixes attached to the word "disciplinary," including cross-, multi-, trans-, and inter-, creating various terms (e.g. cross-disciplinary). The uses and definitions of each term vary, depending on who is using the term and the literature it is found in. Each term may have a nuanced meaning, but they are often used

interchangeably, leading to ambiguity of meaning, and confusion (Wall and Shankar 2008:551). These terms can be listed as a hierarchy based on their level of disciplinary interaction, from *multidisciplinary*, *cross-disciplinary*, *interdisciplinary*, and finally to *trans-disciplinary*. This hierarchy is based on the work of Erich Jantsch who presented at a conference on interdisciplinary studies in 1970 (Dykes et al. 2009:103). *Multidisciplinary* can be defined as team members from different disciplines working on a project in an isolated manner (Wall and Shankar 2008:551), and where no exchange between disciplinary perspectives occur, instead, providing alternative perspectives to a project (Dykes et al. 2009:104). According to Jantsch, *cross-disciplinary* can be defined as one discipline dominating the other disciplines represented on a team (Dykes et al. 2009:104). The term *interdisciplinary* is used when a problem presents a challenge that necessitates close collaboration and communication between two or more disciplines (Dykes et al. 2009:105; Wall and Shankar 2008:552). *Trans-disciplinary* can be described as a blend of disciplines, where new disciplines are created (Dykes et al. 2009:105), and the boundaries between disciplines become blurred. The added benefits of trans-disciplinary are the appreciation and increased trust between each discipline, and the broadening of professional networks (Wall and Shankar 2008:552).

The term *Interdisciplinary* has also become a catch all term that demonstrates various levels of disciplinary interaction and synthesis (Huutoniemi et al. 2010:80), and is the term that is commonly used on design research websites to describe their own

disciplinary interactions. Due to this and the ambiguity that occurs between terms, I have chosen the term *interdisciplinary* for this project.

Complex design problems require collaboration to solve them, and design research practitioners are increasingly working in teams that represent various disciplines (Fischer 2004:152-153; Nabavi 2010). Interdisciplinary research is generally viewed by private and public research funding agencies and organizations, as well as policy makers as being valuable (Fayard 2010). There is an expectation that the boundaries where disciplines meet or intersect lead to the production of new knowledge, and innovative approaches to problem solving (Fischer 2004:157; Huutoniemi et al. 2010:85). Past studies have shown how interdisciplinary research has produced new scientific fields and the formation of new academic disciplines. For example, organic chemists and physiologists working together in the early 19th century, led to what is now known as biochemistry, and the 20th century saw the emergence of cognitive neuroscience from the collaborative efforts of neuroscientists and cognitive psychologists (Robertson et al. 2004:20).

Other reasons for interdisciplinary collaboration include an access to funding, obtaining prestige and visibility, enhanced productivity, and the pleasure of working together and sharing knowledge within a mixed-group of researchers, which also has the added benefit of advancing careers (Rijnsoever and Hessels 2011:464). The language used on design research company-websites demonstrate that these companies value

interdisciplinary collaboration for enhancing research findings which their clients have come to expect.

Project Goal

The goal of this project was to understand current work practices and identify opportunities for improving interdisciplinary collaboration in the field of design research. This included increasing my own understanding of design research and interdisciplinary collaboration, as well as practitioner viewpoints so I could proceed to the analysis and intervention phases. Additionally, I wanted to raise the awareness of interdisciplinarity in the minds of practitioners so they could give it further contemplation and challenge the status quo in their organization. Most design research agencies tend to promote their own interdisciplinarity on their websites, so I wanted to know what, if any, effect this had on attracting clients.

Improving interdisciplinary collaboration is attached to assumptions that it will add value to a research team's activities. These include enticing potential clients from various domains of industry, enhancing data collection and analysis, creating innovative solutions, improving the effectiveness of how a project's time is used, and providing the team and client with a holistic understanding of people and the products, services, and environments they interact with. This project sought to challenge those assumptions by investigating how design researchers conceptualize interdisciplinary collaboration and put it to use.

My interventions were only going to be an assessment report that could inspire participants, and final recommendations that would have accompanied this project report. Further into the study I realized this was not enough, so I began designing a practical tool that could be used by the participants and other design research practitioners. I was thinking in terms of paper as to the form this tool would take, but it soon became apparent that a website would be the best way to proceed considering the types of barriers that the tool was to help overcome.

Study Significance

Current literature, design research websites, and my professional work experiences among designers, suggest the need for producing concrete and noticeable evidence that design research is interdisciplinary in practice. Some practitioners are concerned about the opacity of interdisciplinary collaboration. They are questioning its value, and would like to know how it can improve their practice. If interdisciplinary collaboration in design research is valuable, as many practitioners claim, then it is important to know how it is actually being applied.

There is an opportunity to advocate the added value that can arise from each discipline, and how and why they interact. Interdisciplinary design research is still evolving and there is no consensus of what it means, or if a unified definition is even necessary (Simonsen et al. 2010:7). Nevertheless, design researchers value interdisciplinarity, and provide their clients with innovative solutions based on interdisciplinary research. Clients trust that design researchers are providing them with

the best results possible, within a particular timeline and budget. There is current interest in improving the practice, including from a 2010 design research conference that discussed how multidisciplinary research is difficult to recognize in practice, but multiple perspectives and methods are part of a practitioner's toolbox (Fayard 2010).

Concrete and easily recognized methods could improve interdisciplinary research. Explicitness allows for research replication, choosing alternative methods, skills and perspectives, and reassessing processes, leading to a renewed rigor of research (Robertson et al. 2003:20-23). As a final note, the actual work of interdisciplinary research teams should be observed and analyzed in order to continuously improve interdisciplinary methods, but without further study, "we cannot even begin to identify what is 'good' interdisciplinary research" (Robertson et al. 2003: 24).

Internship

The relevance of including my internship in this paper is to explain a method of design research based on my experience as an anthropology student, and to illuminate the path that led to this project.

In June 2010, Anthropology professor Dr. English-Lueck introduced me and a few other students to Uday Dandavate, Co-Founder and CEO of the design research agency, SonicRim. My interest to learn more about design research and an opportunity to find a topic for my graduate project led me to an internship position at SonicRim's San Francisco office from September 2010 to January 2011. Six people, including myself,

worked at this office, where duties included participant recruitment, data collection, sorting and analysis, client meetings, and the design and production of co-creation kits and client deliverables.

During my time there, I contributed to three projects. My coworkers participated in all duties, whereas I was limited to data entry and sorting, producing co-creation kits, and writing the Project Findings and Appendix sections for a client's PowerPoint deliverable.

Data entry consisted of entering contextual conversational quotes from interview transcripts and participant diaries into the data management software, FileMaker Pro. Quotes were selected and entered from transcripts based on their relationship with keywords that were determined by the client and project manager, and by the salient information that we found during our transcript readings. Each quote and associated keyword(s) was saved as a virtual notecard, which were then printed as actual notecards ready to be sorted. Our small team sorted thousands of notecards for each project. Sorting started as stacking notecards into piles that were based on the keywords. As recurring patterns were observed within and between each stack, notecards were then interchanged into new stacks based on these patterns. Overarching themes, representing the most meaningful and general concepts that span the data, emerged from these patterns, and each theme was written on a sticky note. Sticky notes and supporting notecards were placed on 4'x8' foam boards, which were propped up around the room to be analyzed by the team and client. As the analysis

process progressed, insights emerged, which were discussed and negotiated between the team and the client. The project process, final insights, and supporting data were then prepared as a Power Point deliverable that the client could use for their designs and development of new products, services, or environments.

While I was learning about and practicing the methods and skills used in design research, I realized that I was contributing only a small portion from the discipline of anthropology, that of sorting qualitative data. Although I contributed my labor, ideas and opinions to the overall projects, I felt overridden by more experienced practitioners. Early on, a coworker and I had a conversation about Pierre Bourdieu's concept of "habitus" and its possible relevance to the current project, but this idea was severed since philosophical discussions at that particular time were inappropriate and we had to focus on "actionable items." This is not to say that such discussions were not welcome, but there was a time and place for them. As a newcomer to design research, and to this particular company, I was not fully aware of their norms of business practice. I soon adapted and became comfortable with this way of working since the internship was about learning the field of design research. However, I became uncertain as to why a student of anthropology was valued in this field, and how I would be able to contribute the skills, methods, or theories that I have been learning in school.

Through casual conversation, I heard about the educational and work backgrounds of my coworkers and those of practitioners from other agencies that I met at a design research conference. The backgrounds that I heard about during this time

were French studies, marketing, industrial design, manufacturing, engineering, and anthropology. Although these backgrounds offer skillsets that are common in design research, I learned that much of what these particular practitioners knew about was not necessarily being applied. I thought about how much this really mattered, since people from various fields pursue many other fields as a career anyway. My undergraduate degree is in geography, but I work as a designer and producer of commercial signage, and am not applying my knowledge of geography except for my knowledge of maps which helps in my design of way-finding signage. I then began to formulate my project idea. The commercial signage industry does not mention or strive to be interdisciplinary, nor do most industries. However, like the field of medicine, design research claims to be interdisciplinary. SonicRim's website mentioned:

> *Our team has the necessary training and experience in Design, Market Research, Anthropology, and Psychology, which allows us to draw upon multiple perspectives.*
>
> *SonicRim accesses information about people's behaviors, needs, and aspirations through a wide variety of tools and techniques drawn from several different disciplines.*
>
> *We use principles from a variety of knowledge domains to develop research tools that are customized to your project needs.*

I then reviewed thirteen other company websites that represented design research agencies, and ten out of thirteen claimed to practice interdisciplinary research. If interdisciplinary research was not entirely important, why mention it throughout a website? If it was, how did they perceive it and to what extent was it implemented into

the projects? Based on what I had learned during my internship, was it being utilized to its full potential in a practical way that adds value? And finally, what could be done to improve interdisciplinary collaboration?

Anthropological Perspective

Since this project includes a focus on interdisciplinary interaction, questions the value that various disciplines can contribute to research, and began with an inquiry of how I would be able to apply anthropology in design research, it is fair to mention how my own background in anthropology has influenced this project.

The field of anthropology is interdisciplinary in itself compared to most other disciplines. Topics for research are seemingly unbounded for anthropologists, and the evolution of the discipline has been shaped and influenced by many academic disciplines and fields of research (Dogan and Pahre 1990; Ervin 2005). This project fits within the bounds of anthropological study, but what differentiates this project as being anthropological, versus being conducted by a researcher with a different background?

