THE
IDENTITY CRISIS
OF DESIGN

Reflection and communication
of design as a practice
for and by designers

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Masters of Design in Communication Planning and Information Design
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A thesis proposal submitted to the
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ABSTRACT

The general population does not easily understand what design is (and is not) as a discipline. More surprisingly, designers have a hard time articulating the value of design. There is no universal lexicon, unifying institution, or tangible framework for understanding design that currently exists, allowing for many different philosophies, approaches, and definitions of the subjects, each justified in its own right but leading to inconsistent perceptions of the field of design overall.

The purpose of this thesis is to take these inconsistent definitions of design and attempt to create a common understanding. The value of this communication will help broaden the understanding of design as a discipline, in turn providing both monetary and emotional value for designers.

After considerable research with design educators, students, and professionals, the opportunity space to create a framework for methods for reflection and communication arose. The proposed solution, Design Dive, is a 21-day design challenge aimed to help designers (both practitioners and students) better articulate and communicate the nature of their work. The challenge is broken up into a discrete daily activity to be carried out by the participant in less than 10 minutes per day. The activities range in design methods, from defining design as a discipline to defining a more personal definition based on a designer's trajectory and workflow. The online component provides a platform through which the activities can be documented, shared, compared, and critiqued.

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INTRODUCTION

BACKGROUND

"Good design is invisible" is a commonly heard phrase within the design community. From Jack Dorsey (Pontin, 2011), creator of Twitter and co-founder of Square, to Oliver Reichenstein (Elezea, 2012), founder and director of international company Information Architects, many designers believe that good design "recedes" into the background to allow the user to have a seamless experience. As said by Erwin Braun, son of Braun founder Max Braun, "We want to produce products which fulfill the role of the old English butler; always present but always invisible" (Rams, 2013).

The ubiquity of design has allowed it to blend into our lives. With that said, there are designers that are behind the products, services, and systems that are created. There are decisions made about what goes into the products, what stays out, and how users progress through the experience. While good design may be invisible, the existence of design is undeniable. With design blending into the background, designers may also become slightly invisible. The identity of designers is only occasionally revealed, for example, buildings associated with the architects who designed them. However, in realms such as user experience (UX design) or design strategy, actual designers are rarely recognized for their work. There is no single defining characteristic of user experience careers (Nielsen Norman Group, 2013).

As a result, the general public that uses these products, services, and systems doesn't have a good understanding of what designers do or what the discipline of design entails. Their perception of design and the value it creates is skewed toward what is publicized by the popular media such as interior design or fashion design. When someone says "I'm a designer," it is not immediately clear what they actually do day to day. There are a number of different responsibilities encompassed by the umbrella term designer (Ming, 2014).

Through observation and research, I have found that there seems to be a communication problem regarding what constitutes the expansive realm of "design". It seems not to be easily understood or defined by the general population, and more surprisingly by designers as well. Designers struggle to articulate in layman terms what they do and their impact on the world, as is evidenced in various forums and discussions. They come up with a multitude of examples in order to explain what they do, ranging from calling themselves a graphic designer to be more easily understood to "I'm too tired to explain. The examples always seem to fall short of the breadth and depth of a designer's practice.

As both a noun and a verb, "design" can encompass many meanings. In the context of this project's investigation, design has become familiarized as an occupational discipline centered around art and technology (Sturm, 2009). Designers are designing products / artifacts, behaviors, systems / environments, and services. However, there is no universal lexicon, unifying institution, or tangible framework for understanding design that currently exists, allowing for many different philosophies, approaches, and definitions of the subjects, each justified in its own right but leading to inconsistent perceptions of the field of design overall. While there has been considerable work from the 1960s to the 1990s regarding the terminology around design, ordinary designers have difficulty articulating what design is. Even within design, each discipline owns a different set of skills, professional standards, and issues that drive how they operate in their process, only further complicating the picture.

Design is like a mom, nobody notices when she's around, but everybody misses her when she's not."
— Santiago Borray

RESEARCH QUESTION

The research question morphed and evolved as time went on to reflect the findings of the research and scope the problem space even further as outlined in the figure to the right. The questions address a problem space where designers already recognize communication of design as a problem.

2 step process of reflection and communication

How do designers understand design and communicate the value of design to others?

Focus on understanding design as a discipline

Originally looked at the public perception of design

The creation of an absolute definition is not possible

While we may have different perceptions of design (all of which are valid), how can we attempt to create a more cohesive understanding to better present a multifaceted picture?

The proposed solution has to incorporate different disciplines within design

With different connotations, each person has to define design for themselves

With increasingly ambiguous nomenclature, how can we empower designers to explain what is going on both inside and outside the discipline by using common terminology or methods?

The proposed solution uses methods to be able to speak in a common language with designers
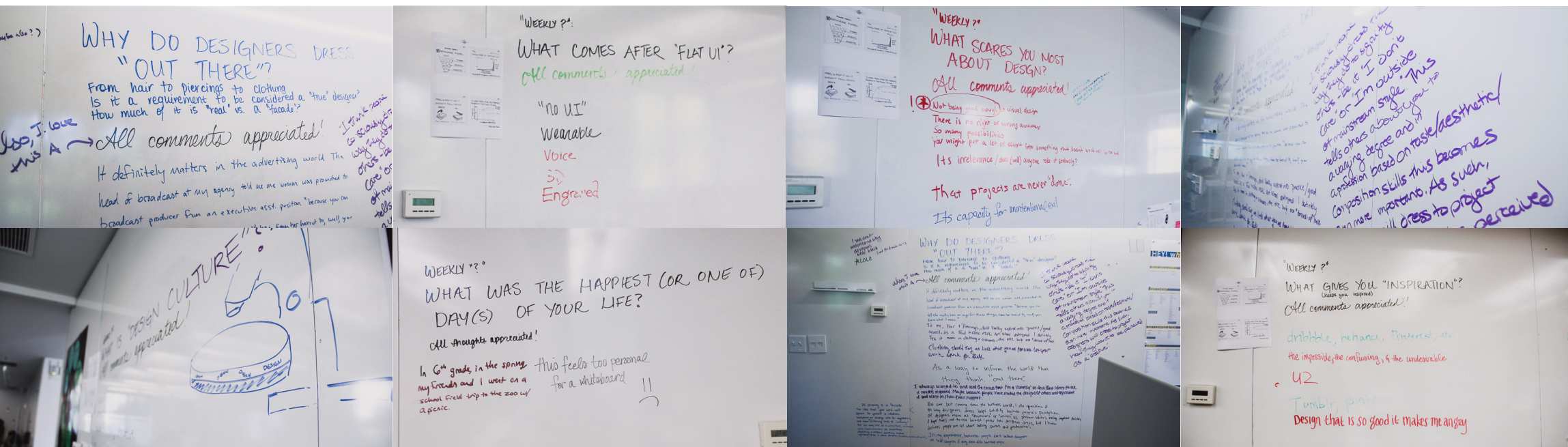
VALUE PROPOSITION

As a self-taught designer, I have struggled to define the field of design to many of my friends and family. After coming to Carnegie Mellon, I have also seen many of my classmates in the same situation. While my initial approach to the problem is a personal one, I have observed that the communication of design as a discipline undermines its value. Design's face value is what allows it to be either given a strategic seat at the table, or relegated to a method of cosmetic or visual styling further down the line in the development of a product, service, or system. While larger tech companies are beginning to recognize the value of design, there still seems to be a disconnect how those roles are defined after acquiring design companies (Kleiner Perkins Caufield Byers.). On a business level, defining design as a role on a team (as someone who has a particular skill set to apply) changes the monetary value (salary) as well (Ferro, 2014). However, evaluating the effectiveness and return on investment using quantitative measures is difficult. Qualitative measures must be adopted by companies to understand the design methods employed (Gube, 2010).

Educating the public on the value of design means better design for the world. This projects to a larger discussion of how we want to shape the future (incorporating design education into curricula and providing more career paths for children). Design education teaches methodologies for many of the recommended transformative academic and life skills of the twenty-first century (Lozner, 2013). Designers work to create more sustainable environments, increase cultural understanding, raise awareness of the citizen experience, and bring ideas and methods to social engagement through the projects that they pursue all in an effort to increase quality of life for others (AIGA). By learning about the value of a designer, people can better empower designers to create change they wish to see in the world.

My original goal was to develop a strategy to help the general public better comprehend what design is, understand what it entails, as well as what designers do. By doing so, I hoped to increase the value of design as a whole.

CONCEPTION

With a traditional background in fine arts (studio art and psychology), prior to coming to Carnegie Mellon, I had never experienced "design culture". All of my experience within design had been self-taught and with freelancing, I had never had the chance to speak with other designers. Having a non-design cohort alongside those with a design background, I suddenly found myself voicing many of the questions around "design culture". While we are all graduate design students, constantly talking about our work, I found that I had some fundamental questions about design that most people couldn't seem to answer. I started by simply posing the question on one of our many whiteboards in our studio, in a central space. The response was tremendous. The anonymity of the white board seemed to provide students a portal through which they could discuss the topic. Thus, I started posting a question weekly and photographing the answers. While they were at the time just a collection of photos, one idea was turning this into an information design piece. However, I then used this side project as inspiration for my thesis proposal.

PROJECT
DEFINITION

TERRITORY MAPPING

When I first began my thesis, I attempted to get a broad understanding of a variety of perspectives to better tackle the problem. The perspectives generally fell into the categories of exploring the perception and exploring the reality of understanding and communicating design.
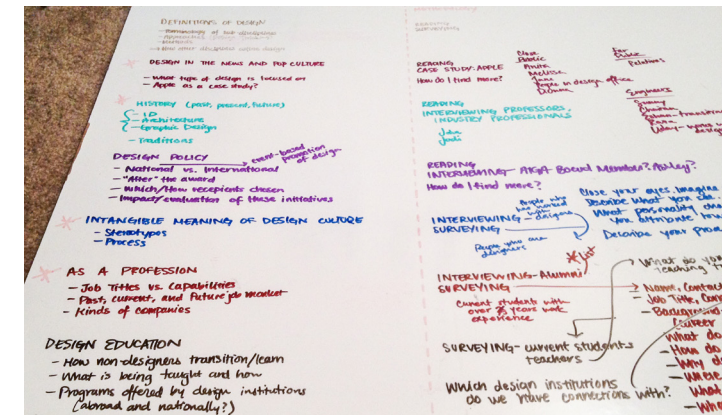
Exploring the Perception

Definitions of design (language-oriented)
The terminology of sub-disciplines (interaction design, communication design, etc.), approaches (design thinking, human-centered design, etc.), and methods (storyboarding, prototyping, etc.) contribute to the larger complication of the public design lexicon. As different stakeholders enter the picture and attempt to define the same term in different ways, the picture continues to become more complicated. Taking a look at how other disciplines (such as professional writing) have also carved out their information space helped identify techniques to solidify design's information space.

Design in the news and in pop culture
Naturally, the public perception of design hinges greatly on their exposure to design through the resources at their disposal. For example, industrial, product, and interaction design have been honored very graciously in the last decade because of Apple's products and promotions (both on their website and through television ads). The scope of this area is large but allowed for more exploration with regard to the type of design on which to focus.

*History (past, present, and future)*
Taking a step back to understand the field of design entails understanding the history of "how it came to be". The best known attempt to lay design on rational foundations was the Houchschule fur Gestaltung in Ulm, Germany. Starting as New Bauhaus in 1953 with roots in art and design, by 1956 its agenda had turned to teaching teamwork, science, research, and social consciousness in a modernist spirit. The Ulm School is typically seen as the first serious attempt at turning design into a science of planning. With rises in the popularity of industrial design and interaction design in the 1980s (Zimmerman, Binder, Redstrom, & Wensvee, 2011; Cross, 2006), the field has been continually amalgamating parts from different disciplines. Understanding the history of design better helps contextualize current practices.

Design Policy (public campaigns both nationally and internationally)
Many foreign countries have initiatives set up by the government to promote good design and increase the awareness and value of good design. South Korea, Germany, and Japan are just a few examples of countries that have set up such projects, although it is rare to find these initiatives in North America. The recent trend of event-based promotion of design (such as sponsored design weeks around the country) also falls under this umbrella.

The intangible meaning of design culture
As I attempted to understand what design is as a field, we must also understand what a designer is on an individual level. The concept of "design culture" is an elusive term taken to be associated with certain appearances and personality stereotypes of designers. There have been quite a few blog posts and articles published on the stereotypes of designers (albeit in different kinds of design). Understanding these stereotypes and how they are presented offers insight into the public perception of designers.
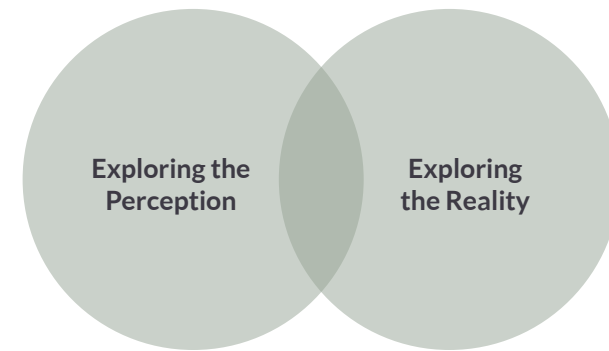
Exploring the Reality

Development as a discipline
The career path of a designer and how to get there has changed over the last couple of decades. Clarity of job titles and the roles played by designers will lead to a better understanding of their capabilities. Research into the current job market for designers and future of those jobs will give good insight into where it is heading for the future as well. Studying the kinds of companies that designers are working within design, as well as those companies looking to get into design (developing a "design culture") helped piece together the picture for the job market for designers.

Design Education
In teaching design it is important to note who is being taught (non-designer transitioners vs. new learners, novice vs. expert) as well as what is being taught and how (skills vs theory; formally vs. informally, etc.). I researched some the programs offered by design institutions through the definitions and summaries provided on their websites or their promotional material. By researching institutions both abroad and nationally, I compared not only the "kind" of design being taught but also the relative number of jobs within each realm of design (through conducted interviews).

SCOPING THE PROBLEM SPACE

I continuously redefined the territory that I was looking at in order to better break it down. This better allowed me to target specific stakeholders that I was interested in interviewing and surveying in my research. A brief overview of the problem spaces I tackled can be seen in the figure below.

I structured my research into three sequential phases, each with differing intentions and goals. The first phase of research — the Exploratory phase, aimed to uncover insights into user needs and reveal an opportunity space for a design intervention. Based on the identified opportunity space, in the following Generative phase, I generated multiple design concepts in order to reach one preferred future design solution. Finally, the Evaluation and Refinement phase involved designing and low-fidelity prototype testing the final concept.

EXPLORATORY RESEARCH

STAKEHOLDERS

It is apparent that there are various stakeholders within this problem space, ranging from a micro (students and professionals) to macro (educational institutions and large tech corporations). Integrating the perception of each of these stakeholders is important. However, the focus of this thesis is on the individual designer (student or professional). The designer is the point of origin of the understanding of design, so to better empower a designer would mean the proliferation of a more common understanding. Battling group influences also played a role in this decision. A focus on the individual designer would allow refinement of the prototype and an inherent consideration of the evolution of this project is that it would be scalable and applicable to groups. While it is important to constantly revisit how the proposed concept affects all of the outlined stakeholders, the final design targets individuals since they are the basis of the touchpoint. The scalabilty of the tool can then be measured more effectively.

The stakeholder map on the following page divides the designer's spheres of influence into two basic categories: personal and professional. As the personal sphere grows outwardly, the designer's clarity of the communication of their work as a practice decreases. However, in the professional sphere, the designer's communication stays consistent. The designer is motivated and cares to express their thoughts about design as a discipline.

STAKEHOLDER MAP

While this an attempt to map basic relationships the designer has in reference to their practice of design, there are many nuances to consider (example: mapping hierarchies within a design institution).

Personal

Professional

Strangers

Acquaintances (hair stylist, people you meet at a dinner party, etc.)