One difference is conducting fieldwork and the various methods that it entails. However, researchers from many areas of study conduct fieldwork, and use similar methods, including methods from anthropology (i.e. ethnographic methods). My knowledge about disciplines has limits, but as a student of anthropology, our studies cover many disciplinary areas, including psychology, sociology, statistics, history, politics, health care, economics, religion, and even design research just to name a few. I have a degree in geography, but have spent much time studying design, marketing,

communications, cognition, and linguistics. This leads to a difference in perspective. Instead of having a primary focus on money as an economist, documents as a historian, or experiments that control for variables as a psychologist, anthropologists have a holistic view, meaning that as many aspects of culture (including knowledge from across the disciplines) as possible are considered during a research project.

For this project, I had an understanding that cultural aspects (e.g. artifacts, beliefs, language, etiquette) are interrelated and form parts of the whole for the groups that I was studying. The findings and patterns that emerged from my analysis are interrelated, and no one cultural aspect, observation, or knowledge domain dominated the research.

In order to understand the extent of interdisciplinary collaboration in design research, it was important to understand the "culture" of the design research industry. Any form of human collaboration is only one aspect of human interaction and communication, set within broader cultural contexts. In this project, the study of interdisciplinary collaboration is set within the composition of each team, which is set within an agency, which again is set within a community of agencies located within the San Francisco Bay Area. Cultural norms of each context have an influence on work practices and collaborative behavior. This project has been limited to the Bay Area with an understanding that this region continues to be influenced globally, and that design researchers practice in many places around the world.

My anthropological perspective guided how I communicated with participants and observed their work environments. Communication began with recruitment emails that were personalized in address, and took into consideration their time schedules. The interviews with participants flowed like a casual conversation, focusing on what they felt was important for the topic of discussion (the emic perspective), keeping participants interested beyond the time limit of 60 minutes. Some of the questions challenged the behavioral norms and perspectives within their organizations which had the effect of raising their awareness of what they did and why they did it. Raising awareness is an important step to effect change in an organization because it has the ability to challenge a person's comfort zone and supports proactive decisions (Dotlich and Cairo 1999).

My observations during the interviews provided some insight to their business culture. The conversation settings were informal, whether at a workplace or a café. The clothing of participants, and other practitioners that I noticed, was either casual or casual-dress. The workplaces appeared to be open and accessible, and some places had prototypes on display or had interesting (to me) furniture designs and functions. The workplaces appeared to be simultaneously relaxed and busy. Taken together, it reminded me of the descriptions I had heard regarding the creative and technical workplaces that partly defined the idea of "Silicon Valley." By observing these workplaces, I was able to notice how the spatial layouts and artifacts (e.g. tools, furniture) might contribute to or hinder collaboration, and was able to compare the similarities and differences between each location.

When an anthropologist studies cultures other than their own, learning about that culture could be time consuming since they have to learn about norms of behavior, language, and other cultural elements that are different in varying degrees. This may seem more difficult than studying a business that exists within the broad cultural context of the researcher. However, such studies do present problems. Although I had a limited understanding of the design research culture, I had to be aware that my participants and I shared a broader cultural context. Anthropology teaches that culture is learned, shared, maintained, and much of the behavioral norms are unconsciously embedded within a group of people. It rarely occurs to people to question their own behavioral norms. This concept helped me to be critically aware of the behavior and language use that I encountered. I attempted to become as much of an outsider as possible during the conversations with participants, attempting to be as objective as possible, however it is difficult for me to know how successful this was.

As an anthropology student, it is my hope that this project contributes to the continuing research on professional organizations. It provides insight on the barriers towards interdisciplinary collaboration that design researchers encounter, and offers possible solutions. It also provides insight to the acculturation processes encountered in business, including how effective teams are formed and evolve. The recruitment of team members still include stereotypes, assumptions, and ignorance about the knowledge and skillsets that potential employees are attributed with due to their work, educational, and extracurricular backgrounds. How people are brought into or denied

access to the workforce, and the motivations behind this, remain an important topic for anthropologists who study work-related issues.

Being critical towards the disciplinary interactions in design research led me to reflect upon anthropology and how it can be further implemented into design research. The skills, methods, and other traits that are necessary to be more effective in an interdisciplinary design research team are included in this report, which could help people to become better prepared to enter the field of design research.

I was the sole researcher for this project even though I understood the values of teamwork. This leads to the question of how this project might have had different results if it were done by a team of researchers, especially by an interdisciplinary team. Researchers could benefit by asking themselves this question while preparing for a project.

Methodology

My internship gave me the opportunity to participate in and observe the actual work environment of a design research agency. This allowed me to form professional relationships with practitioners, to understand the work processes and relationships between practitioners, participants, and clients, and to experience working on design research tasks alongside my co-workers. This type of participant observation is a traditional method in anthropology, where anthropologists attempt to embed themselves in a culture to receive a better understanding of it (Ervin 2005; Schensul et al. 1999).

In order to reach the project's goals, design research practitioners had to be interviewed, so a recruitment plan (Appendix A) was emailed to each practitioner for this purpose. In addition to recruiting practitioners, a recruitment plan (Appendix B) was sent to clients of design research. A discussion guide (Appendix C) was used during the semi-structured interviews with the participants. The open-ended, semi-structured interview is a mainstay of anthropology. Unlike a survey or a closed-question interview, semi-structured interviews are used to guide a conversation loosely enough to elicit additional information or deeper meanings, while remaining focused on the issues of the project's intent. The interview questions were predetermined based on my internship experiences and preliminary research, but additional questions arose as needed. I also allowed participants to sketch out ideas with colored pens on paper. Pelto and Pelto (1996) mention similar tools used during anthropological research, and since sketching was a skill already used by design researchers, it seemed an appropriate way to literally illustrate ideas.

During the interviews, I was able to observe the workspace of some participants. Observing behavior in an environment helps to understand how people relate with each other and the environment itself (Zeisel 2006). For this project, I was able to see how the work environment might support interdisciplinary collaboration. I was also able to compare the similarities and differences between the design research agencies in terms of their environments. The workplace settings also provided the "natural environment"

that anthropologists have traditionally used when conversing with and observing people.

A group exercise, explained in the section Data Collection, was part of the research design for this project. However, none of my interviewees wanted to participate in this. The reason for the exercise was to experiment with skills and methods in a hypothetical project or applied to an actual past project. Theory could have been experimented with as well, as a sort of *praxis* (Ervin 2005:9; Comaroff 2010: 530).

Participant Recruitment

Potential participants represented current practitioners of design research, and came from a variety of academic and work backgrounds. Random sampling was inappropriate for this project since I needed to speak with design research practitioners. My goal was to interview and observe practitioners within the Bay Area who had at least five years of experience. They were identified via my perusal of design research agency-websites as well as the AnthroDesign website, a list of contacts given to me by Uday Dandavate, and by my own personal and professional connections. Additional contacts became available to me as recommendations from the participants. My plan was to meet at a time and place that was suitable for them. I did not email all of the initial contacts at once because scheduling the meetings would have been a problem.

Recruitment was via email and took place over the course of five months, from March through July of 2011. A total of 23 emails were sent out. Eleven people agreed to

participate out of the eighteen people who responded. Four people had a coworker who would also participate, lending me a total of fifteen participants. The email message is in the Appendix (Appendix A).

Recruitment of Design Research Clients

Two months into the research, I thought it would be beneficial to interview the users of design research agencies. They might have provided me with their understanding of the design research process and how they perceived its influence on the results they were provided. I was interested in the extent that interdisciplinary research might have been a factor in which agency they chose to hire. That information could have been used as feedback to the agencies when determining how they would promote the interdisciplinary aspect, including its appearance on their websites. Six emails were sent out in June and July of 2011. Only two people replied, but nobody participated.

Instrument Development

A discussion guide (Appendix C) was used to structure the conversations. The purpose of the conversations was to understand how participants perceived and utilized the concept of interdisciplinary research, to raise their awareness of their own practice, and for the possibility of identifying ways to improve their practice along interdisciplinary lines.

The guide was meant to be followed loosely and not read verbatim. It was important to allow the conversation to flow, to provide answers to their questions, and

ask additional questions as deemed appropriate and necessary for the study. I initially asked participants to tell about themselves and their team. This would be a way to break the ice and let them know that I was sincerely interested in knowing about them and their research experiences. The composition of each research team in terms of work and educational backgrounds, and how team members interacted with each other and their projects, needed to be known in order to establish a baseline on how to proceed with subsequent questions. I knew that some questions would prove to be disruptive and challenge the status quo in their own organization, so it was important to establish rapport from the beginning.

Raising their own awareness was important because people can get comfortable in their day-to-day work practices, so they might not be asking themselves questions that an outsider would ask. Asking a "why" question is an example of a disruptive question, where they might have to take time to think about their answer or may not have an answer because they have not given the topic much thought in the past. Providing the participant with an example is an effective way to prod for an answer, however it is important to understand that this might inadvertently lead the participant to answer in a way that only validates a preconceived notion.

Questions about current barriers and opportunities in interdisciplinary collaboration were developed to identify ways to improve their practice.

Data Collection

Before the discussion guide was created, I read up on some recent articles that had the most relevance to this study. This provided me with a brief literature review for the IRB Narrative form, and gave me some general ideas for the discussion guide. Literature, including articles, books, and website blogs were added along the way throughout the entire project.

Once I had approval from the IRB and the department, I sent out the first wave of emails on March 21, 2011, and was receiving replies within the week. My original intent was to finish all the interviews within a month. However, this would have been a problem for two reasons. First, I did not want to dictate the interview days. I believed that people would be more willing to participate if they were allowed to meet during a time of their own choosing, and scheduling too many people at once would have led to overlapping times. Second, my contacts were very busy with their work, so advanced notice (sometimes a month out) was necessary. Because of their limited and valuable time, the email informed them that the interview should last between 30 and 60 minutes.

Data collection instruments consisted of the discussion guide, notepad, various colored pens and sticky notes, a sketchpad, two recorders (one digital, one analog), and consent forms. Consent forms (Appendix D) were presented to each participant immediately after our introduction and my brief explanation about the project.

Part of the explanation included the option of a group exercise that would have been conducted at a time and place of their choosing. However, no participants agreed to participate in this. Design researchers tend to work as a team (Joseph 2004; Lindberg et al. 2010; Nabavi 2010), and with a group of their own participants (Kelley 2001; Langford and McDonagh 2002:129-131). Some tools they use include day-in-a-life collages and ideal experience mapping, modeled on a white board with colored pens and sticky notes (see Glossary). My intention was to use this familiar method with them to support the topics we discussed as visual models. The idea was to identify their *disciplinary* (specific to academic training), *other* (work and life experiences), *training* (within design research), and *applied* (what is actually practiced) attributes of their team. This exercise would have provided a visual of what their team did and did not practice, with the goal of identifying barriers and gaps that could have been turned into opportunities. They would have sketched their own models, applied to a past project or a hypothetical project, allowing for an inductive and iterative approach to new ideas on how to share and utilize any skills, methods, or theories that were not being applied but could prove useful.

My first meeting was with Dr. Sara Beckman on April 1. We met for an hour at a coffee shop in Berkeley. Her educational background is in engineering, statistics, and management. She works as a senior lecturer at Haas School of Business at UC Berkeley and has connections with the Redwood City based design research agency, Point

Forward. During our conversation she sketched out models to help explain to me what she was talking about (Appendix E).

This first interview did not proceed as I had expected. The questions I prepared in the guide seemed simple enough for direct answers, but the answers I received seemed to be more tangential. As she was explaining and modeling concepts such as T- and I-shaped people, core teams, Delta design exercises, the wedge strategy, and learning cycles, I thought the issues were perhaps more complex than I had realized.

I took careful note of what she was explaining and incorporated some of it, in a modified way that was relevant to my study, into my subsequent interviews. This led to my trend of refining (while staying true to my original inquiry) each interview as they proceeded. This also served as a way of saving conversation time, by preempting each topic so the interviewee did not have to start from scratch with an explanation. Each participant did have their own understanding of all the topics we discussed. The only education I provided was to answer a few questions on how other participants (as anonymous) viewed a particular topic.

All interviews were in person, except for when I spoke with two people from Doblin. Although they have a presence in San Francisco, their main office is in Chicago, so I spoke with them on speaker phone, and emailed the consent forms. Three of the in-person interviews were conducted at a café, the others at their place of business. Six businesses showed me around their workspaces, so I was able to observe first-hand the environments and tools that were used in their practice. They all had similar set ups,

including open floor plans with side offices, and wall areas or foam boards where data and sketches could be presented and worked on. One place was in the midst of a project and I was shown the data presented on foam boards laid out in order along a wall. Differences were in the amount of people and prototypes present, some had two or three people, where others had ten or more, and one agency had about 30 prototypes on prominent display, mainly for client perusal. Each interview lasted between 60 and 90 minutes.

Together, the observations, conversations, literature and website reviews, and my internship provided me with enough data to analyze for developing interventions that could improve interdisciplinary collaboration in design research.

Data Analysis

The analysis was similar to what I observed and practiced during my internship. The main difference is that I was the sole researcher. The disadvantages were not having a team to collaborate with, and greater time consumption. An advantage was that my participants had no direct influence on the analysis or a time of completion, unlike a client's demands on a research agency. The detail presented here is to show one method of analysis that other researchers might find useful.

I transcribed and printed each audio recording in the evening after each interview. The reason for this was that typing it out made the content clear to me than just listening to the conversations. Transcribing each audio recording the day of the interview allowed for my fresh memory of the interview to add context to the

transcription. Although I had a backup tape for each recording, it was easier for me to transcribe from my digital recorder. Each printed transcription, along with the consent forms and participant sketches were put into a 9”x12” clasp envelope. I coded each envelope with participant initials and interview date, such as “SP714.” The transcriptions did not include names, only initials. Interviewing only 15 people and my ability to visualize each conversation made it easy for me to remember who each code was referring to. Although most participants agreed to be named in my report, some did not, so I just standardized the code for everyone.

The days between interviews allowed me enough time to read the transcriptions multiple times and identify keywords and phrases that were relevant to the study. These were highlighted or underlined with colored pens, where each color represented an idea such as *barrier to collaboration*, *educational background*, or *client influence.* I conceived these basic ideas early on, and many were derived from the interview questions. However, new ideas became apparent in the data and these were initially marked with an exclamation point. As such ideas occurred in subsequent interviews, they would be deemed salient enough to warrant their own color code.

Particular words appeared frequently. An example is the word “passion.” It recurred many times, and I have not seen its use so ubiquitously elsewhere. Its use was mainly in the form of “practitioners should have passion” or “It is a passion thing we do. What part of this job do you love?” A question I should have asked during the interviews was “why is passion important? What is its meaning or usefulness?” However, its use

seemed subtle enough during the interviews that I did not think to ask follow up questions about it. It wasn't until later in my analysis that I began to understand its value.

Near the end of July, I was ready to analyze the data. As I sifted through the pages, I noticed the commonalities and differences among the use of keywords and phrases. These represented patterns, in which a total of 19 themes emerged.

I copy and pasted each color-coded quote into a new document, categorized under a theme. For example, all quotes highlighted as the theme *Other Traits*, were listed together, and each quote had the code **OT** next to it. I then printed these pages out on sticker paper and cut them apart, and then each quote was applied to a 4"x 6" index card.

> *(RDH) I think partly it is personality. Some people are more comfortable with pushing their own boundaries. Being willing to fail. Our work here involves a lot of failing. You can come up with a hundred good ideas, but they are all hypothesis. It's willing to try to do a bunch of things and fail. Comfort level of being outside your zone of expertise. Having a curious nature.* ***(OT)***

Each card also had a code representing the type of team the participants worked in: (R.) Research, (RD) Design and Research, (RH) In-House Research, and (RDH) In-House Design and Research. Each team had varying offers from pure research, through concept modeling, to designing and building prototypes. However, each team was placed into one of these discrete categories based on their primary function. This gave additional context to team composition. A team that does not build prototypes might

not have an engineer on staff (even though an engineer might provide a unique perspective to a research project). In-house departments have a different client relationship, because they are often their own client, so communicating and negotiating between the research team, production shop, and marketing department operates differently than a client who hires an outside design research agency. Five hundred and twelve transcription cards were created.

Thirty-eight articles were sifted through and coded with the same themes as the transcripts. Articles were assigned a number and 88 cards were coded to match.

> *(14) Interdisciplinary design research is emergent, always in the making, alive, a constantly evolving collective effort.*

The literature was meant to support or oppose the transcript themes. Most lent support. However, detractors proved to be interesting and challenged the project. One of the purposes of this project was to find out how theory was being applied in design research, yet an article from *American Anthropologist* cited that the classic work of E. E. Evans-Pritchard on the Nuer (1940) did not have a word of theory in it (Comaroff 2010: 530-531).

One activity included in this research was to show that interdisciplinary collaboration might not be necessary in design research. My stance was neutral on the matter. If it turned out that interdisciplinary collaboration did not provide enough value for practitioners to strive for it, this result would still be useful data for those who would

continue to research the topic. One poignant example that conflicted with an assumption that interdisciplinary collaboration was valuable is this participant quote:

> *(R) I worked at HP for many years and we had people like that [I-shaped] stored away in HP labs, where they were perfectly happy doing their thing. Don't bother him, because one day he is going to spew out the next product that he just invented.* ***(B)***

This quote does not say that interdisciplinary collaboration has no value, but does raise the question as to the extent of its value. Almost all the literature says it does have value but the barriers of creating, utilizing, and maintaining an interdisciplinary team remains high.

With 600 data cards, books, articles, and website pages at my disposal, I began to look for new themes by re-sorting the data cards. I laid these thematic card stacks on the floor of my converted garage. This space with its ample floor room and blank walls became my data analysis room. Re-sorting occurred by identifying keywords and phrases that appeared between the stacks. This was a way to notice the connections between the 19 themes that I had. This task involved multiple iterations and a week later I had 36 themes. The themes were organized as taxonomy listed in seven high order terms: *Disciplines*, *Traits*, *T-Shaped*, *Recruitment*, *Barriers*, *Solutions*, and *The Future*. These terms became my archetypes. Each archetype had between four and ten themes attached to them. Some themes overlapped, such as *Time* being both a barrier and a solution. The archetypes and themes were each labeled on a sticky note and placed on my walls, with archetypes listed across and themes listed below each

archetype. The next step was to choose the most salient data cards to be placed on the wall under each theme. After choosing, placing, and moving some cards around, this task was completed in a few days resulting in 319 data cards on the wall (see Figure 1).

Figure 1: Photo of my data analysis room.

These cards became my findings, representing all the relevant and salient data that would lead to insights, recommendations, and a practical solution for improving interdisciplinary collaboration in design research.

Findings

It is important to note that findings presented within each theme can be interrelated with other themes, as one affects the other. Each discrete subtitle represents the primary content within a theme. Not all theme related items, such as a particular skill or tool, is necessarily used or encountered by every participant.

The content within the findings include a synthesis of participant knowledge and beliefs derived from the interviews, my own insights, and literature findings where noted.

1. Barriers

Barriers had more themes attached than any other category. This is not surprising since the barriers are by definition, the crux of the problem to utilizing interdisciplinary research. Ten themes were listed as being barriers to interdisciplinary collaboration. The themes are *Academics*, *Disciplinary Identity*, *Disciplines*, *Rhetoric*, *Adding Methods*, *Clients*, *Time*, *Budget and Agency Size*, *Stubborn*, *and Communication*.

1.1 Academics

According to an article on interdisciplinary graduate courses, boundaries are created and maintained in bureaucratic institutions, and at universities these take the form of departmental silos. The author states “Departments and colleges often operate: Creation of turf-silo disciplinary boundaries that fail to address the inherent cross-disciplinary realities of professional roles. Consequently, students are often ill prepared to address the emerging challenges surrounding their fields” (Froman 2011:78). An

article on trans-disciplinary learning mentions that academia rewards those who focus their work within a single field of study and publish within discipline-specific publications (Wall and Shankar 2008:553), thereby discouraging interdisciplinary collaborative teamwork (Froman 2011:79).

1.2 Disciplinary Identity

Being trained along a singular line of thinking and having this reinforced in school does allow for specialization and becoming an expert in a particular area of study. According to some participants, this is valuable and many companies hire based on a depth of expertise, and Robertson notes that some researchers are chosen "because their disciplinary expertise is obviously necessary to address the research issues (2003: 22). However, most participants mentioned it can lead to an identity that interferes with interdisciplinary collaboration.

One participant who teaches at Stanford mentioned that intellectual statuses based on academic majors exist. The university says the playing field is flat, but that is not how people view each other. On at least one occasion, students were asked to rank majors by applause meter. Most participants agreed that empathy was important not only for a better understanding of their own project participants, but also to understand and respect what people from other disciplines had to offer.