Friends

Design Friends

Extended Family

Nuclear Family
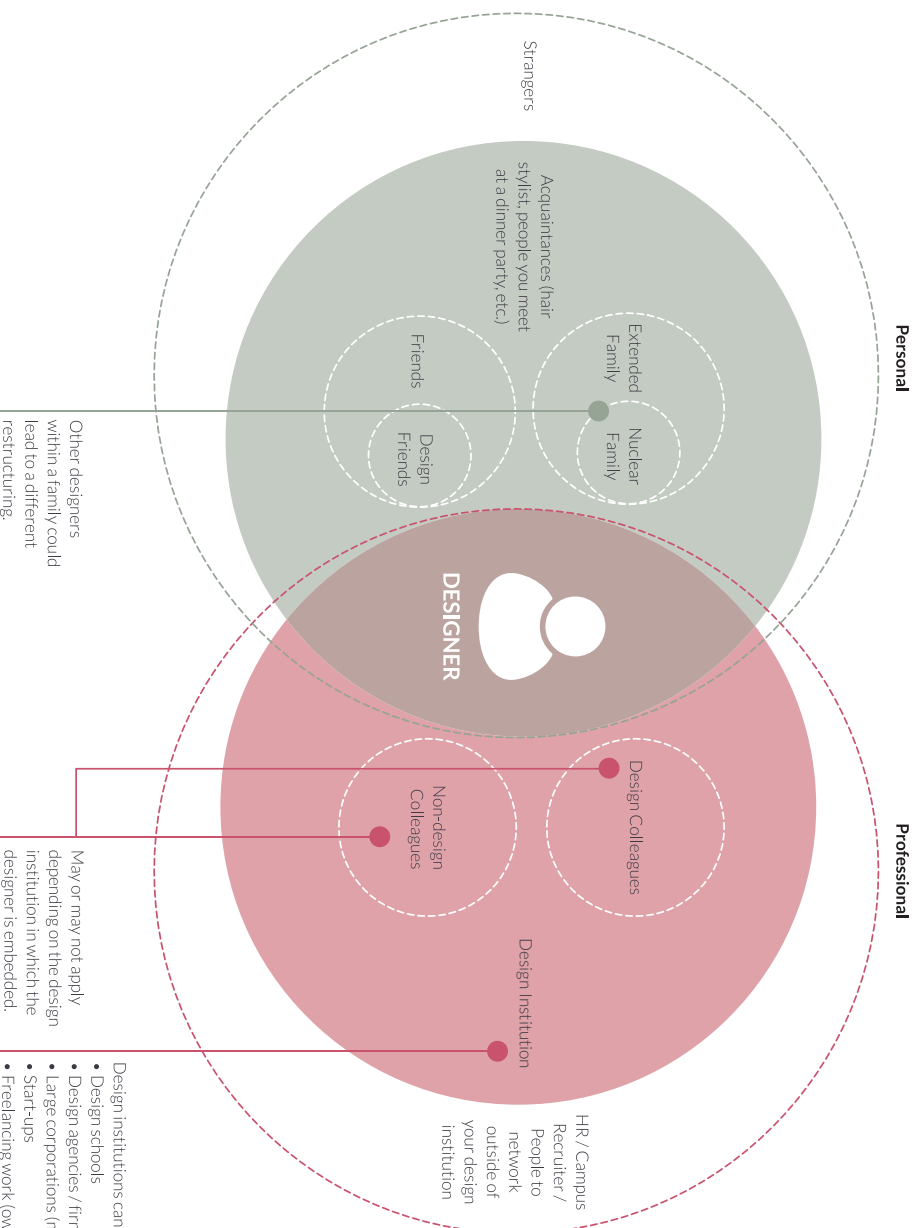
Other designers within a family could lead to a different restructuring.

DESIGNER

Non-design Colleagues

Design Colleagues

Design Institution

May or may not apply depending on the design institution in which the designer is embedded.

HR / Campus Recruiter / People to network outside of your design institution

Design institutions can refer to:
• Design schools
• Design agencies / firms / consultancies / studios
• Large corporations (mostly centered around tech)
• Start-ups
• Freelancing work (own company)

EXPERIENCE JOURNEY MAP

While simplified, the trajectories of designers contextualizes the implications of where the research would affect a designer's life (dotted circles show where value could be added).

Immersion into industry

Graduate design education

Mentors / Influencers

Out-of-classroom learning (classes online, workshops, etc.)

Pivotal experiences

3 - 4 years of work experience

Those with a design background

Undergraduate design education

Tangential spaces of interest

Those without a design background

Undergraduate design education

METHODS

I used literature reviews, interviews, and surveys during the exploratory phase of my research to tackle the problem space I scoped as well as understanding the viewpoints of all the stakeholders in play.

Literature Reviews

Interviews

Survey

Literature Review

To better understand how to approach this topic, the theory and literature spanned the gamut of design. From traditional theory and philosophy to reading blog posts on current job trends within the design industry, the literature review attempted to take a broad stab in identifying the opportunity spaces to further explore through more exploratory research.

The theory and literature spanned 5 main areas: design academia, design policy, industry / practice, language, and public perception.

LITERATURE REVIEW

Design Academia
- Comparison of Interaction Design programs at CMU
- Comparison of programs nationally
- Comparison of programs internationally

Design Policy
- National Policies in the US
- Event-based promotion of design
- International Policies

Industry / Practice
- Company differentiation
- Case studies of different companies

Language
- How to measure understanding
- Formalization of a discipline
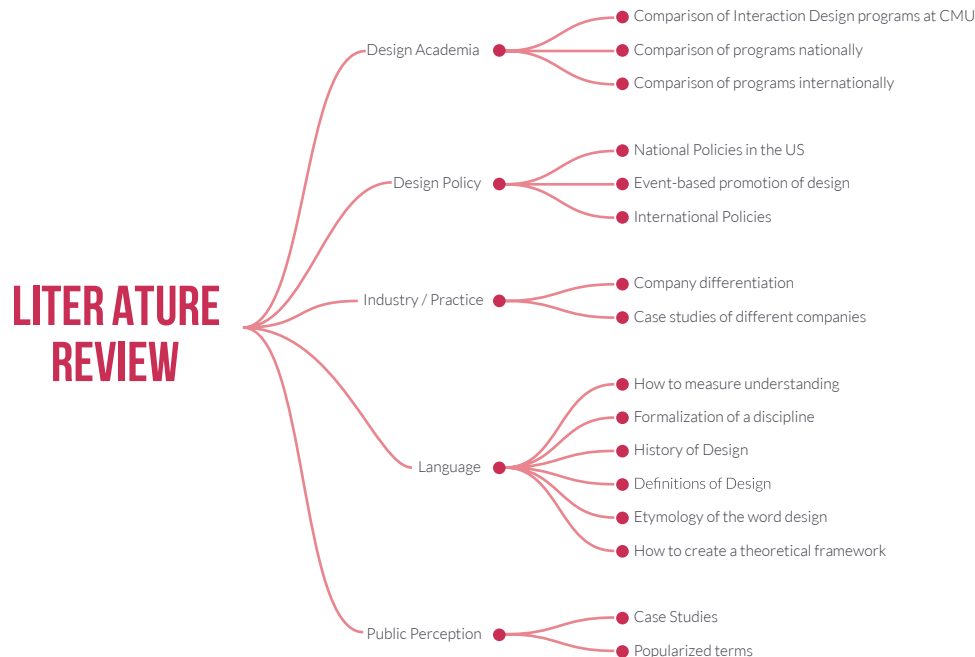- History of Design
- Definitions of Design
- Etymology of the word design
- How to create a theoretical framework

Public Perception
- Case Studies
- Popularized terms

Design as a discipline
According to Blevis and Stolterman (2009), what unifies a single disciplinary perspective is the belief in common notions of values, methods, and reasoning (VMR), where value is how you perceive your disciplines, method is how you engage in your discipline, and reasoning is how you represent your discipline. Breaking down this framework further, a common notion of knowledge-set, skill-set, mind-set, and tool-set unifies the perspective. The figure below outlines an example of these values for certain types of designers.

	VISUAL DESIGNERS	INTERACTION DESIGNERS	CONTENT DESIGNERS	SOFTWARE DESIGNERS
values (what design is about as a value system)	aesthetics affect culture	interactivity experience transparency	message credibility	performance correctness function
methods (what design is as activity)	creating form and image	designing for usability and user experience	understanding discourse and culture	programming, specification, testing, capability maturity model (CMM), object-oriented programming (OOP)
reasoning (what designs are as plans or explanations or representations)	sketches, look and feel, visual artifacts, appearance prototypes	prototypes, demonstrations, task models	text, images, narratives	programs, specifications, requirements, unified modeling language (UML)

▶ Table 1. Characterizations of some disciplinary perspectives in terms of values, methods, and reasoning.

	VISUAL DESIGNERS	INTERACTION DESIGNERS	CONTENT DESIGNERS	SOFTWARE DESIGNERS
mind-set	appearance	interactivity	message	performance
knowledge set	visual form	cognition	narrative	algorithms and data structures
skill set	drawing, sketching, brainstorming, illustrating	processes: contextual design, interaction design process, formative evaluation, iterative design, participatory design	secondary research, analysis, précis, narrative, indexing, tagging	processes: star, spiral, waterfall, joint application development (JAD), rapid application development (RAD)
tool set	image and illustration tools, photography, video, cultural artifacts	usability labs, rapid ethnography, low- and high-fidelity prototypes	classification, reportage, secondary research	software development kits, open source

▶ Table 2. Characterizations of some disciplinary perspectives in terms of mind-sets, knowledge set, skill set, and tool set.

Taken from Blevis and Stolterman (2009)
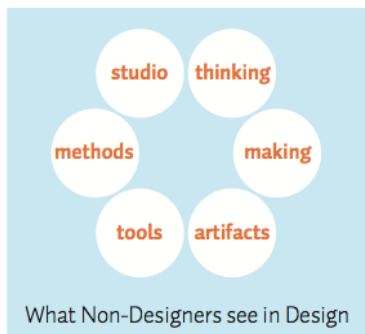
Although these sets apply to a disciplinary level, they hold true for individuals as well (as the figure above clearly illustrates). Thus, each of these sets can be utilized as evaluative measures to understand a designer. For example, plotting skills on a spectrum of confident to unsure and experienced to inexperienced allows designers to think about what skills they use most.

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Anne Burdick's framework (2009) utilizes a different framework to break down the discipline of design, but from the perspectives of non-designers. This is particularly useful to note as the final implication of the project is communication to non-designers as well as designers.

The diagram shown here indicates the aspects of design that were identified through the case studies that I will share with you today. Starting at the top and working clockwise, **thinking** refers to the generative and propositional act of ideation; **making** is the intentioned manipulation of materials and the creation of things; **artifacts** are finished, refined outcomes; **tools** are anything from soldering irons to Photoshop; **methods** refers to the iterative design process and applied problem-solving; and **studio** is the model of collaborative working in small groups. Just to be clear, this is not my version of design, rather it represents what this particular group of non-designers have seen in design.

Taken from Burdick (2009)

To better understand and communicate design's value as a discipline, it must be both researched contextually as well as in isolation. Daniel Fallman's framework (2008) in particular does a good job of isolating design as a discipline (more specifically interaction design) and breaking down it's components.
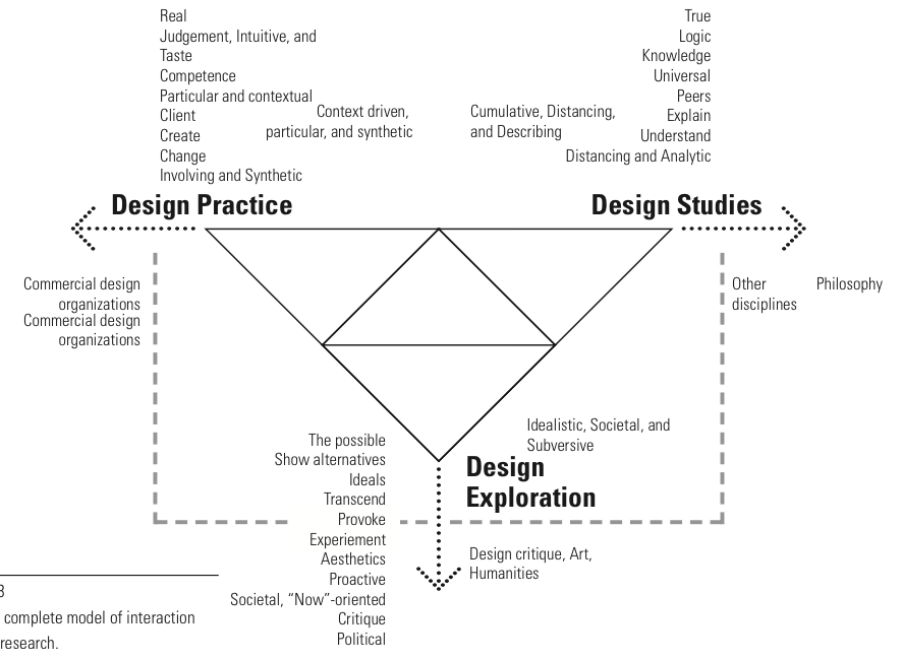
Figure 3
A more complete model of interaction design research.

Taken from Fallman (2008)

It's also important to keep in mind that the theories of the design fields have never been independent of the influences of other disciplines and the knowledge they provide of aspects of the world and how it functions (Lang, 1987). Manzini (2015) even goes as far as to outline three performative challenges, four substantiative challenges, and three contextual challenges that bind the design disciplines and professions together as a common field. The challenges also outline the obstacles to define a professional design practice.

Design as a reflective practice
In understanding design as a discipline, an important component becomes the learning and constant reflection that must take place to develop a practice. Donald Schön's work (1983) was one of the first contributions to the theory of learning that looked at the importance and essence of reflective practice. Schön theorized that articulation of designer's knowledge is only one part of a practice; learning-by-making activities (now more commonly referred to as thinking through making) also contribute to the reflection of a practice. Schön's framework for accessing this knowledge was reflection-on-action (reflecting on past activities) and reflection-in-action (reflection in the midst of designing). To better understand and target design processes, reflection of both kinds must be built in.

Schön also emphasizes the importance of a community of practitioners for providing its members with a common body of relevant knowledge. To be a member of a practice is to be someone for whom what is going on in the practice matters (Yanow & Tsoukas, 2009).

Communicating design
Equally important to understanding the ideas behind design is to be able to communicate them. While there is no universal definition of design, it was helpful to see the huge variety of definitions (and subsequent connotations) as a linguistic study. There have also been some attempts at creating common definitions (example: Maria Herrera attempts to do this with Information Design, 2013).

Part of looking at these understandings of design was looking at design process. Dubbery's "How Do you Design study (2008) was the most comprehensive body of work that contains "description design process models" or models of the design process. Processes, especially in design, become central to the practice as they are used as a tool for differentiation, communication, implementation, and innovation.

Survey

Understanding Design

Thank you for taking this survey. It should take approximately 10 minutes. This survey is part of my thesis for my Masters in Design at Carnegie Mellon University.

Vinita Israni
virani29@gmail.com
214.563.5796

let's get started   press ENTER

Please see Appendix A for the survey questions.

I sent a survey out to 100 individuals (without any background in design) and received 31 responses. The purpose of the survey was to understand the connotation of design for the general public. It asked basic question as to their perceptions of design ("What does the word design mean to you?) as well as any associations the person had with design ("Do you know any family or friends that are designers? Provide a brief description of what you think they do"). Associations in particular were called out as they are tied to group attribution error, or the bias that the characteristics of an individual group member are reflective of the group as a whole (Allison & Messick, 1985).