1.3 Disciplines

After speaking with practitioners, and while reviewing design research websites, I made a count of the educational backgrounds of practitioners in design research (n=300) with a total of 52 disciplines. Design (mostly industrial design), business, and engineering make up the bulk of the practitioners educational training, with a total count of 134. This meant that 166 practitioners from this sample represented 49 disciplines. However, the three main backgrounds mostly appear in agencies that design and build prototypes. These three disciplines also take up the bulk of the conversation when most articles and participants discuss interdisciplinary teams. This imbalance seems reasonable since many of the skill sets are practical, especially those from design.

Most articles that mention interdisciplinary programs favor design and business students. One example is the Carnegie Mellon University MBA program, where they developed "an innovative, interdisciplinary, project-based capstone course…..with a focus on disruptive (and sustainable) innovations….aimed at the potential for commercialization" (Boni et al. 2009:407), and "We found the best way to do this is to form multidisciplinary teams in which designers work directly with technologists and business student entrepreneurs" (Boni et al. 2009:408). Overall, this data represents a limited interdisciplinarity, missed opportunities and perspectives, and suggests a narrow view of hiring practices.

1.4 Rhetoric

The word “Interdisciplinary” has become increasingly popular. Some participants believe it is more of a marketing tool to attract clients and obtain prestige among the design research community. Wall and Shankar note it has become a “magic word,” “the utterance of which makes a project appear to be broad and varied, while actually changing nothing” (2008:553). A participant mentioned that she was hired for her marketing and anthropology background, but thinks it was used as a badge to show clients, but when it came to real work it was irrelevant.

1.5 Adding Methods

The inertia of day-to-day tasks does get in the way of adding methods. However, being too comfortable with current practices is also a factor. Many practitioners say they want positive additions or changes. However, the reality is either they are not motivated enough to accommodate change, or they claim to have “the process” which they are using to entice clients, and changes to this process would upset their *Raison d'être*. A participant at one of these agencies said “eventually you are going to be in this design research, human factors soup.”

1.6 Clients

Clients often just want something nice looking that will sell. They want to do this quickly and within a given budget. Many are afraid to take risks. They want something new from the design researchers, but they do not like to leave their comfort zone. They typically come from a hierarchical organization and have to answer to their superiors

who find comfort in numbers and measurements. Design researchers take a risk when speaking to clients about social theory, role-play methods, or other contributions from various disciplines. This tends to get fuzzy for the client, so business acumen must be present when communicating with clients. Clients typically do not care about the team composition. Their main focus is on the results and deliverable. This is an interesting conundrum, considering the information provided on design research websites, including their personnel profiles such as this:

> *Cheskin Added Value is home to a diverse and highly talented community of consultants, researchers and designers. We have academic credentials in psychology, sociology, anthropology, design planning, human-centered communication, branding, identity, advertising, product development, marketing and business. As important, we include musicians, self-professed tech geeks, public performers, a competitive water skier, mountain climbers, sailors, futurists, non-profit volunteers, aspiring novelists, a surfer, fine artists and nature lovers. We come from more than 20 different countries and cultures. We speak English, Spanish, French, Mandarin, Cantonese, Japanese, Tagalog and a few others.*

1.7 Time

Design research agencies, like most companies, have time constraints that are often dictated by clients. Researchers agree that good design research takes time, but some of the skills, methods or theories they would like to apply would take too long to implement. To some extent, agencies do not have a lot of down time to contemplate interdisciplinary 'what ifs.' They get caught up in the inertia of projects, one after another. Business consultant David Maister said "Left to themselves, professionals, like all human beings, find it all too easy to take care of today, at the risk of underinvesting

in tomorrow. Hectic pace means it is difficult to spend time investing in interdisciplinary team development" (McCallin 2003:368).

The participants in this project are employed by for-profit businesses. According to them, they have to consider the cost—value matrix or return on investment (ROI). However, they do believe that having an ideal interdisciplinary operation is a worthy aspiration, having some understanding of its potential value.

External contractors present another time constraint. They typically do not have a full grasp of a project and getting them up to speed is time consuming. A limited amount of contracted hours also places limits on what they can do. One participant poetically mentioned a 'dancing period,' the time it takes to get to know people and learn how they will work together. She also believed this occurs in school as well, where a well-intentioned interdisciplinary project, lasting three months, is not long enough for developing an understanding between teammates, and the results might not be very deep.

1.8 Budget and Agency Size

Budgets are related to time, and some agencies choose to have only a few people on the payroll. Contractors are valued here, as they can be hired as needed. However, there are problems with having a small agency. Researchers are multi-tasking more than those in larger agencies, and the time available to train contractors or new hires is extremely limited. It is also difficult to work on multiple projects at one time, and work might have to be turned away. Skills, methods, theories, and extracurricular

experiences may be limited within the team, so something that could be useful is not available to be applied to a project. More on this will be mentioned later, as part of the solution lies in “T-shaped” practitioners.

1.9 Stubborn

If teammates are stubborn, and cannot or refuse to see each other’s world view, this can cause a conflict of “who’s telling who what to do.” Some friction can benefit a team as it pushes the boundaries of what is possible, but too much friction can be devastating. One participant recalled an experience by Susan Squires, that at one point while she researched at GVO, some designers looked at Squires and told her she couldn’t design her way out of a shoebox. Most participants also mentioned how many designers fall in love with their own designs to a point where they do not want to budge. These participants believe this interferes with the benefits of multiple design iterations and evaluations.

1.10 Communication

Tacit knowledge is a key barrier in communication. Many practitioners realize they do things that might be helpful for other people to understand, but is difficult to articulate. One participant mentioned that eventually, it will be necessary for senior teammates to pass on their knowledge to junior staff.

One article notes “Tacit knowledge is intuitive, acquired through practical experience and as such, is personal and contextual and cannot be readily made explicit or formalized” (Greenhalgh et al. 2008:184). Studies show that practitioners may rely on

their intuition to assess a situation and "override codified information," assume the team is on the same thought wavelength, and to convince clients of research results (Greenhalgh et al. 2008:185-190). In the field of design, an assessment of quality is related to a designer's perception (Peeters et al. 2007:640). The value of expert knowledge from various practitioners on a research team is in many cases implied, and there is "no consensus on how to measure interdisciplinarity in practice" (Huutoniemi et al. 2010:79). In order to help practitioners to communicate the pragmatic value of their discipline and to improve their research practices and findings, it is important to understand what is being integrated or excluded in a collaborative team, how it is accomplished, and why it matters (Huutoniemi et al. 2010:82).

Vocabulary is also a major communication barrier. The various academic disciplines use language in different ways, and the inability to use the same words consistently leads to challenges. As noted by one professor who researches at Doblin "*Coding*, *Keywording*, *Taxonomy*, *Typology*, *Framework*, and the dreadfully elusive *Theme*. None of these words seem to be available in single definition mode."

2. Traits

Traits refer to personal attributes that help to improve collaboration. *Communication*, *ambiguity comfort*, *failure tolerance*, *team player and leadership*, and *passion* were the common traits that emerged from this data.

2.1 Communication

According to participants, communication has to be flexible. Design researchers communicate with team members and leaders, their research participants, vendors, and clients. Personality and communication skills are critical and take precedence over the educational and work backgrounds of practitioners. It is important to be empathetic and allow people to feel comfortable during a conversation. This helps the researcher to fully understand what people are saying and to elicit additional information. Business acumen is especially important when conversing with clients, even more so with upper management. Behaving and speaking in a persuasive manner is important when giving presentations. One participant said she was able to introduce a theory into a project by convincing the client of its relevance. Participants also realize it is necessary to understand the vocabulary of their own participants and clients, and I would add that an understanding of behavioral traits, such as nonverbal communication that will be encountered, would also be useful.

2.2 Ambiguity Comfort

Communication is not the only flexibility that matters. Design researchers multitask most days and these include sketching, prototyping, writing, presenting, and interviewing, just to name a few. Projects can change quickly and each project offers new experiences. As qualitative researchers, their encounters with various cultural groups are common, some of which a researcher has never before interacted with. Discussion guides are used for interviews, but as one participant pointed out “I am

comfortable with shifting gears to adjacent topics in the midst of the conversation, then going back to the discussion guide."

2.3 Failure Tolerance

This refers to accepting failures with an understanding that they can lead to improvements. Some researchers are more comfortable with this than others. Many researchers encounter failures in the design or prototyping phases, and these remain as hypothetical ideas as they go through iterations and evaluative processes.

Similar to ambiguity comfort, failure can occur when working outside a comfort zone. Some participants noted that having a curious nature and tolerating critique by other people are beneficial traits to have during new encounters. An easy going personality is important here and as one participant states "honesty and reflexivity is part of how we do our work."

Failure tolerance is important, but one article's research showed that mistakes were more tolerable in an academic situation. However, this article presented research with occupational therapy students, where mistakes in the real world could have harmful effects.

2.4 Teamwork and Leadership

One participant worked for a Bay Area Japanese company, and said they benefited by a Japanese work ethic which included team spirit, goodwill, and a collective desire to achieve. Other participants mentioned the idea of a cultural fit, as being personal and work style similarities, but were vague on the details. However, one

participant did say she thinks she was hired because she had similar qualities as the manager: quick, friendly, and bold. She was also sad to see a coworker leave because they shared an interest in philosophical discussions.

The concept of "leadership" in this project appears in academics and the workplace. In academics, one article notes "Faculty need to create specific interventions for interdisciplinary classrooms and contexts to assist students in overcoming the barriers of disciplinary egocentrism" (Richter and Paretti 2009:40). Leadership in the design research workplace meant that a leader was someone who could do a little of everything, and be able to shepherd along all the team members. They should make sure that team members learned from each other, and set up a work environment that encouraged this. A participant who once worked in professional sports said it took between two and three years to build a high performance team, and that the business world has either not understood the model on how this is accomplished, or neglected it. The main point was it took time to build a team, which relates to building relationship bonds. External contractors or high turn-over rate of employees works against the importance of a team relationship.

2.5 Passion

Most of my participants mentioned passion. Taken collectively as to its importance; passion builds team cohesion and helps the team move closer to their goal. Researchers must be passionate about the design research industry and its potential, the project that is being investigated and adding value for the client, and excited enough

about a project to work in a high-performance capacity. More on the value of passion is included in section 5.3

3. Disciplines

The historical evolution of disciplines is beyond the scope of this project. The focus here is on the attributes that can be gathered from current academic disciplines. I define these attributes as being the skills, methods, and theories. According to some participants, these can be transformed in the workplace, and their uses in design research vary depending on the type of research team and by a project's need.

Skills are the activity and knowledge particulates. An example would be having an understanding a foreign language. Methods are processes of applying skills for reaching goals. For example, a foreign language might be necessary to use during an interview with a participant. I define theory as ways of perceiving and explaining how and why particular phenomena happen. If a researcher is interviewing a participant using a foreign language, theories such as linguistic relativity and proxemics could help with better understanding the interviewee's meaning and non-verbal communication.

The previous example breaks down the attributes that could be learned in a foreign language class and courses in linguistics or social theory. Of course, learning takes place outside of academia as well. A participant provided this example: "Annie has a background in chemical engineering, and then she ran a business in Chile where she picked up her language and consulting skills. She came back and entered a design program." This illustrates someone who had broad experiences and perspectives, then

applied her abilities to design research. In essence, the abilities that could prove useful can come from anywhere, so it is advisable not to make assumptions of a person's capabilities. Some participants mentioned they looked at writing samples of potential employees, as they did not assume someone with a humanities or social science degree could write well.

The discipline of Theater might become more prevalent in design research. One participant noticed that theater students had better collaboration and improvisation skills than students from other disciplines. A 2011 article titled *Interdisciplinary Role Play: Nursing and Theater Students Advance Skills in Communication* provides an account of theater students learning about patient and nursing roles, while nursing students had a real person, playing a patient, to interact with.

Some other participants pointed out that, engineers, no matter which kind, share a similar engineering view of the world, where "they will be logical, linear thinkers, and will be good at working backwards to see how to get from A to B." Geographers on the other hand, could be useful for analyzing spatial data, and juggling the various relationships that appear in thematic maps.

Theory was said to be used to frame some research projects, however many researchers never cite a particular theory. They all thought it was the most difficult to apply, even in school. Most preferred to use grounded theory, preferring inductive and abductive methods of data collection and analysis.

It appears that many design researchers build the composition of a team based on the project needs, an example being if they needed someone who spoke Spanish. It became obvious during the interviews that most participants did not have an understanding of what all the disciplines could offer. One participant mentioned they would have a more refined approach in choosing a teammate if they knew more about each discipline. However, it still came down to whether or not they would be a good fit for the project. A few participants said they have to subsume their disciplinary knowledge into a project, "secretly dipping into your back-store of experience and methodology and foundation." This brings us back to tacit knowledge, implied ideas, and opacity as to what each discipline is capable of contributing.

4. T-Shaped

A generally accepted definition of a T-shaped professional is someone who has an expertise in one area, and has enough experience in other areas that they can work and communicate effectively across those disciplines. In other words, they are interdisciplinary individuals. The idea of being T-shaped is valued in design research, and the industry-famous agency, IDEO, has touted its value soon after the consultancy's establishment.

Most participants agree that having and utilizing T-shaped practitioners on a team has many advantages. It creates redundancy, so if one expert is not available, the T-shaped person can fill in. It lends naturally to multi-tasking. It facilitates communication between team members. T-shaped people are a source of various

abilities that can be put into practice. And, the T-shaped concept can appear in people in various degrees of breadth, some people being more T-shaped than others. A participant used the term Q-shaped, where "You need to understand the whole world around you, 360 degrees, but be able to break through to the center in one particular area."

Expertise matters and many design researchers are hired based on a specialized area. One participant, who works for a large agency, mentioned they have an in-house photographer who constantly has work to do on various projects. Another participant from a different large agency said he was hired for his expert knowledge in photography and its associated technical equipment. These people can evangelize their discipline if they want to inspire other people and help those people learn more about a particular expertise.

A participant noted that "design research is becoming more crystalized as an area of study," and this includes Stanford's d.school. The d.school is closely affiliated with IDEO, and the d.school Fact Sheet has this to say:

> *At the d.school, we help to create "T-shaped" students. They bring a deep set of skills, knowledge and approach to problem solving from their own field; we help them develop the breadth and creative confidence to collaborate with people from vastly different disciplines. This equips students to tackle the big, ambiguous challenges they'll encounter out in the world that can't be solved with a single approach.*

Many participants agree that school is a safe and suitable place to experiment, but caution that becoming T-shaped or "hybrid" should not be forced or

institutionalized, as it could just create another limited discipline. An article on disciplines had this to say about service-learning across the disciplines, “Higher order thinking and problem-solving skills grow out of direct experience, not simply teaching; they require more than a classroom activity. They develop through active involvement and real-life experiences in work-places and the community” (Zlotkowski 2001:25).

Participants also mentioned work experience as being at least as important if not more important than schooling. A few had previous teaching and research experience. One participant was already doing human-centered design work before he went to get formally trained in it. Another link with work is the various domains that practitioners come from. This can lead to different types of clients by having a team member who already understands a particular field, and may even have contacts within it.

There are many ways that contribute to becoming more T-shaped. One is learning on the job at an agency. One company encouraged their engineers to spend time with the researchers out in the field. One participant mentioned his experience with discussion guide development. Being a graphic designer, it was his first time writing a guide. His teammates gave him pointers and reviewed it for revisions. All it took was a little investment and attention to allow him to develop a guide that could be put to use. Another participant simply stated “Designers need to actually do research. Anthropologists need to actually design something.”

As previously mentioned, T-shaped professionals are important to have in small agencies. This is especially true if they want to grow an offer, branch out into other

domains, or take on more work. One participant said they did not have many people, so they compensate by being T-shaped. One company used to consist only of engineers and industrial designers, where they each had to be a “Swiss army knife” until they were able to hire people with research backgrounds.

5. Solutions

Participants offered ideas and explained how they strive to practice interdisciplinary collaboration. The themes that emerged are *Communication*, *Team Culture*, *Adding Methods,* and *Tools*.

5.1 Communication

As mentioned in the previous section, T-shaped people improve communication. Participants indicated “An interdisciplinary person increases the probability of shared languages,” and “Once you get T-shaped people on interdisciplinary teams the shared language is a way of looking.” An article notes “Common language and methods are the currency of meaningful interdisciplinarity” (Robertson et al. 2003:20).

Some participants listed politeness, respect, and a bit of humbleness as attributes that support effective interpersonal communication. They mentioned it was important to listen deeply, be gentle during disagreements, and not to speak over each other. Others mentioned open and frequent communication as being valuable in that it allowed team members to clearly understand what was happening and kept them informed. The traits of failure tolerance, self-reflection, and being comfortable with critique assisted in open communication, where team members were not afraid to ask

questions and they would be able to challenge each other. As mentioned, leadership can help shepherd people along, and one participant suggested that a good leader will help people to connect, mediate, be aware of mistakes, and co-create an environment for solving problems together.

Vocabulary can be learned on the job. Some participants try to learn the vernacular of other team members. Some say it is challenging but necessary at times and one participant stated “If she is not available for a meeting, we can talk eloquently about research. That is kind of a new challenge. The sales guys are getting ramped up on how to market and sell the research part of it.”

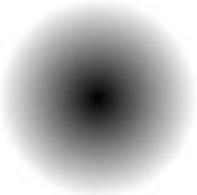
5.2 Team Culture

According to researcher Michael Harrison, “culture includes norms and understandings about the nature and identity of the organization, the way work is done, the value and possibility of changing or innovating, relations between lower and higher ranking members, and the nature of the environment” (2005:29). An article on teamwork had this to say “Strong social ties among partners are a function of prior favorable interactions, interpersonal and professional similarity, and general affective states such as liking and friendship. All these factors tend to encourage the extensive interactions that are required during knowledge sharing and joint problem-solving” (Porac et al. 2004:664).

After reading similar literature and all the transcripts, I began to think about the concept of “Family.” Close-nit families are capable of withstanding threats to their

organization. Their common language and culture allow them to collaborate. Disagreements occur, but even after intense emotional encounters, they are able to solve the problem together and move forward due to the strong bonds of the relationship. They are able to separate for periods of time then come back together. Team culture is more important than individual interests, as some participants pointed out with "I think when you are working on interdisciplinary teams you need a love that is stronger than the design or concept. Those things have to be weaker than a friendship on a team," "To allow people to come in and feel like they are contributing a unique experience, yet have a culture that is strong enough not to be fragmented by that," and "Where we are intersecting is not so much by discipline, it is really by the culture."

Having a strong team culture is important for allowing team boundaries to dissolve in order to explore other areas of interest. Here is a simple image I made to represent this concept:



The team has a strong cultural core that keeps it together but the boundaries are fuzzy, representing outreach and exploration of other disciplines or any new areas of interest. A participant's concept of the agency he works for lends support to this idea

saying “Like some sort of cloud that is moving and morphing, within it there is the company which is being shifted and changed, but is still remaining a version of itself.”

5.3 Adding Methods

One goal for this project was for me to turn the analytical lens back on the agencies, in order to help prevent their stagnation or ending up in a homogenized “soup” which could impede their progress towards being more interdisciplinary. Some participants do think about and experiment with new ideas and practices so they can possibly find a way to add them on a future project. Articles on interdisciplinary collaboration had this to say “small steps and moderate success can make a real difference in strengthening collaboration” (Long 2001:279), and “data-driven decisions only ever produce incremental innovation or change” (Walters 2010). One participant pointed out that “everyone brings a different approach. We are on the same road, with accretive additions to what we do.” A few participants mentioned that they have spoken with other design researchers about methods, and they have seen what has and has not worked.

Time issues will always be present, but opportunities for collaboration and adding methods, depends on how the time is used. Some participants mentioned slower times, when projects had extended due dates, allowing team members to hang out and discuss project issues or tangential topics. One mentioned “If it is a happy, experimental mood, clients or bills not breathing down our necks, deadlines to meet, then we could get all creative and do what we want.” For an academic setting, a participant mentioned

that a short time period for a project can still occur, and observed there were projects when an abbreviated approach worked out better than he expected.

A participant mentioned that skills and methods could be integrated into a project, such as bringing a “non-designer” into a brainstorming session and allows them to practice sketching out ideas. This way a separate training program is not necessary, but patience is. Another participant mentioned how industry can inspire inspiration, such as “spending time at Disneyland to experience how line waiting can be delightful.” Interest in learning new ideas, skills, or processes is a necessary attribute, and passion for the work they do helps them to be mindful of their practice even when they are not at work. This is similar to the passion someone has for their hobby, when they look forward to spending time with a project, without receiving payment.

This is the added value that I see with passion. There are examples of salaried employees that use their time working even when they are not required to. An anecdotal example is when I spoke with someone from Google who noticed this behavior among some coworkers, asking them to go home but they wanted to stay and work. I do not have data to prove that working more than required is due to passion, but I think it could be a factor worthy of further research. If someone is paid a good salary and love what they are doing, it makes sense that they will desire to continue doing it and try to improve their practice.