16

Design professionals
Addison, Catalyst Group, Citrix, frog design, IBM, LinkedIn, Microsoft, Phillips, Pivotal Labs, Pixite, Sibling/Rivalry, Siegal + Gale

16

Design students
Carnegie Mellon University, Emily Carr University of Art and Design, IADE Creative University, The Ohio State University

12

Design educators
Carnegie Mellon University, Parsons The New School of Design, Pratt Institute, Savannah College of Art and Design

Interviews

I conducted 40 interviews, spanning a variety of stakeholders (design educators, design students, and design practitioners; geographically and occupationally diverse) to understand perspectives of design. The interviews ranged from half an hour to an hour depending on the medium through which it was being conducted (remote vs. in-person) and methods used.

Looking specifically at Albert Linderman, Jeff Baker and Stephen Bosacker's work on sense-making interviews (2011), I attempted to focus on different ways to get information out of people. With nouns being the most misunderstood word type, I tried to steer the participants in 3 specific areas (as outlined by Linderman et al 2011): identification of strategic stories / trails (asking about their trajectory into design), creation of an action-step outline (listing specific associations), and gap exploration (asking questions that led to sustained reflection). This framework does not presume that practices are entirely the product of reason or cognition; sense-making may draw equally on aesthetic, kinesthetic, musical, or other sorts of significance (Gardner, 1993).

Taken from Linderman et al (2011)

Prior to doing the first round of interviews in New York, I pilot tested the entirety of the interview on one of my classmates, who gave me some helpful feedback in fine-tuning the procedure. Some of the feedback received was to make sure to give the person half the time during the card sorting activity to go through the cards and categorize / cluster / classify them and the other half to actually walk through the cards. Providing small sticky notes as labels as well as offering blank cards (for terms they feel are not included) was also essential. The feedback also encouraged me to add a couple of interview questions that were more casual but really got to the root of the problem. For example: "How would you introduce yourself at a dinner party?" (and alternatively "How would you explain what you do to your mother?")

I used a variety of methods to get these stakeholders to articulate some of the more intangible aspects of design including:

Interview questions
These questions spanned the entire range of the spectrum of design from asking about their trajectory into design to where they thought the future of design was going. The questions ranged in being prescriptive to open-ended. Each interviewee's background was also taken into account to better tailor questions to their background and interests.

Card sorting for cognitive mapping, concept mapping, and affinity diagramming
There were two card sorting activities planned: one for design concepts, and another for job titles. I chose to have 40 cards for the design concepts and 30 cards for the job titles activities. The conversion rate for sorting is about 20 minutes for 30 cards (Sauro, 2012; Ng, 2007, Hudson, 2014; Spencer, 2004), and I planned on giving the interviewees roughly 10 minutes to sort, and 5 minutes to explain. While this is quite quick, I want to play on their "gut reactions" and "perceptions" so I'm purposefully rushing them.

The card sorting activity in particular worked well since it was deductive rather than inductive (even though the interviewee was allowed to add blank cards and leave others out). It was great to see the professionals' eyes light up when I asked them to do the card sorting activity since they all claimed they didn't get to interact with many tangible things. The nature of the cards themselves (a business card cut horizontally in half) lent itself well to creating all kinds of shapes and arrangements (example: creating bridges or fanned arrays).

Directed storytelling, through the use of a MadLibs template
The madlibs template was used as a prompt to help the interviewee walk through their trajectory into design. The interviewee was encouraged to not even write on

the template itself but just talk through it as a starting point to create tangents about their understanding of design and what they do.

Free word association
I specifically asked interviewees to say 3-5 words on the following topics: design, designing, designers, and design culture. While design culture had the most vague answers because it was the most ambiguous, the distinct differences between "design", "-ing", and "-ers" was interesting to hear and document.

In planning the interviews, I used Liz Sander's framework for understanding design: Say, Do, Make (Sanders, 2002). I applied this framework both to the information acquisition (the kind of information I was collecting) as well as to the methods (how I was collecting the information). While coming up with these methods for "gleaning" information from interviewees, I also looked at physical mapping of trajectories in design, an idea which I got through a graduate level methods class taught by Bruce Hanington.
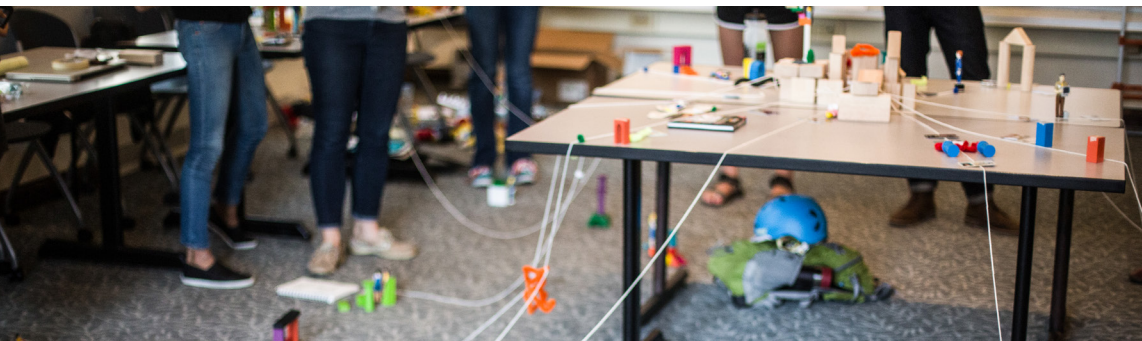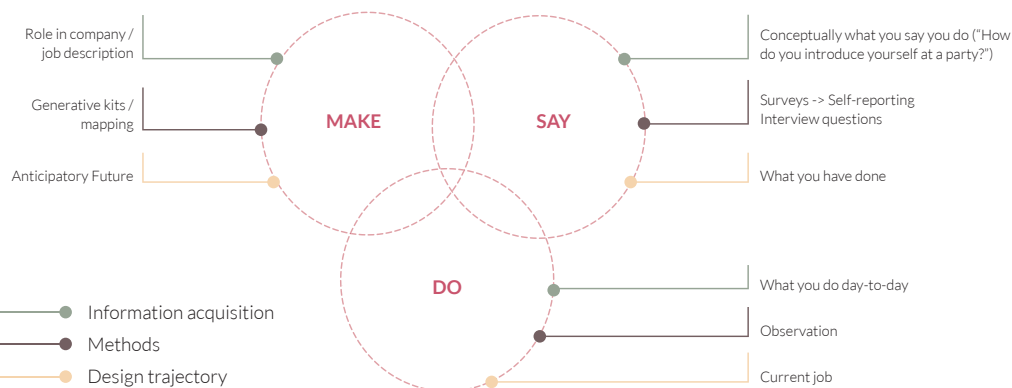
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The scope of the questions and activities definitely changed over time as I saw trends in my data and found gray areas to focus on. For example, one activity (that was suggested by a participant and proved to be useful) encouraged interviewees to map out deconstructed design job titles based on positive and negative connotations.

While prepping all my materials, I also took the time to individually research each person and tailor certain questions to them (based on either their background or the online branding presence they produce).

Please see Appendix B for the interview protocol.

THEMATIC FINDINGS

From the exploratory research, certain themes emerged. Specifically through the interviews, I saw eight recurring themes.

The magic of design

While this thesis directly addresses communication problems outside of and within design, part of the problem was also about keeping the gap ambiguous. By people not knowing exactly what designers do, It actually increases their value. Thus the question, does the allure of hiring a designer partially come from not being able to pinpoint their job and the "magic" that exists in designers filling the "gap" for problems? Many designers do believe that it is important to leave the discipline mystified and up to the imagination of the outside world. This specifically helped shift my perspective from the public perception of design to just the perception and communication of design (as both creating understanding and value). The surveys proved that the "public" was a daunting stakeholder to break down and tackle.

The trans / multi / inter / cross – disciplinarity nature within design

The fact that designers are able to find jobs between different fields of design as well as outside the formal field of design is not traditional of most disciplines. Especially at CMU, students are taught to traverse very nimbly between boundaries. Many graduates don't have to re-learn their skills from scratch even if they are entering a seemingly different field. The specifics of trans / multi / inter / cross - disciplinarity are also well defined by Blevis and Stolterman (2009).

Teaching design vs. design thinking

Another important distinction that must be made is the difference

between teaching design and teaching about design (design thinking). While similar, these two concepts lend themselves to different stakeholders, making it important to understand their differences.
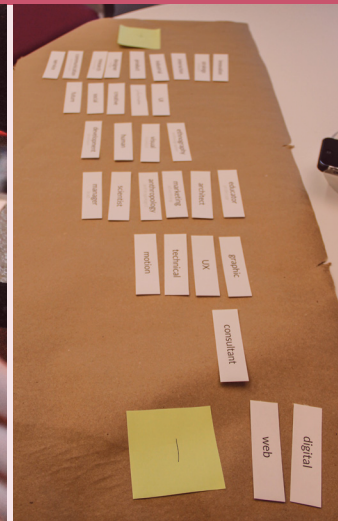
Much of design thinking (teaching about design) relates to the creation of a "design culture". In the interviews, design culture had the most varied definition. However, "design culture" was also ranked as one of the most influential factors in a practicing designer's workplace. Thus, the creation of a "design culture" seems to either make or break the success of design thinking, whereas teaching design (in the context of design education) does not seem to be as imminent of a factor.

Making (or doing) vs. thinking

While there is a balance to be struck between making vs. thinking, most designers leaned one way or the other because of their personal trajectory into design. This leads into design not being limited to a particular skill set or tool when proposing a solution. Because of the culture of thinking through making, a possible opportunity space here is that designers can better understand their own values in design by creating something for others.

The politics of research vs. teaching vs. practice in academia itself

The number one answer for the most useful resources for designers to learn about their practice was people- in the form of mentors, peers, and friends. These people form a community for a designer- whether that be within a school or a workplace. However, within the context of academia the creation of a community becomes trickier with faculty that are dividing their time between teaching and practicing.

"In the context of design education, the currency of design education is visual processing, not literacy or numeracy."
— Interviewee

While it is important to have professors that have worked in industry translate their knowledge into academia, it is also important for students to have professors that are well-versed in the art of research and more theoretical pursuits.

The locational and generational differences in understandings of design

The locational differences (rural vs. urban, developed vs. emerging economies) were assessed more through interviews with industry professionals whereas generational differences were explored with design educators. Mapping the future of design provided a very broad spectrum of results, but all thought about the proliferation, not the shrinking of the field of design.

The relationship between designers and business

Many questions were brought up as to the value of design here. How do we teach designers better business skills (in the realms of freelancing as well as working in a corporate environment so they can claim value proposition for their work)? How can designers be brought in earlier to the process? How do we integrate designers into businesses that traditionally

do not have a history of design? We know that businesses with design have succeeded more than those that have not, and more companies are acquiring design firms in order to try to integrate it into their business (Safian, 2013).

Becoming a "champion / evangelizer of design"

Designers have long had to defend what design is and have relegated themselves to much simpler or accessible understandings (example: graphic designer) because of their lack of motivation for communicating what they do. The excitement seems to be lost. Should a designer spend their time actually communicating what they do and creating value for it outwardly or simply practice the actual act of designing (making)?

"Being a designer means you develop an attitude about design."
— Interviewee

INSIGHTS

The thematic findings led to two main insights into how to move forward with the project. The insights are overarching concepts that consolidated much of what was being said during the exploratory phase of research.

"Artifacts are reflections of the beliefs and value systems of designers."
— Interviewee

Changing design from a noun to a verb

There has been a definite shift from hardware to software and from object-centered making to making-centered thinking (with service design as an example), where process is the focus of the research. Designers have moved away from designing something tangible which is adding to the confusion of what designers actually do. The opportunity for intervention here is because the public better understands the making aspect of what designers do far more than the conceptualizing and planning aspect.

"Visual tools are our secret weapon."
— Interviewee

Design continued to be thought of as a visual or just a "facelift to a product" by non-designers. However, many others understand it is as an artifact as well. So combining these two perspectives, what if we could create a visual artifact that would help communicate a designer's process?

NON-DESIGN PERSPECTIVE **DESIGN PERSPECTIVE**

DESIGN

DESIGN

Design is a visual aesthetic, and is the creation of a "lovely deliverable".

Designers is a process focused on creating for products and services centered around people.

Shift in the field of design

OBJECT CENTERED MAKING → **MAKING CENTERED THINKING**

but

Design is defined in the realm of "fashion / textiles" or "interior" design as is popularized by the media.

As designers continue to make less tangible things, they have difficulty communicating the nature of their practice.

The public understands artifacts and visuals. They also understand that something is designed "better" but t know how to articulate that.

UX Designers will refer to themselves as "graphic designers" to make it easier for people to understand. Many interaction designers "give up" trying to explain it. Why should they spend more time teaching what they do than actually doing it?

What if we could create a visual artifact that would help communicate a designer's process?

Demystifying design

A glass box gives the impression that design is simply a "replicable process that anyone can do". The black box gives the impression that it is something magical that no one understands and no one will. How can we create a smoky box which allows others to see inside but not understand its intricacies?
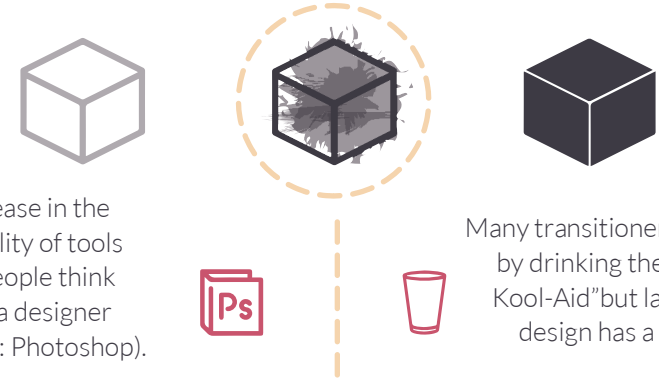
This analogy was borrowed from Christopher Jones (1992) who talks specifically about the creation and implementation of new methods as a form of translating skills for the development of design.

In this analogy, by allowing others enough insight to get at what designers do but not "reveal their secrets", the credibility and legitimization of design as a discipline increases.

"The weight of history is bearing down on us."
— Interviewee

"Design is intention and iteration. "
— Interviewee

"Design is the practice of planning. "
— Interviewee

"To an observer (commonly a client), the physical output, the themes, and the design ideas produced seem arbitrary, or magically derived. The artifacts developed by the designer are messy, usually drawn in the midst of deep and reflective thinking ... It is only the lack of understandable documentation, or the decision to not share that documentation, that creates the sense of magic."
— Jon Kolko

The analogy of creating a "smoky" box for the discipline comes into play. By allowing others enough insight to get an idea of what designers do, but not "reveal their secrets", the credibility and legitimization of design as a discipline increases.

The increase in the accessibility of tools has let people think they are a designer (example: Photoshop).

Many transitioners get in the door by drinking the "design thinking Kool-Aid"but later discover that design has a lot more to offer.

mind-set
knowledge-set
skill-set
tool-set

DESIGN EDUCATION
provides the
FLUENCY & FOUNDATION

SKILLS TAUGHT IN ACADEMIA	TRANSLATED TO INDUSTRY
Learning through making / doing	Don't fall in love with your first idea; continuously iterate; tenacity and perseverance in pursuing ideas
User-centered / human-centered design; methods for empathy	Observation; shut up and watch; listen and learn; development of design confidence; establishment of authority
Transdisciplinary nature within design; learning to think broadly	Ability to work in different disciplines; different ways to arrive at answers; inspiration
Trusting instinct; Teaching estimation (calculation vs. judgment)	Knowing when to use the knowledge you have; being OK with ambiguity; keeping threads unresolved
Experimentation; openness; curiosity	Embracing messiness; asking the right questions to learn context and complexity

How could we better bridge the gap between academia and industry through students?

GENERATIVE RESEARCH

OPPORTUNITY SPACES

From the exploratory research and insights, I proposed three main opportunity spaces where I believed there would be the biggest potential for value. These three different design directions can also be combined and reflect different ways of going about tackling what has been found thus far.

Visual Landscape

By creating a space mapping design, designers can identify to others (and themselves) where they fall on the spectrum. This visualization could show trends over time, educational trends, ideas within design, as well as the mapping of various stakeholders for comparison.

One of the main insights I found is that there is a tug-of-war between making and abstract thinking in design, despite our best efforts to have thinking-through-making movements. So if we actually put people on a spectrum from making vs. thinking and were able to see that data, we could create a mirror for the community (as well as the public).

While originally I thought that this visualization should be in 3D space, I decided to ideate a 2-axis diagram so that the user can feel comfortable enough to use it. In order to actually facilitate use, the visualization should exude a sense of familiarity (whether that's through the number and labeling of the axes or the format of the visualization / graph itself).

Since the axes operate as operational definitions of design, they are very subjective. Mapping different kinds of design and the effectiveness of evaluative measures are also important factors.
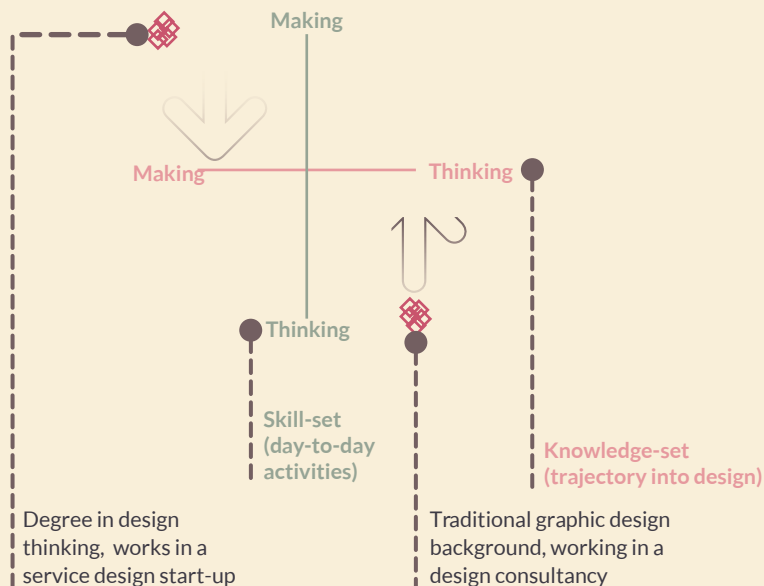
Self-Actualization Wizard

The self-actualization wizard goes back to the fundamental question of process. If designers talk about process as their practice, how we can help designers show their process through a visual or an artifact (since that is what the public seems to understand the best). I proposed a 3-step model for doing this:

Step 1
Aiding the designer to understand themselves

Concepts for mapping a designer
Academia vs. Industry
Language used in introductions
Future of design
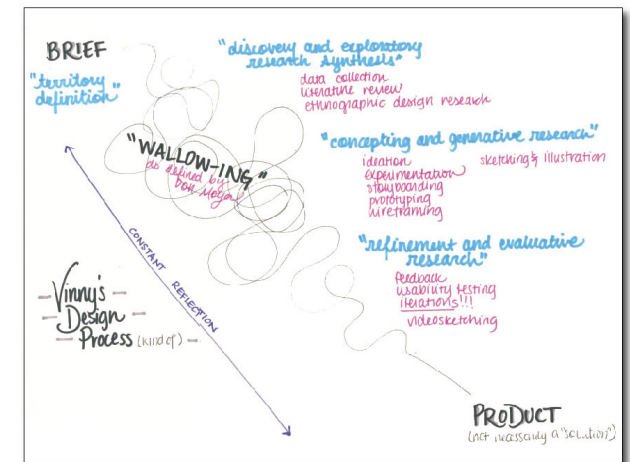Making vs. thinking spectrum
What is design?

Distinguishing a designer
Tool-set
Skill-set
Knowledge-set
Mind-set

Example: Activity with magnets where a designer can put together their "design identity"

Step 2
Helping designers understand their process (drawing out their process)

Example: Activity where the designer draws out their process

Step 3
Assisting them in creating a visual artifact that explains this process (using polyhedra that map their process)

Example: Activity where a designer can map each part of their process onto the face of a polyhedra.

Image credit: https://moreisdifferent.wordpress.com/2013/07/19/polyhedra/
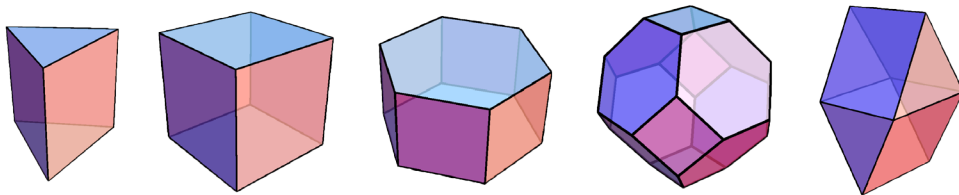
"The artifact is a method of communication and interaction. Visuals provide priority and sequence that is hard to communicate otherwise."
— Interviewee

By helping a designer understand their understanding of design, the wizard would help them become more reflective practitioners as well. Since thinking through making is also a large component of design, documenting and displaying processes of the development of a product or service benefits a large population attempting to understand design.

Mapping different kinds of design and the effectiveness of evaluative measures are important factors. Measuring understanding (from a general population's perspective) is also difficult. In implementation, motivating designers to actually use this tool will be important.

The polyhedra example in particular relates well to Plato's theory of everything, where he describes various platonic solids as perfectly symmetrical arrangements of a set of (non-planar) points in space.

Designing a dialogue between academia and industry

The gap between academia and industry is what makes design even more ambiguous. Designers are taught in school how to do certain "things", which are hard to explain to the general public. However, if we can better articulate and communicate these "things", we can create a clearer picture of what design is.

As the boundaries of design are extended, what do we teach students? What do we add and take out of the curriculum? From this boundless knowledge comes the need for specialization, but in school we're taught to be generalists. Everyone is scared of hyperspecialization.

The problems lie in the philosophical differences of where students are to be trained. While academia provides a "safe haven" for experimentation (creating vessels and not buckets), it doesn't afford students the work experience they need. On the other hand, industry believes that academia should be teaching students basic skills.

The portal would take the form of a digital platform, a generative toolkit, or a reflective workshop.
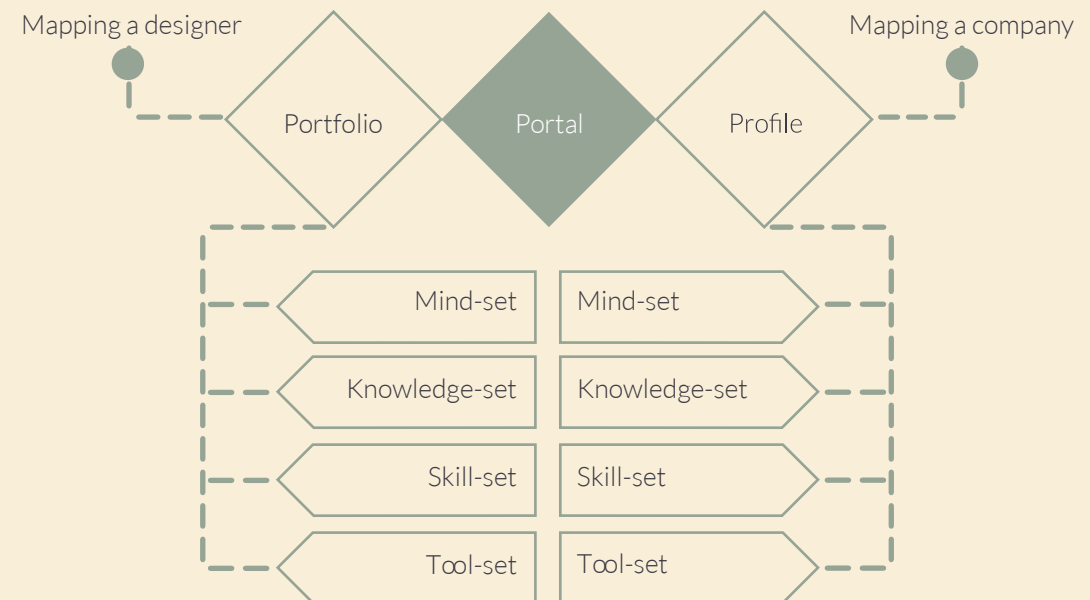
SYNTHESIS

While I presented all of the opportunity spaces during the fall thesis poster review session, the idea of the self-actualization wizard seemed to be the strongest opportunity space. Since the problem has such a variety of different facets, I decided to overlap elements of the other opportunity areas within my design going forward.

A kind of generative / reflective tool (workbook / wizard / systems process / workshop / digital platform / physical toolkit) through which a design student or practitioner could better articulate their process through the making of a visual + artifact.

The self-actualization wizard focuses on the designer and would create analogies to communicate design.

The fall semester thesis poster review session also provided some feedback on the concept itself: With the analogies I was using (the smoky box vs. glass box, vs. black box), I had to be sure to keep it vague but still tangible. There also need to be some amount of ambiguity surrounding the visual models so that they can mold to an individual's process. Measuring the success of this project is also of concern. How do I know I've actually been successful in communicating what design is or what a designer does?

CONCEPTUAL WALKTHROUGH

Taking a step back to understand the context of what I was approaching in the spring semester, I drew out personas and scenarios to see where the self-actualization wizard could actually be an intervention point. I was essentially attempting to "design the design process" (Löwgren & Stolterman, 2004). The concepts of reflection-on-action come into play here as I'm attempting to ask designers to reflect on their process while attempting to solve the problem itself (Schön, 1983). Asking designers to undertake their design process, articulate the processes they are going through, and communicate that process brings attention to their inherent ideas about design, design processes, and their own personal process.

"DESIGNING THE DESIGN PROCESS"

DESIGN OPPORTUNITY

Process

How do I explain...

WHAT IS DESIGN?

Well it's well defined by designers

DESIGNER

How do you articulate your practice in design?

"DESIGNING THE DESIGN PROCESS"

Assumption: you have to reflect and understand to communicate

1 — Design exericse

2 — Reflect

3 — Externalize / communicate

Prompt 1

Prompt 2

Prompt 3

How much iteration is allowed per exercise?

Find the commonalities between the design exercises to understand the process

How do you document your process? What is the medium to use?

Kinds of prompts (range on a spectrum)

While these could be looked at as lens, they speak to the kinds of problems designers are trying to tackle.

Specific Object-oriented

Industrial design

User interface design

User experience design

Service design

Broad Wicked problems
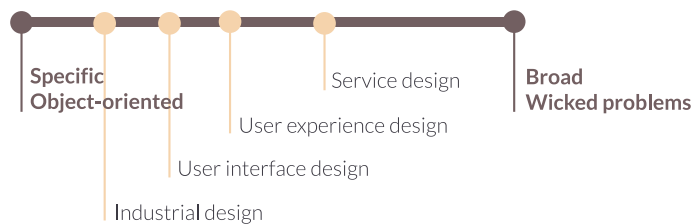
Other considerations for designing the exercise:
• The phrasing of the problem itself (design a vase vs. design a way to enjoy flowers)
• The presentation of examples or case studies
• Acknowledgement in the change of the kinds of problems in history (design of a kitchen timer to designing the "internet of things" for a home)
• The exercise should be replicable and scalable

How do we facilitate making this connection?

My process is about ideation, refinement, etc.

Asking what designers put on their invoices?

Looking at other process diagrams (Dubberly's "How Do you Design? 2008)

Points of reflection:
• What kinds of problems do you like working on?
• What methods do you use? What techniques or skills?

How can we create a visual or artifact to communicate that?

What do familar representations look like?
• Words
• Visual diagrams
• Dichotomies
• Triads
• Archetypes
• Patterns

How do we measure the success of someone's understanding or communication?

Unique

Aim

Useless —— Usable
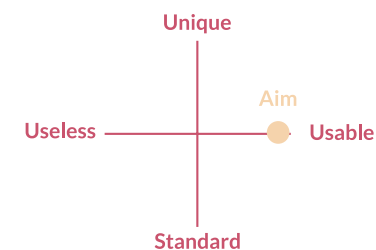
Standard

If the product is different for each entity that goes through the process, is there a way to standardize it?

Different amounts of information are conveyed due to different levels of engagement. The model of communication must address the differences in intention and the context of communication (creating "authentic dilemmas").

Business (those outside of the field)
Intent: selling / impressing
Context: client or employer meeting

Connection (personal)
Intent: informational
Context: dinner party

Designer (those within the field)
Intent: reflection
Context: networking at a conference

IDEATION

Participatory Generative Sessions

Moving forward, I planned out participatory generative workshops to better understand how I could break down and document a designer's process.

The intention of the workshops was to help designers reflect on their practice but also through that reflection have them externalize it through some kind of communication. It is necessary to create an account that does justice to the activity through which agents become familiar with their practice world and acquire a sense for its concepts and terms (Yanow & Tsouskas, 2009).

I really struggled with the scaling of the problems that I planned to present to designers. The prompts had to be realistically portrayed but at the same time pretty abstract to get a realistic impression of the process. The methods or approaches through which they could solve these problems can carry from being physical, social, service, technology, or visually oriented.

There are also certain assumptions that need to be plugged in. Since a problem of a larger magnitude implies that a designer would have time, resources, and an entire research team in hand, the speculation of what the design process could be still stands barely outside the grasp of the designer.

While ultimately I only ended up pilot-testing the generative sessions, the quest for the "responsible anticipated process" of designers (a standardization of the design process) was ultimately not successful because of the time constraints. Just through pilot-testing, it was obvious that there had to be a simpler and more modular process to get to a designer's process.

See Appendix C for the protocol for the participatory generative sessions.

Invoicing

One off-the-wall aspect of these generative sessions was asking designers what they bill for on their invoices for clients. A colleague mentioned that it forced her to not only keep track of the time of each step in her process but when it came down to presenting the client with the process, there was some disagreement as to the time allocations. Thus, I thought it would be another method of figuring out process through purchase orders (assuming that there is an itemized list provided).

This also gets tricky very easily though because of revisions. While some revisions are complex, some are simple changes that may or may not be worth charging for. Charging has always been a contention point in design. While it is true that the process of the project might be 2 hours, it is important to take into account the hundreds of hours it has taken to acquire the skill to do the project in 2 hours. There are also plenty of resources to help designers understand how to break down their invoice, but not necessarily how to articulate their process within their invoice (Smashing Magazine).