5.4 Tools

The following tools were mentioned and explained in the transcripts and the literature. Tools are the artifacts, processes, and environments that support collaboration. The most important team attribute that has to be present for expanding interdisciplinary collaboration is openness to sharing and accepting ideas, and experimenting with tools.

- Network: One way to avoid tunnel vision is to utilize a network of fellow design research practitioners and clients, by allowing their ideas to permeate the agency. Bringing in external people to critique helps to challenge the status quo and evaluate design ideas.
- Measurement: Observing and keeping track of activities increases the rigor of projects. Like most research, being explicit in the methodology allows others to replicate and learn from it. It is important to know what is actually being done and the context surrounding it in order to measure the effects that interdisciplinary encounters has on outcomes for the client. This however is difficult to implement because it is a micromanagement process that most design researchers are not interested in doing. Much of the literature on this topic states this as still a barrier and current research on the matter continues.
- Environmental scanning: Scanning the environment to identify opportunities for interdisciplinary work. If an agency wants to expand their domain and offerings,

one way of doing this is to be proactive in seeking out those opportunities (Long 2001:279).

- Role play: According to a recent article “Role play allows students to explore behaviors and make decisions in an environment that allows experimentation without risk” (Reams and Bashford 2011:43). This idea has been in use to some extent when the participants of design research agencies interact with prototypical products, services, or spaces during the research. However, further development of set design or improvisation skills by researchers might prove useful.
- Short iterations: This can take the form of frequent communication that updates team members to keep them on track and provide course correction as needed. It also includes designs, concepts, and prototypes that are evaluated by the team as ideas become apparent. An artifact that is in common use for this process is the whiteboard.
- Co-Lab: A work environment that support collaboration. The space(s) can consist of sketchpad tables, beanbag chairs, and inspirational materials such as books and toys, all surrounded by whiteboard walls. The area can be used by anyone informally or formally.
- Glossary: This is used to provide single definitions for terms, and to check against the definitions other people use. A team should use the same definitions in order to clarify communication. It can also be used with the client since they may have

their own definition of terms. This is especially useful since people from various work and academic backgrounds use language in different ways.

6. Recruitment

Recruitment refers to hiring a full time or temporary employee, or choosing a current employee for a team project.

Journalist Helen Walters was referring to “design thinking” when she mentioned that hiring processes do not think laterally when deciding who to hire, or how their organization might thrive and innovate for the future. The unhappy results being organizational atrophy (Walters 2010). This idea also applies to the limited use of interdisciplinarity. I mention its *use*, because design research teams may represent a variety of backgrounds, but are not necessarily accessing its potential.

Agencies prefer to hire interdisciplinary people who have a fair amount of experience in various fields, including design research. Some participants however, have shown interest in experimenting with disciplines by temporarily recruiting people from the disciplines of history (having skills around insight and framing), and chemistry (who would have actual and conceptual modeling abilities). This is when recruiting temporary contractors is valuable; as they can be a sort of “rent-to-own,” observing how people work together and any added value that new people might contribute. Some people are recruited based of their expertise that fits perfectly with a project.

One development is the idea of “hybridity,” where disciplines merge and transform, offering a blended new way of thinking. Hybrid people do not fit into neat

boxes, they exist in that 'fuzzy space' (Dykes et al. 2009:102), and as one participant said "The interesting stuff is in that space between disciplines." San Mateo based design research agency, Jump Associates, advertises their employees as being hybrid thinkers, and offers examples on their website of hybrid thinkers already working in other industries. This lends an exciting possibility for the future on how people might be applying their abilities.

Problems associated with all this is when recruitment entities are not observant or informed of new possibilities that a person could offer, or when people seeking work in design research are not aware they have an ability that is potentially useful or do not know how to market their abilities. Preconceived notions or ignorance of disciplines, work backgrounds, and extracurricular activities hinders recruitment.

7. The Future

Although this project's focus is on design research, interdisciplinarity is gaining attention across industries. The president of the Council on Competiveness (consisting of CEOs, and academic and labor leaders) says that "the T-shaped skill set is emblematic of the need for creativity, problem solving, communications, customer relations, computing, collaboration, and teamwork in the 21st century workforce" (Harris 2009: 46). It has been suggested that almost one-third of the future workforce will be flexible, creative, culturally agile, risk taking, and transcend traditional disciplinary knowledge (McWilliam et al. 2008:248-252).

What will happen in design research as agencies become more interdisciplinary in practice and disciplinary boundaries blend together into something new? Most of the literature points out that people not educated in design are designing, and a diversity of disciplines has become commonplace in design research (Dykes et al. 2009:99-100). University presidents and many professors say they understand the importance and value of interdisciplinary collaboration. However, school curriculums are not keeping up with industry needs (Harris 2009:46). If more people become aware of interdisciplinary collaboration, the concepts of T-shaped and hybridity, and are able to put these into practice, the pool of talent will increase. Specialized design research agencies may see a greater shift in their offerings and a move to other research domains (e.g. immigrant and refugee movement, community and housing development), if more companies implement in-house design research departments and no longer relied on independent agencies for help with product development.

Design research has always been about constant evolution and experimentation (Simonsen et al. 2010), and my participants had their own insights about its future. *Partnering* was a theme that emerged from the discussions. Clients have shown interest in becoming more involved in the processes, and would like design researchers to "stick around" and help validate the usefulness of the research, instead of just handing a deliverable off to them. Fostering community among design researchers, clients, and the people that use their inventions, was said to be a way to be more successful.

SonicRim recently held their first monthly activity called “Whiteboard,” in December 2011, where people are invited to their San Francisco office to collaboratively discuss a topic of design research interest. And finally, as one participant noted, the future of design research will comprise of young enthusiastic people bringing in new perspectives, who would also learn the knowledge and abilities of experienced design researchers.

Conclusion

The experiences of this project and my internship have given me a deeper and broader understanding of design research, interdisciplinary collaboration, and the relationship between the two. This understanding has given me insight on how to proceed with deliverables.

A goal during the research was to raise the issue of interdisciplinarity with participants so they might give it more thought, and challenge their own practice. However, this approach is limited because the participants tend to get caught up in the inertia of day-to-day tasks, a common occurrence in most businesses. In order to motivate design researchers (including my participants) to take action towards improving their practice along interdisciplinary lines, I first had to find out what would motivate them.

Design researchers strive to add value for their clients. Many participants have expressed interest in expanding upon this. They mentioned ways they are doing this such as helping clients to implement the design ideas and providing them with some

education and insight into the design research processes. Participants have expressed interest in increasing their client base, receiving more work from existing clients, growing their offer (e.g. deliverable type, services), and expanding into different domains (e.g. green-tech, sports equipment). Not all clients care about the methods that are used, including interdisciplinary ones. They do however want to understand the value of the research (impacts and measurements). Clients also want to know that researchers care about the product or problem, to receive actionable, new, and safe (not too risky) ideas, and to save money. If an intention of design researchers is to advertise the value of interdisciplinarity, then it is important to show projects of varying types (i.e. not just cell phones) in order to inspire cross-domain solutions (e.g. bio-mimicry products) for clients to see.

Team members have expressed their desire to utilize their capabilities, and apply their passions and interests. They want to be listened to, be inspired, and feel valued and add value. A way for them to achieve this is to have access to resources, be part of a healthy team relationship that is open to new ideas, and have a relaxed atmosphere that also challenges them.

Design researchers are not expected to know everything, even the broad T-shaped person that happens to have deep expertise in more than one area. They do tend to be curious, and some participants mention they like to explore various domains and disciplinary offerings when they have time. The lack of time is a major barrier for any endeavor, including experimentation with new ideas.

This project may or may not have inspired participants or their teams to take action based upon our conversations. I did however provide participants with an assessment report, which again, may or may not have inspired action. Leaving the project alone was not an option, because all that did was to provide me with a greater understanding of the issues, many of which the participants were well aware of.

I wanted to intervene with a tool that could be used by people interested in interdisciplinary design research, and motivate them to take action. It would have to be a practical tool that was easily accessible and saved time. The tool would address some of the issues regarding interdisciplinary collaboration. Increasing interdisciplinary collaboration would broaden and deepen the research, leading to improved results for the clients (assuming that increased interdisciplinarity has a positive effect on research results). The tool should encourage knowledge sharing and make disciplinary knowledge transparent. It should also provide short, current, and relevant real-world examples of interdisciplinary collaboration being successful in design research.

The tool is a website that is still a work in progress, and is explained in the next section, Intervention Deliverables. If the website is not successful, I would want to know why, in order to move forward with possible solutions.

Intervention Deliverables

Assessment Report

I prepared an assessment report in September 2011, and emailed it to participants in October. It included a summary of the project, and asked for feedback so I could learn if anything in the report was useful for them, and elicited further participation in the form of a workshop or brainstorm session to discuss any topic in the report. Topics included the themes with some supporting quotes, my insights, a list of 'what ifs,' and a sample count of disciplinary backgrounds represented in design research.

The goal of this report was to once again raise awareness of the issues that participants were challenged with, and to inspire opportunities for improving their practice. I received a few email replies saying they would read it, but only one reply mentioning it included all the key points, along with ideas on how I could improve the report. Nobody showed interest in the workshop.

Upon reflection, I should not have sent this report because it was not a complete picture of the project, and the initial analysis was lacking, since it was my first round of analysis. Although the elements included in the report could have inspired some action by some participants, I have no way of knowing for sure.

Website

The website design (Appendix F) began in January 2012 and is a work in progress. The analysis of my data revealed what the necessary interventions should be. Participants expressed interest in learning about what other disciplines had to offer, sharing their knowledge with co-workers or with practitioners in the design research field, and expanding what they can offer to clients.

The main idea for the website was to be a "one stop shopping" for people interested in interdisciplinary design research. In fact, my original title for the site was "Journal of Interdisciplinary Design Research." This title is suspended for now since the word "Journal" has connotations that might not relate to the website.

The site would be free to use by anyone, supporting the idea of fostering community. Contributing to the site would require signing in as a member. The website pages and content would help to address some of the problems of implementing, expanding upon, or maintaining interdisciplinary collaboration in design research.

The core of the website would feature relevant articles that people could submit, however more importantly would be summaries of their own research that explicitly showed interdisciplinary collaboration in practice. A concern that came up by two of my committee members was how to entice people to post a summary. My own observation and participation of various collaborative websites provides examples of people sharing their ideas and useful tools without much prompting. People share on these websites to help other enthusiasts of a topic (e.g. video games, books), to obtain status in that

community, and they do so with the knowledge that their investment of one idea or tool will return in multiplication as other people contribute.