Interaction15

While heading off to the Interaction15 Conference (IXDa's annual conference) in San Francisco, I thought it might be good to take advantage of conducting small exercises with design professionals. I wanted to keep it minimal and short to increase responsiveness and thus created these small postcards.
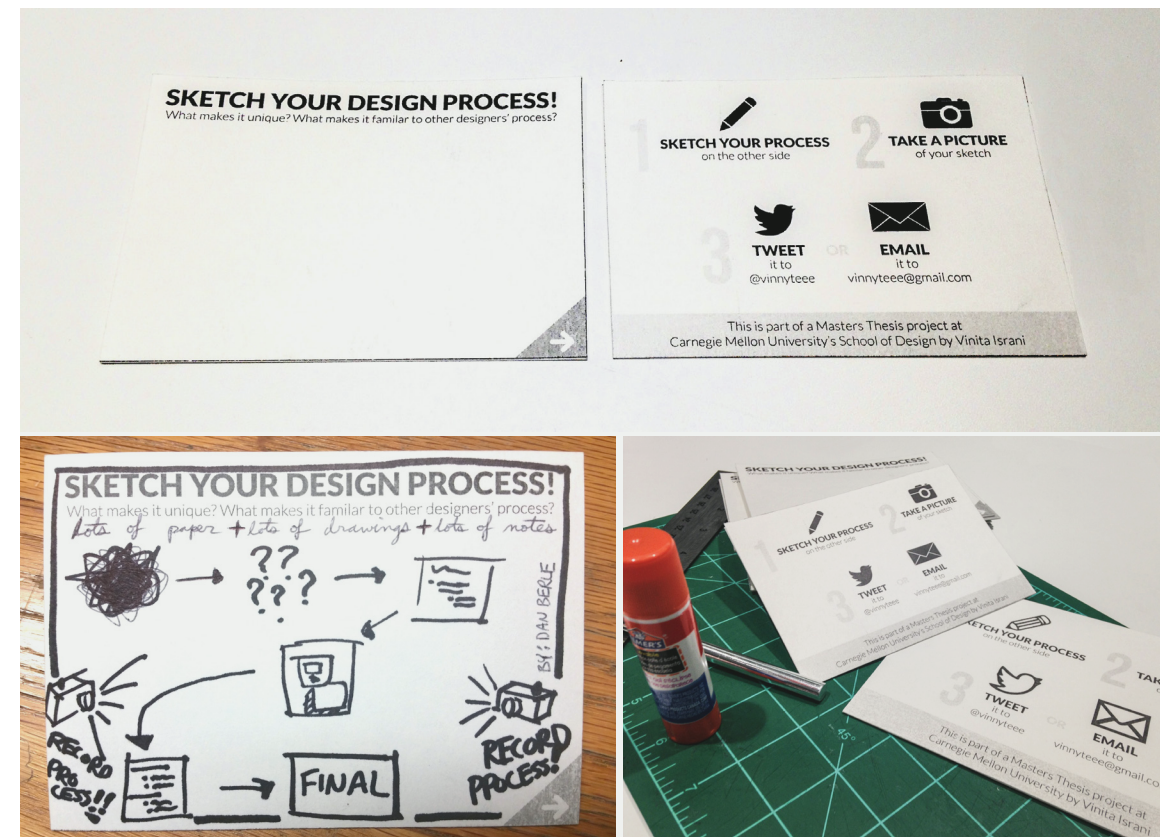
Unfortunately I didn't get many responses, but gained some interesting ideas from the Educational Summit I attended. The workshop was directly related to my thesis as it was a forum for understanding what is going on in design education today and how we can smooth the transition to industry. I was fortunate enough to get into Diana Miller's workshop, "Educating designers and non-designers".

Within the breakout session we talked about design thinking being taught as a followable and replicable process and how to create "frequently physical but various digital touchpoints" along this process. There was emphasis on the integration of the process as well as the vocabulary and how we can use DT (design thinking) to increase DT. Design thinking here was not defined in the "floating" definition within business but as the process of understanding and teaching design as a discipline (creating empathy, making and iterations, etc). I really latched onto this concept of "DT for DT" as a method for communication as well as reflective practice.

CLARIFYING HUNCHES

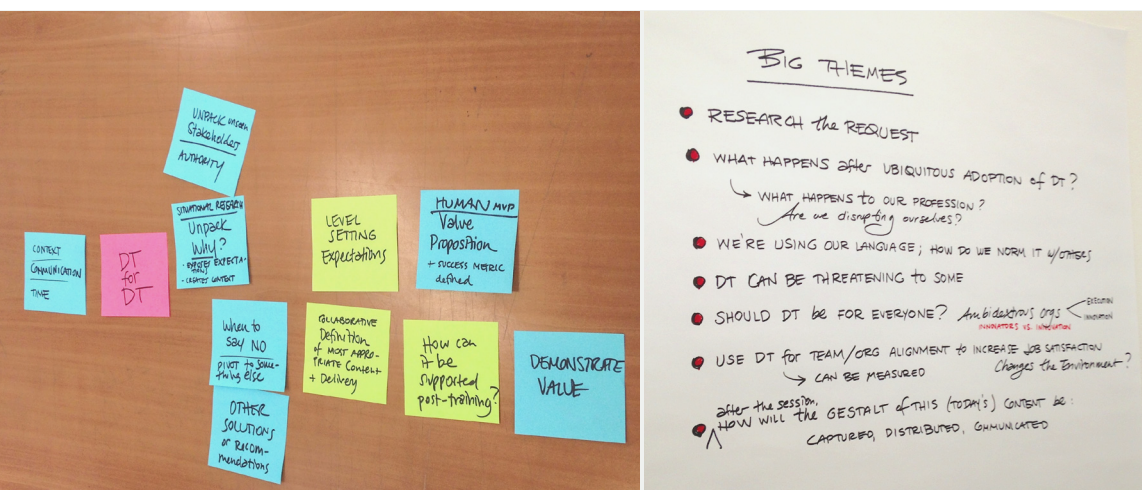I had the chance to speak with Ms. Sapna Singh, a Masters of Design candidate at Ohio State University. It was intriguing to talk with her as she was covering a lot of the topics that I had initially thought about (and still do tangentially) about design education in the context of defining "what is design". While we both thought about the same things, each of us is pursuing the "end goal" an entirely different way.

We also compared some findings and for the most part, there were a lot of commonalities. Some of the findings we had that overlapped:

- allowing designers to be individualized, whether that's through meaningful work or just not being perceived as the "typical designer".
- defining design as the intuitive creativity that is applied to a purpose
- the divide between thinking (conceptual thinking) and making (thinking through making) which are both simply two ways of thinking but are defined differently
- design thinking as a way of lowering the barriers of entry into design
- designers feel as if they need to stand out from their competition (through portfolios) but also through communication
- seeing process but making sure that it is the right process
- maybe this is why design firms are having trouble with new clients - because of communication of process (Fabricant, 2014).

Sapna shared with me her presentation fall poster which is a great conceptual model of the landscape of design education today. Her thesis specifically focused on the future of graduate design education and its value. It was created based on initial analysis of graduate programs at US universities and design schools as well as a review of literature about design education.

"Design, by definition, is...mostly tacit knowledge. It has to do with people's intuitions and harnessing the subconscious part of the mind rather than just the conscious...If you think about the structure of the mind, there just seems to be a small amount that is above the water—equivalent to an iceberg— which is the explicit part...If you can find a way to harness, towards a productive goal, the rest of it, the subconscious [understanding], the tacit knowledge, the behavior—just doing it and the intuition— all those, then you can bring in the rest of the iceberg. And that is hugely valuable."
— Bill Moggridge

If MFA is not the new MBA, then what is the new MFA?

"Design faces an uncertain future. ..... If design is to live up to its promise it must create new, enduring curricula for design education that merge science and technology, art and business, and indeed, all the knowledge of the university".
- Don Norman and Scott Klemmer, March 2014, State of Design on LinkedIn.com

What is the Future of Design Education?

"MFA is the new MBA".
- Daniel Pink, Best-selling author, 2008
In the new creative economy being logical and analytical was not enough; there is a need for those who could combine intuition and creativity with logic and analysis.

"There does not seem to be a noticeable premium paid for higher levels of (design) education;"
Changes in the nature of design practices account for the greatest competitive pressure within the design job market. The positions reflecting increasing compensation appear to be those that revolve around defining or managing the integration of design into business strategy: strategists, usability experience and operations management; or those roles that deal with web, motion and interactive design. (AIGA.org)

No Art Background Necessary for Innovation-Focused Design M.B.A.'s.
These M.B.A.'s, which focus on design, don't require sketch pads but do teach creative thinking (USNews.com, November 14, 2011)

"Design thinking is the thing in business schools"
Stanford University has D.School, Harvard University started i-Lab; Finland started Aalto University Design Factory; Canada had DesignWorks at the University of Toronto's Rotman School of Management; and UTS in Sydney developed u.lab, where MBAs take a deep dive into design thinking.
(Australian Financial review, April 9, 2014)

Work of companies like IDEO have created value for design thinking but not design education.

Examples of educational qualifications required for various roles in design domains:
Business Designer at IDEO: Masters in business (or equivalent life experience) with an undergraduate degree in engineering, science, or design. (www.ideo.com)

Associate Director, UX Strategy at Resource: MS in Cognitive Science, Human-Computer Interaction (HCI), or equivalent experience. (www.resource.com)

User Experience Researcher at Google: BA/BS degree or equivalent practical experience; 4 years relevant work experience. (www.google.com)

UX Design Researcher at Microsoft: BS/BA, MA or PhD in HCI, Human Factors, Psychology or similar field. (www.microsoft.com)
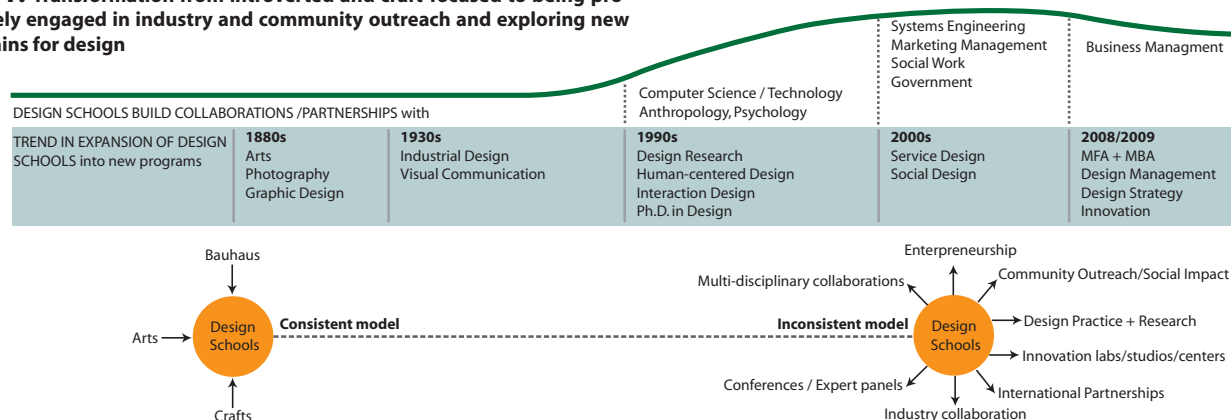
SAPNA SINGH / MFA Thesis
Thesis Committee:
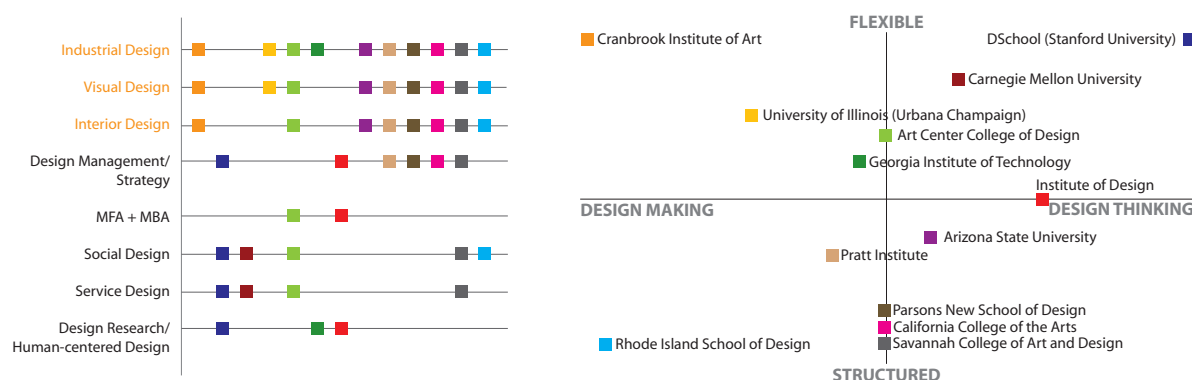Prof. Elizabeth Sanders, Prof. David Staley

Stage of Thesis Journey: **Planning Stage**

Seeking feedback / suggestions on:
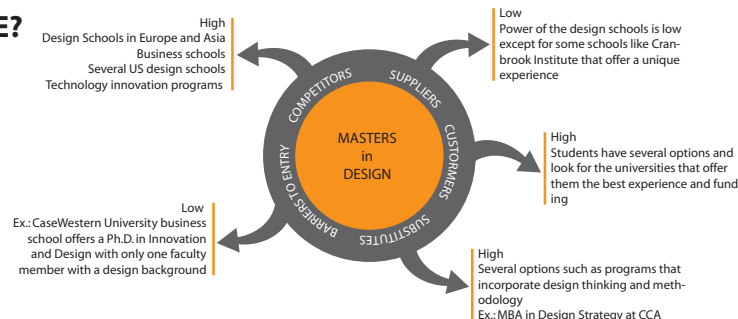Research Plan, Research questions and methodology

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PAST: Transformation from introverted and craft-focused to being proactively engaged in industry and community outreach and exploring new domains for design

Systems Engineering
Marketing Management
Social Work
Government

Business Managment

DESIGN SCHOOLS BUILD COLLABORATIONS /PARTNERSHIPS with

Computer Science / Technology
Anthropology, Psychology

| TREND IN EXPANSION OF DESIGN SCHOOLS into new programs | 1880s Arts Photography Graphic Design | 1930s Industrial Design Visual Communication | 1990s Design Research Human-centered Design Interaction Design Ph.D. in Design | 2000s Service Design Social Design | 2008/2009 MFA + MBA Design Management Design Strategy Innovation |

Bauhaus → Design Schools ← Arts ← Crafts

Consistent model ---- Inconsistent model

Design Schools →
Enterpreneurship
Community Outreach/Social Impact
Multi-disciplinary collaborations
Design Practice + Research
Innovation labs/studios/centers
International Partnerships
Industry collaboration
Conferences / Expert panels

PRESENT: An unplanned, inconsistent model of education, dominated by external factors

Industrial Design
Visual Design
Interior Design
Design Management/ Strategy
MFA + MBA
Social Design
Service Design
Design Research/ Human-centered Design

FLEXIBLE

Cranbrook Institute of Art
DSchool (Stanford University)
Carnegie Mellon University
University of Illinois (Urbana Champaign)
Art Center College of Design
Georgia Institute of Technology
Institute of Design

DESIGN MAKING   DESIGN THINKING

Arizona State University
Pratt Institute
Parsons New School of Design
California College of the Arts
Rhode Island School of Design
Savannah College of Art and Design

STRUCTURED

FUTURE?

High
Design Schools in Europe and Asia
Business schools
Several US design schools
Technology innovation programs

Low
Power of the design schools is low except for some schools like Cranbrook Institute that offer a unique experience

COMPETITORS
SUPPLIERS
MASTERS in DESIGN
CUSTOMERS
BARRIERS TO ENTRY
SUBSTITUTES

High
Students have several options and look for the universities that offer them the best experience and funding

Low
Ex.: CaseWestern University business school offers a Ph.D. in Innovation and Design with only one faculty member with a design background

High
Several options such as programs that incorporate design thinking and methodology
Ex.: MBA in Design Strategy at CCA

Analysis of the brand strength and value of the Masters in Design (MA,MFA,MS,MDes) using Michael Porter's five-forces model

Design education requires redefinition and restructuring. The Masters-level program offers the ideal stage to introduce a change in design education curriculum/a because:

■ Multi-disciplinary students interested in design methodologies
■ New and non-traditional domains of design require advance problem-solving skills.
■ Masters design education can be designed to expand the domain of design, explore new domains of design, link craft to research, and create a transdisciplinary curriculum.
■ Ph.D. in Design becomes the terminal degree in design and a required qualification for academic positions.

Research Questions:
How can we create value for the MFA?
How can we define what values does an MFA offer?

PRECEDENT WORK

I took a small inventory of kinds of "method packaging" that currently existed to better inform how I wanted to present my final concept.

UX Companion

A mobile app that functions as a glossary of user experience (UX) theories, tools and principles.

Relevance: something that is available across platforms is valuable (UX Companion).

MethodKit

MethodKit is a tool for workshops that helps you work together and discuss projects. A best practices checklist in card format, the cards show different perspectives you need to think about for each area or field. Each field has been heavily researched and the cards summarize how different professionals see their own field.

Relevance: cards are engaging and can serve in a multitude of ways (Method Kit).

IDEO Method Cards

IDEO Method Cards is a collection of 51 cards representing diverse ways that design teams can understand the people they are designing for. They are used to make a number of different methods accessible to all members of a design team, to explain how and when the methods are best used, and to demonstrate how they have been applied to real design projects. Inspired by playing cards, the cards are classified as four suits—Ask, Watch, Learn, Try—that define the types of activities involved in using each method.
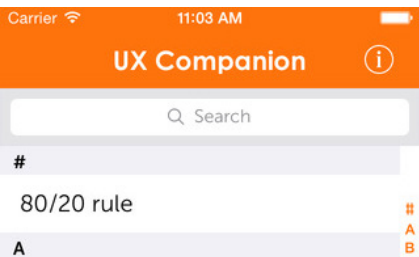
Relevance: cards focused on using methods need to show examples as well (IDEO Method Cards, 2009).

Design Kit

Another resource by the design firm IDEO, the website features mindsets, methods, and case studies to inspire designers and others to better practice human-centered design.

Relevance: having an online exploratory platform potentially engages more people (Design Kit).

UX Recipe

The personal manifesto of Alecsandru Grigoriu which features different methods as "UX ingredients". Checking each of the ingredients produces a final recipe for your project. The manifesto's intended use is to facilitate the selection of UX tools and techniques for your own project, estimate (people, days, costs) for each tool or technique, and to explore recommendations through the use of hashtags.

Relevance: modularizing or creating an analogy around the whole concept helps package the concept (Grigoriu).
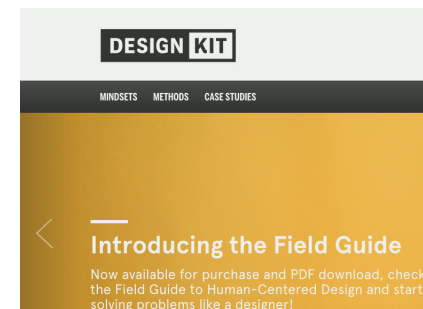
iD Cards by Loughborough's Design school

iD Cards provide a name, example, and description for the 32 key design representations used during new product development. They indicate the stages of new product development when the design representations are most commonly used and if they communicate types of design information or technical information. They are grouped into 4 categories (sketches, drawings, models and prototypes).

Relevance: divisions between the kind of methods creates a journey through the concept (Evans, Pei, & Campbell, 2011).
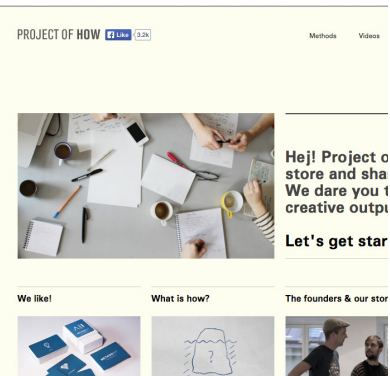
Project of How

The Project of How is an open interactive library of methods and techniques that serves as a place to store and share creative methods. The online website allows you to sort methods by number of people using the methods as well the time required to complete the activity.

Relevance: open-sourcing this concept might be the long-term strategy (Project of How)

Kate Herd's Cultural Probes

Kate Herd has created some amazing comprehensive cultural probes to engage the user through both the craft and tangibility of the materials.

Relevance: the craft of materials is important and creates more engaging and delightful experiences (Herd, 2008).

100 Days Challenge

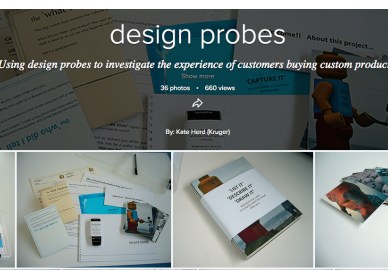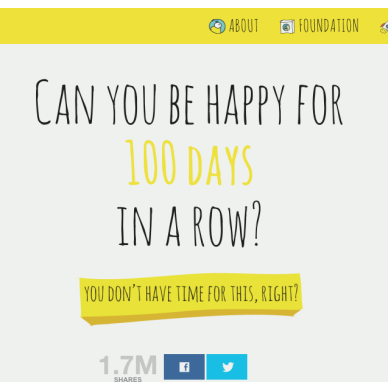The participant was expected to take a picture of something that made them happy each day, reflecting on what it was that did so and how they can take time out of their schedules to complete the simple activity. The challenge was all self-driven but participants were obviously encouraged to share their results with their friends, bandwagoning more friends to join.

Relevance: using the context of a challenge implores people to finish (100 Happy Days)

ABC's of Dating by Design

A personal project by Ayla Newhouse which looks at how we can apply design methods to dating and relationships. By applying the creative tools, strategies, and methods of design to the often-challenging realm of human relationships, Dating by Design asserts

that anyone can learn how to a design a better relationship with pen, paper, and a little creativity.

Relevance: how design methods can be applied to "non-design" contexts (Newhouse, 2013).

Thoughts on Interaction Design by Jon Kolko

The book is a visual artifact that communicates what Jon Kolko does as a designer. Not only did it encourage a more reflective practice on the designer's part, there was a tangible visual artifact at the end of it (the book) that serves as communication for a layperson and other designers.

Relevance: there has to be a way that the process of the creation of the visual artifact is actually able to excite the designer in its making (Kolko, 2010).
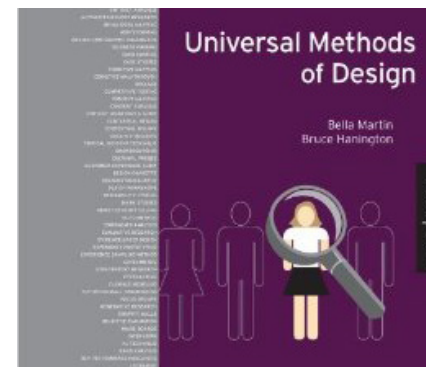
Universal Methods of Design

This book is a useful survey of research and design methods used by today's practitioners, and serves as a crucial reference for designers as they progress through their design process.

Relevance: the infographic on the bottom left of each page characterizes the methods and techniques using several useful research facets (Hanington & Martin, 2012).

PIVOT
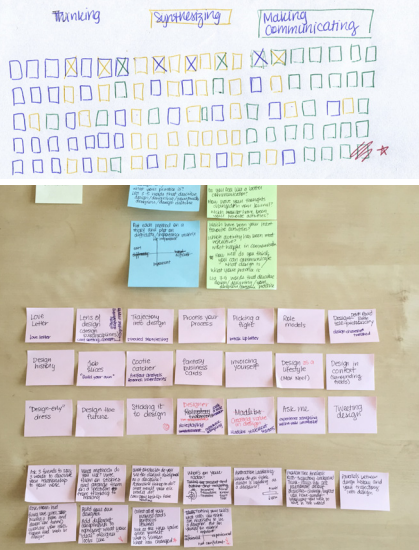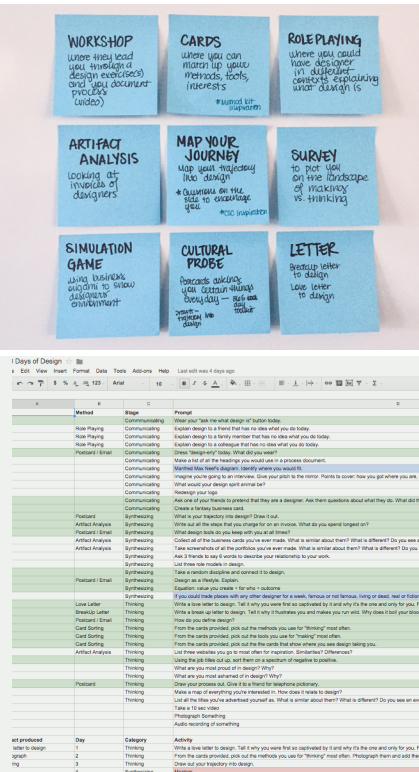
After having brainstormed, researched, and even pilot-tested a variety of methods to get designers to reflect on their background, articulate their process, and communicate that process, I decided that it might be best to actually combine all of the strategies and methods.

This was a crucial pivot point in my thesis because I felt like I was hitting a lot of obstacles in actual implementation of all of these methods. I felt as if any one activity was not comprehensive enough and because of the plethora of topics covered, it would be a disservice to only focus on a handful.

While implementation of all the methods (and motivation for designers) is hard, I began thinking about how to frame the entire concept. By creating libraries for methods or inspiration, how could I actually help the designer articulate what design is?

I began by gathering all of the methods and activities I had done thus far both in the exploratory and generative phases. I came across quite a few pieces of precedent work that helped me shape my final concept. Using mixed methods and modifying methods to fit the context of my research was also informed by Caruth's work in mixed methods (2013).

Taking a page from all of the precedent work converged with my own research, I decided to create "21 Days of Design", a set of engaging daily tasks for designers. The daily tasks are design methods and activities created for design professionals, students, and educators incorporating elements of professional development, personal development, communication strategies, and reflective practicing. While I initially thought about doing a range (365 days a year, once a week, 30 days continuously, etc), I settled on 21 days as a time frame to do one activity a day for about 10

minutes. 21 days is also thought to be the amount of time it takes to develop a habit (Maltz, 1989).

The tasks are broken down into three categories with three basic actions: thinking, synthesizing, and communicating. Each of the kinds of tasks are woven together through the 21 days, mimicking a designer's process and helping them build on one another.

While I did consider how to tie them altogether to either create a visual or artifact that a designer can show to a layperson, it was an entire challenge entirely due to the pure number of activities and the nature of concepts (since there are so many sub disciplines of design). Each of the methods / tasks / activities range somewhere on the spectrum of prescriptive to open-ended to give designers direction on how to articulate.

Framing this direction centers around the concepts of a design kit, a cultural probe, as well as a challenge of some sort. The precedent work alongside user testing helped me frame exactly how I wanted to present the solution.
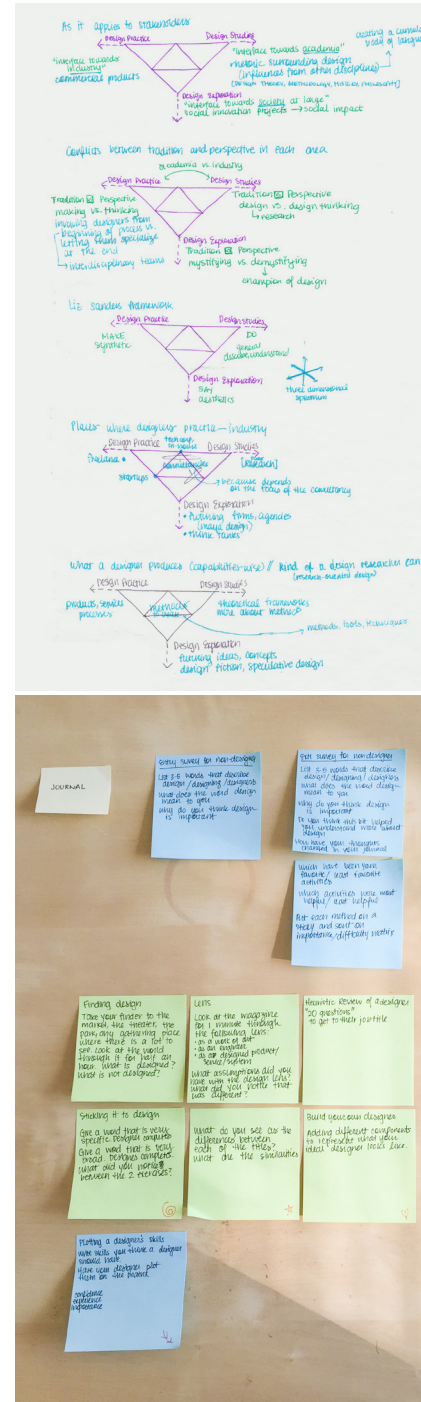
REFINEMENT AND EVALUATION

DESIGN PRINCIPLES

As I attempted to better evaluate each of the methods as well as make sure I had instilled particular facets of the insights into the final design, I outlined 7 key principles that were integral to the proposed solution.
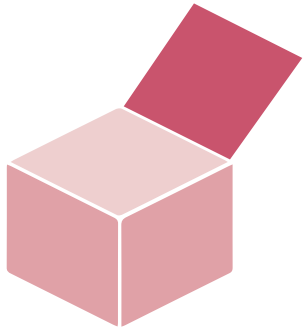
Metacognition

Metacognition, or learning about how you learn and evaluate learning, is particularly important in becoming a reflective practitioner who can articulate and communicate ideas. Metacognition happens in three main stages (Gollwitzer and Schaal, 1998):

1. in-action- where you just don't know
2. in-sense – having a sense of structure but not knowing how to articulate it
3. in-articulation – possessing the skills to articulate what you are thinking about

The schedule of the methods follows this structure but have been redefined as sense, synthesize, and spread.
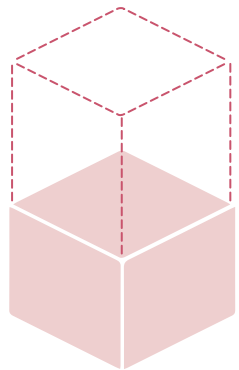
Scalability

While the focus of the tool is on the individual designer, the proposed solution can be used by larger design teams and organizations in communicating their value to clients and customers, other design institutions, as well as to the general public (whether that's someone's family or a stranger on the street). The comparison of the communication of design between these design entities lead to a better comparison of how they are similar and unique. For example, design consultancies can better understand their practice through the tool to better articulate what methods they use and take away the "theatre of research".

Research through design

It was important to think about creating a solution that speaks to the language that designers already understand: that of design methods. The "research through design" approach connects with designer

and allows them methods through which they can employ "thinking through making" frameworks.

"[To have an expertise in design knowledge] in terms of content, it includes a set of tools and, most importantly, a specific culture. The tools help the experts to understand the state of things and support the co-design process, from generation of the first concept to the final results. The culture is what is needed to feed both a critical sense (of the current state of things) and a constructive attitude (proposing the values and visions on which to image "the new"). However, this design knowledge can also be described in terms of how it is produced and how it can be transferred from one actor to others. In order to do that, we must introduce the notions of design-as-research and design research." (Manzini, 2015).
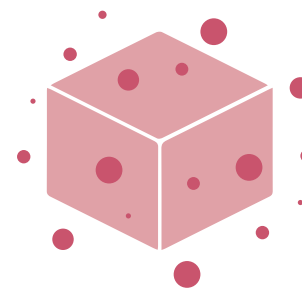
Relativity

A sharing component to the solution was important for designers to understand the landscape in which they learn and practice. Borrowing the idea from the visual landscape (as an opportunity area), other practitioners should be able to assess and compare where they are in relation to others.
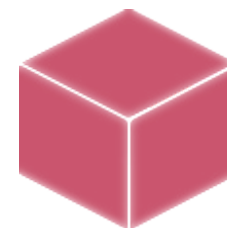
Tangibility

While digital components of the concept were necessary, it was evident through research that the importance of a well-crafted artifact really speaks to a designer's respect for materials.
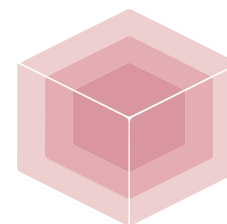
Contextualization

Several of the activities are focused around design milestones in the past, present, and future. This lends
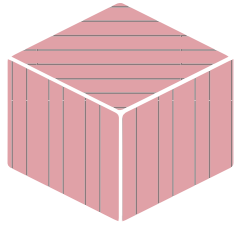
itself to the greater development of design as a discipline and better cementing of the explanations of design to outsiders.

Individualization

With every person having a different perception of design, it was important to take those into consideration using personal development research methods as inspiration. Especially with so many sub disciplines and areas of focus, it was important that the solution have a component focused on individualization.

Underlying all of these methods is this conflict, which ends up being more of a spectrum, between contextualization and individualization. Contextualization refers to the understanding that design has borrowed ideas from different disciplines. There is also a sense of past, present, and future as design develops as a discipline. Individualization focuses on how your personal journey into design (as influenced by design education) has been created. The solution between these two concepts is to have a mix of both kinds of methods because we're communicating both as messengers for an entire entity but we have our own style in doing so as well.

The figure to the right shows how each of the methods fits under certain design principles.