Another element of the website would be a forum. Unlike the forum on the AnthroDesign website, this forum would focus on interdisciplinary collaboration. The layout would be different as well. Instead of a continuous stream of posts, forum threads that any member could start, would segment the topics thereby guiding people to converse without disturbance from other topics or posts.

Other pages would include the following. An interactive glossary that people could add to would help people with their vocabulary. An interactive sketch board would allow people to illustrate an idea that could support their postings. A listing of disciplines would include information to educate people more about each discipline. A page providing examples of theory being used in a practical way could inspire people to use a theory on a project. A page called “Design Challenge” would be a place where people could ask for design research help for their project, or post a hypothetical project eliciting ideas on how a design problem might be tackled. Finally I would include a way for people to share their skills, methods, theoretical perspectives, and extracurricular abilities with each other, providing a network of talent that can be matched with projects.

Although there are websites that discuss interdisciplinarity, design research, and include an article or two on interdisciplinary collaboration, this would be a unique site that draws the relevant information together in one place. Designers are too busy to

search for articles spread across the internet, and to save them time, summaries would provide quick and relevant reading.

The design is still in progress, and I would want to gather feedback from design researchers, and make the necessary adjustments before activating the site on the internet. One challenge will be moderating the site to keep it clean of irrelevant information. I would also have to "seed" it with samples of article summaries, glossary terms, information on disciplines and theories in practice, before the site could be launched. Starting the site with examples has proven difficult so far. This made me realize the difficulty other people are having in locating unique (or at least very different) and inspiring examples of methods, disciplinary practices, and practical theories, that could add value in design research. If the website is successful, it would contribute to the incremental steps that help to improve design research.

Summary of Problem—Solution Connection

Overarching Problem

- Interdisciplinary interactions remain opaque.
    - Hides the extent and inhibits the potential of interdisciplinary teams.

Specific Problems

- Time is limited for interdisciplinary exploration.
- Work processes limit the addition of disciplinary attributes.

- Lack of knowledge about disciplinary attributes.
- Ineffective communication across disciplinary boundaries.
- Ambiguous definitions of terminology.
- Lack of personnel with the necessary traits and attributes to improve a project.

Opportunities

- Learn about disciplinary attributes and the results of interdisciplinary projects.
- Communicate effectively.
- Build interdisciplinary teams that access their full potential.

Proposed Solution

- Website dedicated to interdisciplinary collaboration in design research.
    - Articles on interdisciplinary collaboration.
    - Summaries of interdisciplinary projects conducted by participants.
    - Summaries of disciplinary attributes (specific to, and shared across).
    - Examples of theory in practice.
    - Interactive glossary.
    - Forum (structured by topic).
    - Network of website members (profile or resume, and attribute list).

Glossary

Actionable item: Concepts, procedures, or prototypes that inform the design of products, services, or environments, and are ready to be implemented.

Day-in-the-life collage: A visual diary typically compiled of photos and drawings of a day's experience, used to capture behavior and thinking patters, providing insights for design.

Ideal experience map: A visual typically compiled of photos, drawings, models, and text, describing the "ideal" or best situation or way of interacting with a product, service or environment.

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Appendices

Appendix A

Evaluation of Interdisciplinary Collaboration in Design Research
Recruitment Plan

The email will read as follows:

Subject line: Graduate Research in AnthroDesign at SJSU

Dear [Name]

I am a graduate student at SJSU working on a project that examines interdisciplinary collaboration in design research. I would like to interview you about your experiences and insights as a member of the design research community. The goal is to identify opportunities for improving interdisciplinary design research, and ways to communicate additional value to clients.

The interview should be 30 - 60 minutes, but could be longer if you like. I will be following proper IRB protocol, so consent forms will be used. Information can be made public to benefit the community, so you may disclose information that you are comfortable with. Pseudonyms will be used if you like.

If you would like to participate, please let me know what time and location is best for you. I am also available to meet with you and your colleagues for a group discussion instead. If you are not available, please let me know if you can suggest someone who might be interested in participating.

Please write with any comments, questions, or concerns.

Thank you,

Mark Pratt

Appendix B

Evaluation of Interdisciplinary Collaboration in Design Research
Clients of Design Research, Recruitment Plan

The email will read as follows:

Subject line: Graduate Research in AnthroDesign at SJSU

Dear [Name]

I am a graduate student at San Jose State University working on a project that examines interdisciplinary collaboration in design research. I would like to interview you about your experiences and insights as a user of design research consultancies (IDEO, Cheskin, etc…). The goal is to identify opportunities for improving the research findings you acquire from consultancy agencies. I am available to meet in the Bay Area, California.

The interview should be 45 - 60 minutes, but could be longer if you like. I will be following proper IRB protocol, so consent forms will be used. Information can be made public, so you may disclose information that you are comfortable with. Pseudonyms will be used if you like.

If you would like to participate, please let me know what time and location is best for you. I am also available to meet with you and your colleagues for a group discussion as well. If you are not available, please let me know if you can suggest someone who might be interested in participating.

Please write or call with any comments, questions, or concerns.

mark-pratt@live.com

510-673-5354

Thank you,

Mark Pratt

SJSU MA Applied Anthropology Candidate

Appendix C

Evaluation of Interdisciplinary Collaboration in Design Research
Discussion Guide

[Introductions]

[Project briefing]

For an understanding of interdisciplinary collaboration in design research, we need start with the current process in research methods.

1) Please tell me a little about your research team in terms of their work and educational backgrounds?
    a) What is your definition of design research?
    b) How does each researcher affect a study?
    c) How do team members share their own knowledge with each other?
    d) How do team members collaborate?
        i) Think in terms of individuals working on tasks separately or as a group, and when they meet to discuss findings.

    Variables such as personality, communication skills, social ties, and other forms of human capital will be assumed to play a part in research teams. So, acknowledging these variables and keeping them in check, we are focusing on disciplinary contributions to design research, and how they interact in an interdisciplinary team.

2) Interdisciplinary teams are typically seen as being valuable in research, especially when looking at broad, complex problems. How do you and your company apply interdisciplinary research techniques?
    a) How are team members trained or their disciplinary ideas utilized?
    b) How might “group think” or “mono-disciplinary” affect research?
    c) To what extent does interdisciplinary versus mono-disciplinary research matter?

3) There is an assumption that tacit knowledge and intuition from years of work experience are what truly guide research and analysis. What are your thoughts and experiences about this?
    a) Greater conceptual distance between disciplines can be seen as a barrier to collaboration. What other barriers can you think of or have encountered, and how do you cope with these?
    b) How is tacit knowledge and intuition a barrier?

4) Considering that your team members consist of *blank, blank, blank, and blank*, is each person being utilized to their full potential? How? Why?
    a) Is there anything being left out that you would like to see applied? What? Why?
    b) In terms of methods, theories, and skills, how do team members apply these?
    c) Why are multiple perspectives valued? How are these applied?
    d) How do you communicate the value of interdisciplinary collaboration to clients?
    e) What are the barriers or conflicts that might arise?

5) What disciplines are left out of your research team? Why?
    a) To what extent is there a significant difference between disciplines in regards to their value in design research?
        i) For example: An anthropologist versus a political scientist.

Keeping in mind that we want to identify opportunities for improving interdisciplinary collaboration, it is important to tease out the values that each discipline can contribute, and the similarities and differences between disciplines. For example, an anthropologist and sociologist might be perceived as having similar skill sets and practice ethnographic methods.

6) If this is the case, to what extent does it matter to have either one or the other on a research team?

7) How might practitioners coming from a particular disciplinary background be able to advocate their added value?

8) How might any barriers be turned into opportunities?
    a) How are embedded practices or conventions that are typically done out of habit or not really thought of, keeping design research from advancing?
        i) Think in terms of harnessing disciplinary knowledge that is not being realized, but might help to transcend current research practices.

Ok, that about wraps it up. Are there any comments, questions, or concerns, or perhaps relevant topics that you would like to include for further discussion?

Appendix D

Consent Form

Evaluation of Interdisciplinary Collaboration in Design Research

My name is Mark Pratt. I am a graduate student at San Jose State University. I am working on a research assignment on interdisciplinary collaboration in design research. The project is supervised by Dr. Charles Darrah at SJSU.

I am interested in your experience in design research. I would like to interview you about your thoughts, experiences, and observations as a member of the design research community.

With your permission, I will create an audio record of the interview. Your name will be in no way associated with the recording or the transcript. Both will be labeled by a code name.

I will also make handwritten notes during the interview. These will be used to keep track of important concepts that you raise in order to help you discuss them further and help me to learn more about your ideas and experiences in design research.

The interview should be between 30 – 60 minutes, but could be longer if needed.

The only possible benefit to you would be anything you learn from this interview, the findings in the final paper, and the experiences from the group exercise. I hope that the research will benefit the design research community by creating opportunities for innovation in research methods.

Any information that I obtain from you during the research can be made public. I will use a code name to identify your recording and my notes about it. I will keep your name and code name in a password protected file separate from the other material.

Your participation in this research is voluntary. You are free to refuse to take part, and you may decline to answer any questions or may stop the interview at any time. At any time that you sign this consent form, you will receive a copy of it for your records, signed and dated by the investigator.

If you have any questions about the research, you may call me at (510) 673-5354 or Dr. Darrah at (408) 924-5314.