Method	Individualization	Contextualization	Tangibility	Relativity	Research through design	Scalability	Metacognition
Love letter	●	○	○	●	○	○	○
Lens of design	●	○	○	●	●	●	●
Trajectory into design	●	○	○	●	○	○	●
Process your process	●	○	○	●	●	●	●
Picking a fight	●	○	○	●	○	○	○
Role models	●	○	○	○	○	○	○
Design Round Robin	●	●	○	●	○	●	●
Design history	○	○	○	●	●	○	●
Job Slices	●	○	●	○	●	●	○
Cootie catcher	●	○	●	○	○	○	○
Fantasy business cards	●	○	●	●	○	○	○
Invoicing yourself	●	○	○	●	●	●	○
Design lifestyle	●	●	○	●	○	●	●
Design in context	○	●	○	●	●	○	○
"Design-erly" dress	●	●	○	○	●	●	○
Design the future	○	●	○	○	○	●	○
Sticking it to design	○	●	○	●	○	●	●
Designer enactment	●	○	○	●	●	○	○
Creating value in design	●	○	○	●	○	●	○
Ask me	●	○	●	●	●	●	○
Tweeting design	●	○	○	●	○	●	○

PROTOTYPING AND USER TESTING

As I tested with participants, I asked for feedback specifically about framing of the task as being understandable and do-able (understanding people's tolerance). There is a difference between strategy and reception, and my focus was on the strategic aspect during the first round of user testing.

The second round of testing was focused on the reception and implementation of the project overall. Here I found out that the designers were interested in other's answers so building out a sharing system (on a digital platform) would be useful. To also increase the sharing of the answers, the postcards and envelopes (for those prompts that are not self-contained) should be in a square format to encourage sharing on social media ("instantly instagram-able"). There was also an element for the respect of materials. Thus, I made the design decision to have analog cards that forced the designer to physically handwrite their answers rather than type them. Additionally, using the terminology of a "challenge" rather than a "design methods kit" helped market the concept overall.

As I built out high-fidelity "kits" for distribution, I was also attempting to do some amount of "pre" and "post" evaluation to understand how the designers were reflecting on the methods.

"The design of this artifact makes me want to participate."
— Participant

"This needs to be easily implemented into my life."
— Participant

FINAL PROPOSED CONCEPT

The activities are also spread out over the course of 3 weeks. The three kinds of methods are woven in and out to mimic the iterative nature of the design process.

Week 1

Week 2

Week 3

Experience journey map through Design Dive

Come across #designdive from Instagram, Twitter, or Facebook

Go to www.designdive.com to see what's going on

Share your results (or not) and see what others are doing!

Register for the challenge!

As you do each day, the system aggregates the photos from your social media

Receive the design kit in the mail

Complete each day's activity, document it, and share it on Instagram, Twitter, or Facebook

Log back onto the website and answer some basic questions to get started!

Overview

Design Dive is a 21-day reflective design challenge to help designers reflect and communicate their work as a practice. The design challenge consists of an online platform as well as a design kit. A designer receives the design kit, which contains instructions and materials for each of the activities for the 21 days.

The design challenge can be used by design educators, students, and professionals and it requires a short activity to be completed each day for less than 10 minutes per day. Each of the activities is modularly designed and falls into three categories:

Sense
Get designers thinking about how they think of design as a discipline and how it relates to themselves

Synthesize
Putting together their practice in the context of design as a discipline

Spread
Forcing designers to articulate and communicate their thoughts about their practice to the world

The Kit

Cards
Each of the 21 activities takes the form of a card or envelope. A breakdown of understanding the card can be seen below. The card is to scale.

DAY 8

design history

If you were charged with writing a design history textbook, what would be the chapter titles? Who would you interview?

📷 #designdive #day8

Title of the design activity / task / method

The appropriate hashtags to document the day's method and post to social media.

The color and icon on each card identifies what kind of activity it is (sense, synthesize or spread).

Clear identification of the day to track your progress.

Instructions for carrying out the activity as well as prompting questions for reflection.
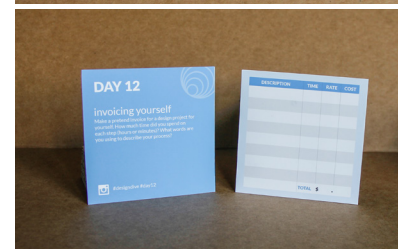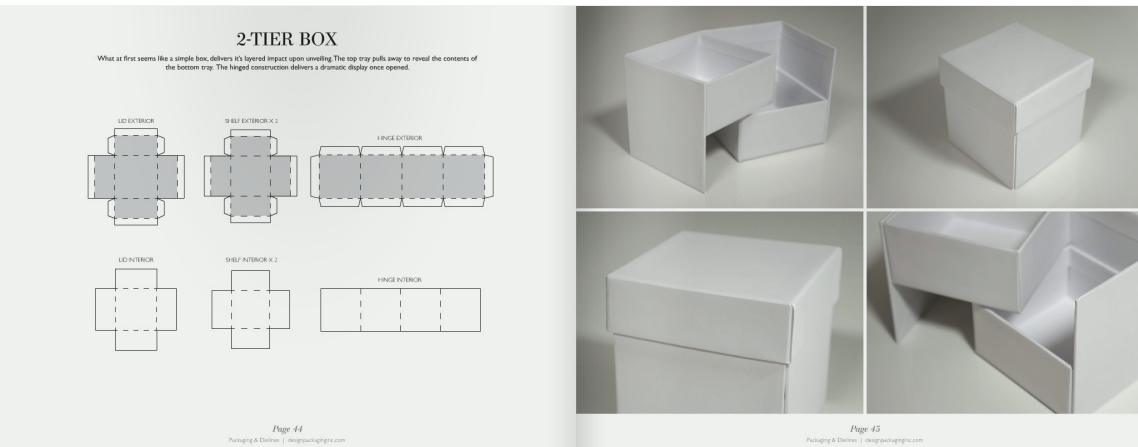
Taken from Packaging and Dielines: The Designer's Book of Packaging Dielines (2011).
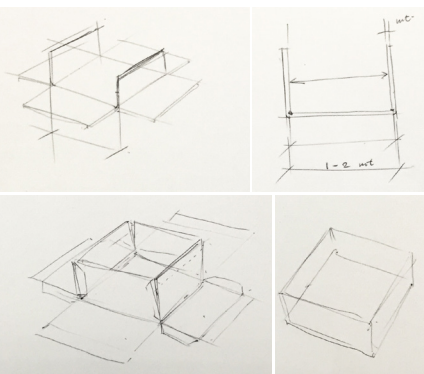
Drawings courtesy of Joep Frens

Packaging

The cards / envelopes are stored in a two-tiered fold-out box. The top tray pulls away to reveal the contents of the bottom tray. The two trays can be used to store the cards that are finished versus those that are not. The hinged construction delivers a dramatic display once opened. This allows the set to sit on a desk or table and constantly command attention (to motivate the designer into making sure they do it everyday). Inspiration for this box was taken from the book Packaging and Dielines: The Designer's Book of Packaging Dielines.[1]

Booklet

The kit comes with a small booklet that acts as a small reference guide and instructional manual for the 21 days. It also contains additional information about Design Dive and answers FAQs.

For a full list of all of the methods as well as their learning outcomes, please see Appendix D.

Wireframes

The online platform (www.designdive.com) serves as the first touchpoint to entering the system.

The website platform serves as:
• a marketing site for the entire project
• a repository of your 21 days and outcomes
• a forum for you to see others' design dives, share yours, give, and receive comments

The user has to register their account and can choose to connect Instagram, Facebook, or Twitter with it to share the photos that they have taken. The system would aggregate the appropriate photos from these social media sites. The user can also choose to upload the photos individually within the Design Dive system.

When sharing their photos the users can choose between the following privacy settings as well:
• Public (anyone can see)
• Participants only (those registered with the site)
• By invitation (share a link with people they know)
• Private (accessible for themselves)

www.designdive.com

DESIGN DIVE

ABOUT FAQS BLOG LOGIN TAKE THE DIVE

1.2 M shares

what?

Each day consists of completing one activity. Each activity employs different design methods and takes less than 5 minutes a day!

When you complete the activity for the day, take a photo and share it on your social media platforms. When you share it you unlock what other designers have done for that very same activity!

#designdive is a challenge for you – not for anyone else.

It is not a design competition or a showing off contest. It is to help you become more articulate and create a forum and support system to progress discussions about design as a discipline in the local, national, and international community.

TYPES OF ACTIVITIES

SENSE
sensitize designers in thinking about their practice and design as a discipline

SYNTHESIZE
encourage designers to relate and map their own personal experiences and thoughts to their perceptions

SPREAD
force designers to articulate and communicate ideas about design to others

Design dive attempts to empower designers to better talk about their work as a practice through a series of daily challenges over the course of 21 days.

why?

Articulating what design is (and is not) is not easily understood or defined by the general population, and more surprisingly by designers as well. There is no universal lexicon, unifying institution, or tangible framework for understanding design that currently exists, allowing for many differing philosophies, approaches, and definitions of the subject.

No clue!   Pretty visual!
Non-designer
Process   How do I explain…
Designer

how?

1. Register in the challenge
2. You will receive your FREE Design Dive kit in the mail in 2 - 3 days.

3. Follow the directions to complete each activity!
4. Take a picture each day and share via

REGISTER HERE

INSTAGRAM   TWITTER   FACEBOOK

with the public hashtag:

#designdive

As you complete each activity, pictures from other designers and their activities are unlocked on designdive.com!

who?

Designers of any kind including students, educators, and practitioners.

People successfully completing the challenge claimed to:

– Be more articulate in explaining design
– Become more reflective practitioners
– Feel inspired about why they are a designer

WEEK 1
WEEK 2
WEEK 3

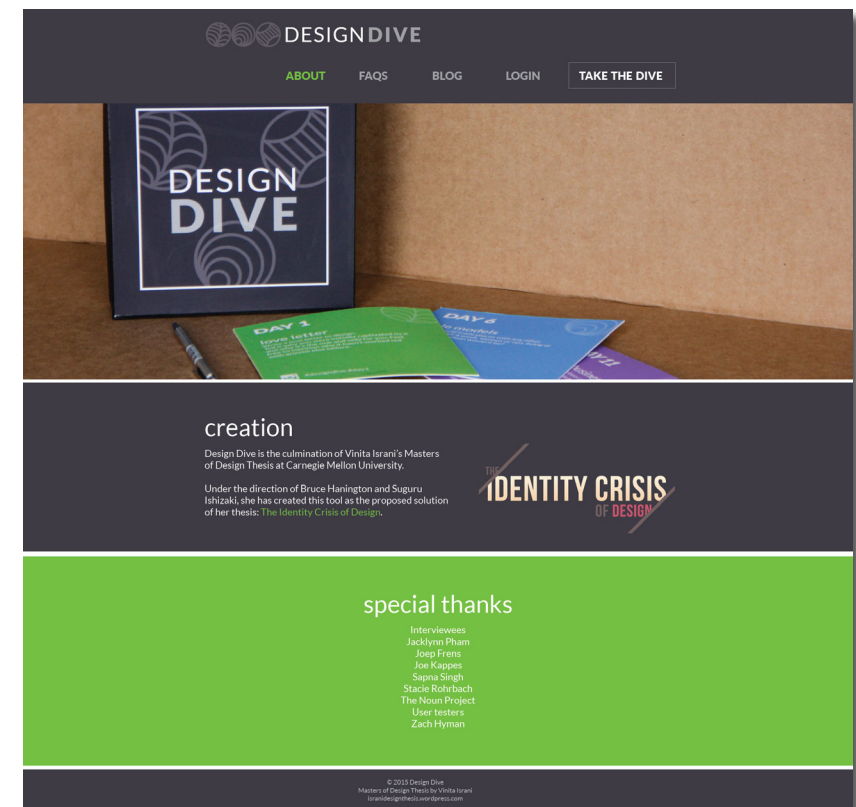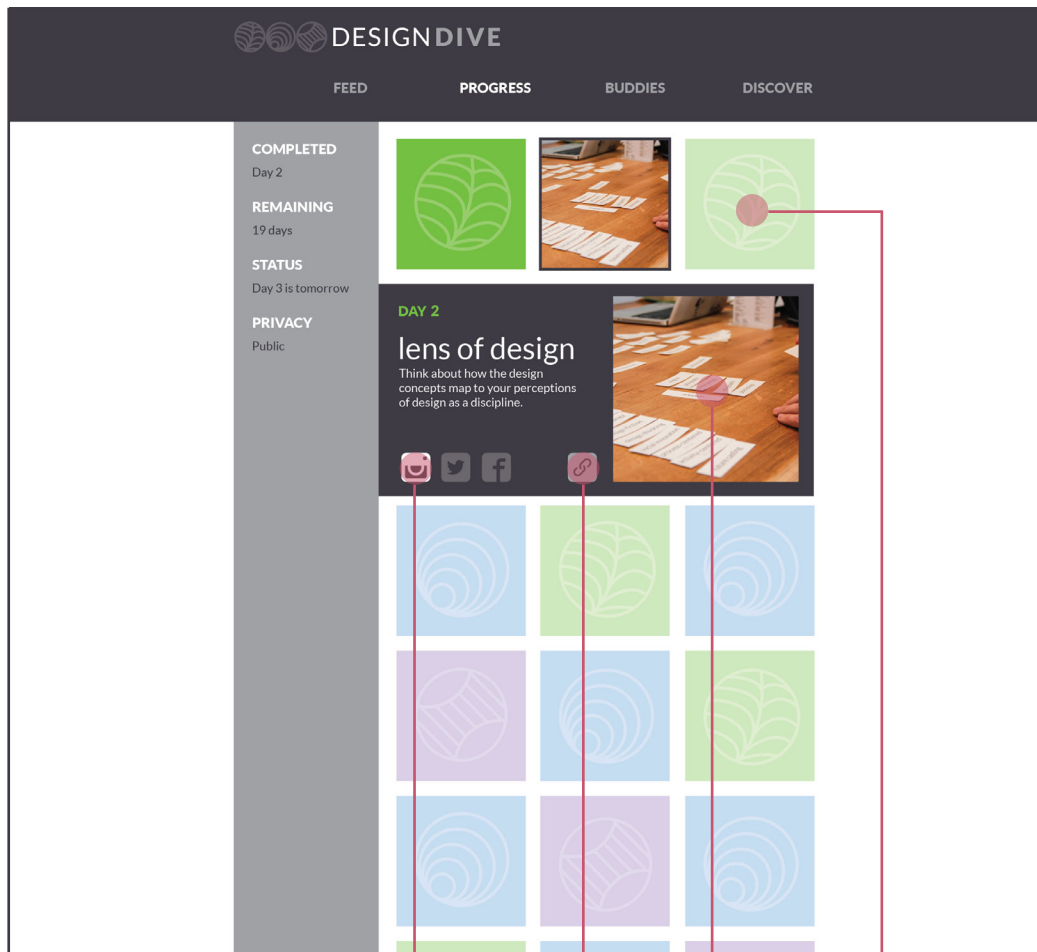The 3 types of activities are intertwined so as to realistically recreate an iterative designer's process.

ready to take the dive?

NAME*
First and Last Name

EMAIL*
sampleemail@someone.com

PASSWORD*
More than 6 characters, all letters

GENDER

CURRENT OCCUPATION

MOTIVATION TO PARTICIPATE

TAKE THE DIVE

DESIGN DIVE

ABOUT FAQS BLOG LOGIN TAKE THE DIVE

DESIGN DIVE

creation

Design Dive is the culmination of Vinita Israni's Masters of Design Thesis at Carnegie Mellon University.

Under the direction of Bruce Hanington and Suguru Ishizaki, she has created this tool as the proposed solution of her thesis: The Identity Crisis of Design.