I have read this consent form and agree to take part in the research:
:

I agree to the disclosure of my name in publications_____. Initial_____

I agree to the use of my pseudonym in publications_____. Initial_____

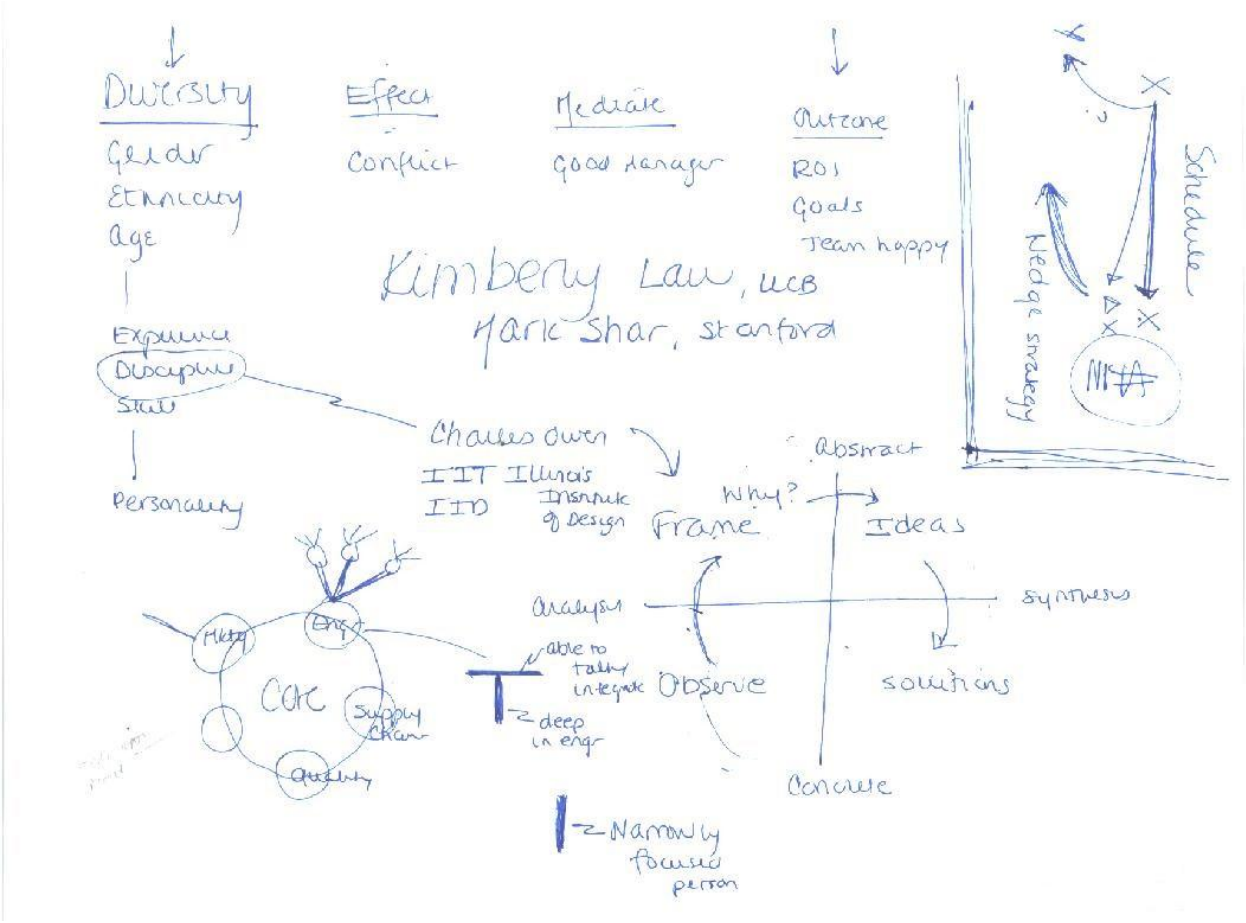
_____ _____
Participant's Signature Date

_____ _____
Investigator's Signature Date

Appendix E

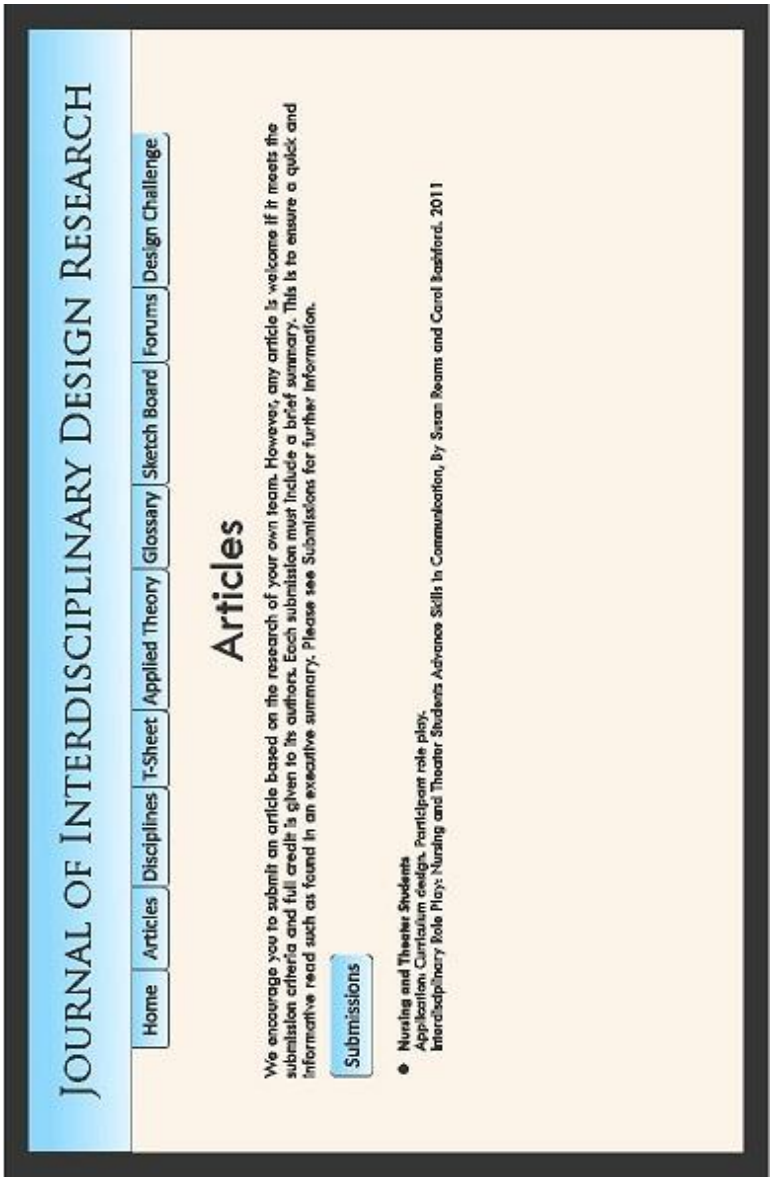
Sample of a Participant Sketch

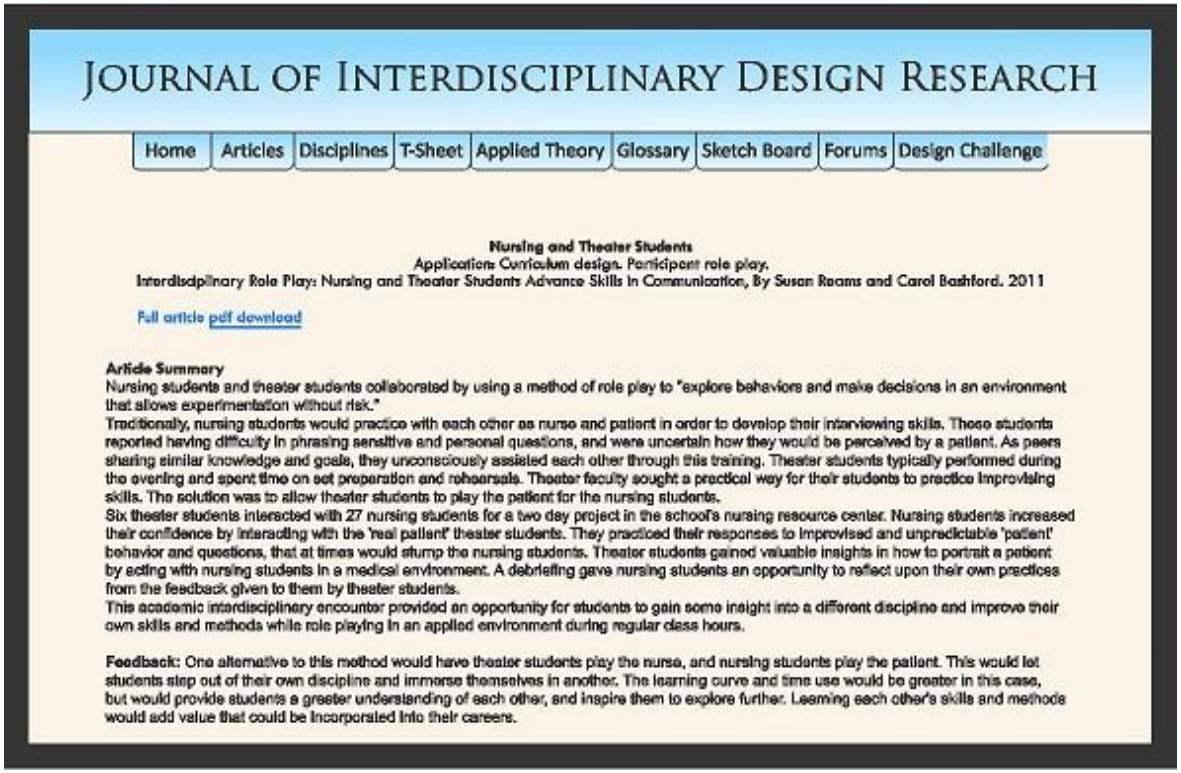
April 2011



Appendix F

Intervention Tool: Website





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Home | Articles | Disciplines | T-Sheet | Applied Theory | Glossary | Sketch Board | Forums | Design Challenge

Nursing and Theater Students
Application: Curriculum design. Participant role play.
Interdisciplinary Role Play: Nursing and Theater Students Advance Skills in Communication, By Susan Reams and Carol Bashford. 2011

Full article pdf download

Article Summary
Nursing students and theater students collaborated by using a method of role play to "explore behaviors and make decisions in an environment that allows experimentation without risk."
Traditionally, nursing students would practice with each other as nurse and patient in order to develop their interviewing skills. These students reported having difficulty in phrasing sensitive and personal questions, and were uncertain how they would be perceived by a patient. As peers sharing similar knowledge and goals, they unconsciously assisted each other through this training. Theater students typically performed during the evening and spent time on set preparation and rehearsals. Theater faculty sought a practical way for their students to practice improvising skills. The solution was to allow theater students to play the patient for the nursing students.
Six theater students interacted with 27 nursing students for a two day project in the school's nursing resource center. Nursing students increased their confidence by interacting with the 'real patient' theater students. They practiced their responses to improvised and unpredictable 'patient' behavior and questions, that at times would stump the nursing students. Theater students gained valuable insights in how to portrait a patient by acting with nursing students in a medical environment. A debriefing gave nursing students an opportunity to reflect upon their own practices from the feedback given to them by theater students.
This academic interdisciplinary encounter provided an opportunity for students to gain some insight into a different discipline and improve their own skills and methods while role playing in an applied environment during regular class hours.

Feedback: One alternative to this method would have theater students play the nurse, and nursing students play the patient. This would let students step out of their own discipline and immerse themselves in another. The learning curve and time use would be greater in this case, but would provide students a greater understanding of each other, and inspire them to explore further. Learning each other's skills and methods would add value that could be incorporated into their careers.


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