THE IDENTITY CRISIS OF DESIGN

special thanks

Interviewees
Jacklynn Pham
Joep Frens
Joe Kappes
Sapna Singh
Stacie Rohrbach
The Noun Project
User testers
Zach Hyman

DESIGN DIVE

ABOUT FAQS BLOG LOGIN TAKE THE DIVE

DAY 1
love letter

DAY 6
role models
If you could trade places with any other designer for a week, famous or not, dead, with whom would it be?

DAY 11
fantasy business cards
Create a fantasy business card. Think about the job titles that were included in Day 9's activity.

faq's

Is this really for free?
Yes! As a pilot program, we are sending Design Dive Kits for free for a limited time!

Don't you need my address?
Once you register, you will receive a secure email which will ask you for your address.

Will you ship ANYWHERE?
Unfortunately, we will ship only in the U.S.

How long will it take to get to me?
We used Standard United States Postal Service so crossing everyone's fingers, about 2 to 3 days.

What happens once I get the kit?
Log back on to this site and we will help you get started!

What if I skip a day?
It's ok! Just do it the next day. We recommend picking the same time of day so that you get into the habit.

What if I have more questions?
Contact vinita@designdive.com. She's pretty nice.

User Progress page (internal)

Discover page (internal)

Shareable link

Photo of your activity

Media through which the photo was shared

Activities still to come

Design Dive photos from your closest friends (as connected through Instagram, Twitter, and Facebook

Can search for multiple days at a time but can only see search for days that you've already completed (no cheating!)

REFLECTION AND CONCLUSION

VALUE PROPOSITION

Visual and tangible tool for reflection

The cards are aids, catalysts and helpers to get structure, overview and to start good streams of reflection. They provide overview and a framework to aid and spark good conversations.

Just the right amount of information on the cards.

Cards are good for becoming a representation of concept and to convey the crucial information.

"Cards are typically an entry point to more complex and detailed information. "
— Google Design Guidelines on Cards

Description without direction

Everyone has their practice and I created a tool that doesn't have an opinion about a designer's way of working.

Design language used and eliminated

By using terminology and methods that designers are already familiar with, they can better understand how to focus their thoughts. The last category of methods (spread) force the stripping of the design jargon to be able to communicate to a variety of audience stakeholders.

The sweet spot between structure and creativity

A framework that gives you the possibility to focus on your practice and have meaningful discussions on where you are and where to head. Something that allows you to be creative but still provide support.

Create tools out of the recurring design issues

The methods are connected to the issues going on in industry right now. The cards are also modular, so they can change to the topics within design as time goes on.
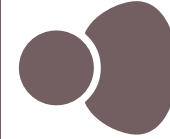
Covering the Essentials

Over the course of development of the project, there was a lot of distillation to make sure that the cards allow you to focus on the things that are relevant and actionable for designers.
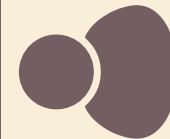
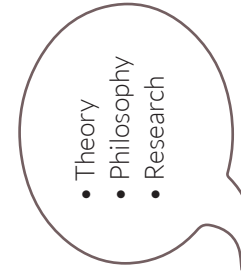**STAKEHOLDERS**
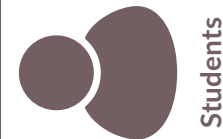
Students

Educators

Designers

Individuals

Public

UNDERSTANDINGS OF DESIGN

- Theory
- Philosophy
- Research

- Process
- Methodology
- Social impact

- Visuals
- Tangible artifacts
- Design thinking

VALUE FLOW

Academia

Industry

Society

NEXT STEPS

More methods

The kit is modularly designed so that components can be easily improved and replaced. Evaluation metrics are very important to consider, such as AEIOU or those suggested by Hanington and Martin (2012). There are quite a few methods that were considered but needed to be further developed and tested. These methods could be either used "post-Design Dive" or could be an entirely new set of cards that could be the expansion pack to Design Dive.

Please see Appendix E for more methods.

Addition of a reflective journal

A suggestion made to me during the pilot testing of the final design was to actually have an accompanying journal that would help to document the designer's thoughts through the entire process. It would either accompany each of the cards in a reflective exercises (specific to that day's activity) or it could just serve as a collection of reflective moments for the designer. For example, the designer could record their "aha" moments as well as map how many conversations about design have been sparked that have led to a more reflective practice or a better communication of what design is. It would help capture some of the shifts that are happening with the designer as to what's surprising or frustrating and better improve Design Dive overall.

Non-designer Kit

Just as Design Dive was developed for designers, there might be a companion kit for a designer's significant other, or anyone really that might have some of the activities intersect throughout the 21 days (or in expansion packs). While obviously the non-designer would already be sensitized to the fact that design exists, it would be an experiment in seeing how much communication can be facilitated. Froukje Sleeswijk Visser in particular introduces a communication framework to better engage the public in different ways that could be applied here (2009).

Please see Appendix F for methods for the non-designer kit.

Evaluation through surveys

To better evaluate the entire system, surveys before and after the entire challenge should be utilized. By collecting this feedback, the methods can better be improved and replaced.

Please see Appendix G for sample entry and exit survey questions for the designer and non-designer kit.

Data Collection

With the completion of each day's activities, there will be a repository of data for all of the kinds of methods and the results. This data can be very valuable in mapping what design as a field might look like (see examples below).

The disciplines of user xperience by Dan Saffer (2013)
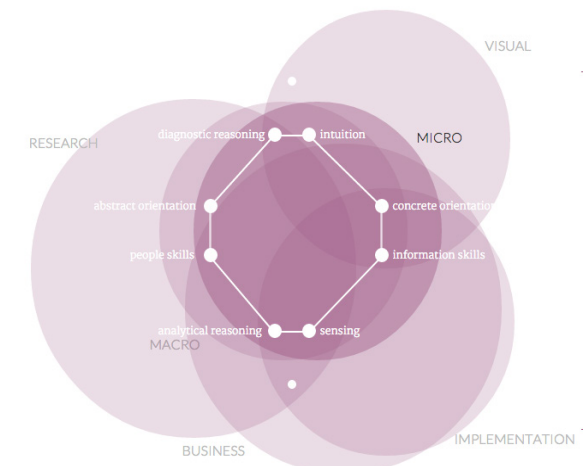
Designpath by Meredith McDermott (2015)

Creating an entirely new tool

One of the possibilities of this project was to really go into depth into developing a tool to measure the knowledge / mind / skill / tool - set framework that is proposed by Blevis and Stolterman (2009). Another consideration was to create a kind of evaluation where designers would be able to fill out a kind of evaluation and then be able to visually see where they lie (similar to the concept of a visual landscape). Brainstorming around visualizations of a spider graph, as well as using color and size on a 2 graphic to represent 4 qualities:

difficulty, importance, confidence, and experience were some of the early ideas. By doing so, the tool could also suggest resources (books, website, podcasts), that the designer might want to look into to better develop their "sets".

Open sourcing

With the need to facilitate reflection and communication of design, the democratization of these methods is necessary. To provide all of the methods and activities created for free to designers might encourage them to personalize and develop their own.

Scalability for design organizations

Slight tweaks to make these methods accessible for larger groups of designers (from increasing the number of cards within the card sorting activities to tailoring the design round robin for more participants). Scalability has been a very strong theme through out the development but the testing and customization of the scalability has not yet been refined in its entirety.

DIY

While the respect for materials is an important element of the concept, in order to make this actually accessible, there needs to be some low-cost way of being able to produce the cards. Open-sourcing the methods would still mean creating a version that was easily printable.

Scalability for different platforms

While the kit is available in a printed component, future services could allow this to be in an app form for better use of a notification and reminder system as well as sharing elements. While this was not the original intent of the project (to get designers off their digital device to be more reflective), it would be an experimental way to try how Design Dive could be gamified to increase adoption. Digitization would also help with pacing of the challenge over 21 days (not allowing someone to do them all in one day).

Market viability

While Design Dive was tested, it was never marketed. Testing engagement and adoption would really determine the success of this project. For continued development, I believe a videosketch or a short promo video better explaining the concept would be of great benefit.
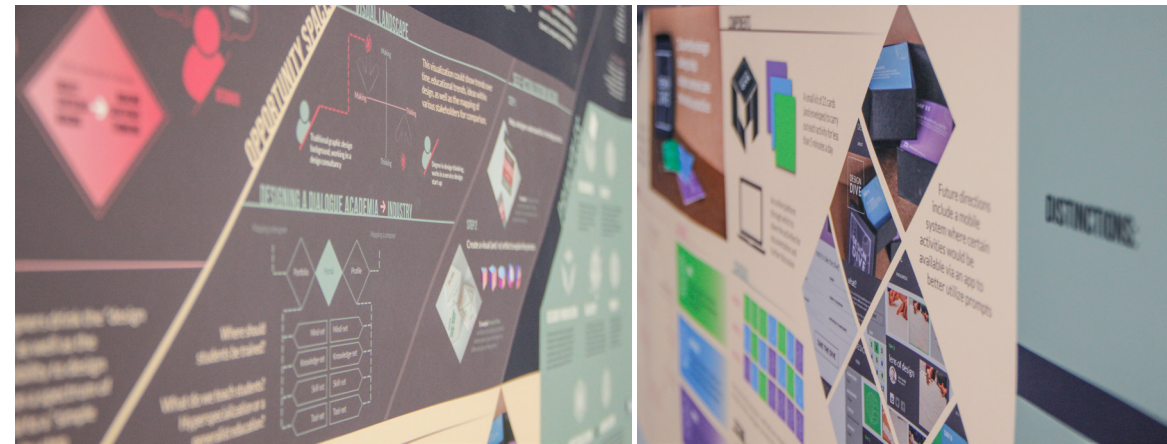
REFLECTION

The undertaking of any thesis project always proves to be a difficult yet satisfying journey. I definitely struggled and stumbled throughout the process but also learned how to iterate more quickly and efficiently as I went along.

Crazy Topic

One of the biggest challenges I continuously faced was the breadth of the topic I chose. Since very early on, I feared that choosing a subject that has so many subdisciplines (the flavors of design), and one that I was personally immersed in might actually work against me. I really learned how to articulate in broad terms, while still trying to be relevant and applicable. I was also fortunate to have a very rich pool of participants around me but with everyone having an opinion about design, the process grew complicated very quickly. I'm glad I persevered through the challenge as I continuously received positive feedback when presenting my ideas as to the value of the problem I was addressing.

Being Meta

Having chosen a very "meta" topic, the project was also a constant revision and reflection of my own personal practices of design and how I communicate them. I often wondered whether I had "Medical students' disease" as I would continuously revisit my thoughts about design after each interview. While I did not initially intend to create a tool for designers, the research prompted me to move in that direction. The reception of the idea gave me confidence that this could be of real value. People went so far as to suggest alternative titles such as "P90X for designers"[2]

which were hilarious yet proved that the concept was being communicated well.

Method Princess

Through this project, I've discovered a personal soft spot for methods. The thesis focused on methods from the exploratory stage for gathering information to the actual final proposed solution. My resolution for this project is essentially a framework for methods proving I've been drawn into understanding the creation, adaptation, and implementation of research methods. Although every possible method was not used (speed dating, competitive analysis, service blueprinting, etc.), knowing what methods to use when (and knowing when to adapt them) has definitely led to the maturation of my own design process.

Inside my head

As in any long-term independent project, it's hard to balance your own personal thoughts and fears with what is actually going on in the world. Another monumental challenge for me was going through this process alone. While it did force me to wear a variety of hats and improve skills in a wide range, I also felt as if I was constantly seeking out my classmates for feedback. My thoughts inside my head and outside my head definitely sound and appear differently, sometimes I just need someone to tell me so.

Deadlines Galore

Setting an ambitious schedule ahead of me, I constantly combated my own overcommitted nature. While it is important to have a structured schedule, learning to have enough leeway for spontaneity definitely helped release anxiety for better concepting.

The undertaking of a thesis project which is self-diagnosed, self-reflective, and self-propelled is not easy. I constantly wished I could do, see, understand, and synthesize more through the whole process. One year is not enough time to be comprehensive enough to call yourself an expert, but it's the beginning of developing a deeper understanding of a topic, for which I am thankful.

*Please see Appendix H for timeline details.*

CONCLUSION

With the intention of creating a more reflective practice that can be better communicated, I constantly revisited two central questions in my thesis:

1. How do we measure understanding?
Is there a way to "force" a certain kind of understanding into someone?
2. Is there a way to explain the design process?
While it will not be universal, I was hunting for a way to quickly and efficiently achieve this.

While I think I made some headway into attempting to answer both of these broader questions in the context of the field of design, there is still a ways to go. As outlined in a previous section, the development of Design Dive could really be tested and explored and might provide more tangible answers to these questions. Unfortunately one of the inherent complexities of this project is that it was tested in a controlled, prompted environment and not in the real world. While we might attempt to simulate and pilot test our proposed solutions, until we "tinker it into existence" it does not easily happen.

Ideally, the entire concept would evolve so that it would easily model into prevailing systems and mental models. A mental model acts as a posit of "what if" - a point of departure, around which multiple ideas can be considered (Craik, 1967). Since designers wear a variety of hats (from facilitators to negotiators to planners to pixel-pushers), we could look at existing frameworks and map them onto that. For example, using the methods to figure out if you're a "generator" or "synthesizer" for interaction designers for Cooper (Cooper). By utilizing the methods in this way, we might better create a more interconnected system for developing a more reflective, better understood, and better communicated practice in design.
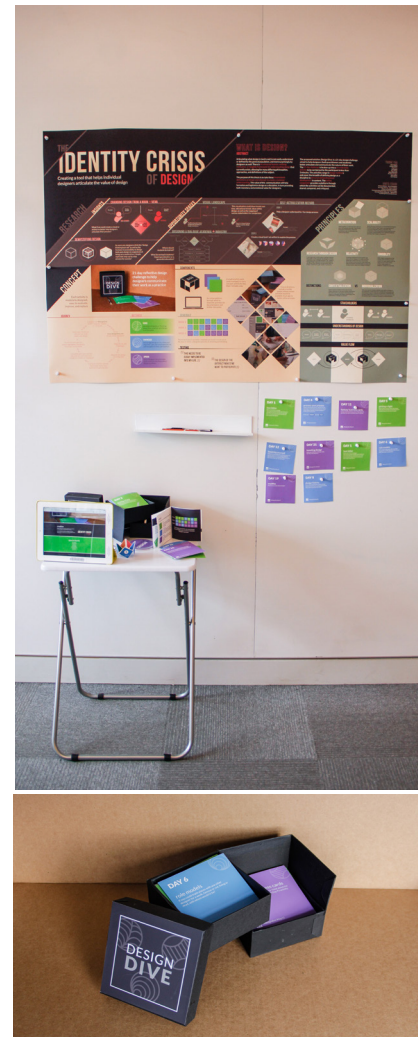
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APPENDICES

APPENDIX A

Survey Questions

Basic information
1. *What is your job title?
2. *Where is your place of employment?

Free Word Association
3. *List 3 to 5 words that describe design.
4. *List 3 to 5 words that describe designing.

Perception
5. *What does the word design mean to you?
6. *Why do you think design is important?

Association
7. *Do you know family or friends that are designers?
8. What is their job title?
9. Where do they work?
10. Please provide a brief description of what you think they do.
11. List 3 to 5 words that describe designers.
12. *Have you worked with designers before?
13. In what context and capacity?

Follow-Up
14. Would you be willing to be contacted further to talk about your understanding of design?

If you answered yes to the previous question, please provide your full name and contact info (email and phone number).

Thank you so much for taking this survey!
For more information, contact:

Vinita Israni
virani29@gmail.com
214.563.5796

*Required questions

APPENDIX B

Students In-Person Interview Procedure (60 minutes)

Basic information
1. Full Name
2. Job Title, or what title you're looking for
3. Current educational institution and what kind of company you're looking to work for
4. Job Description (include what kind of media you have worked on). How do you describe your day-to-day activities?

Madlibs template for the individual to talk through their trajectory in design / Directed Storytelling
So we are going to use this template as an aid to talk through your trajectory into design.
I went to ___ (university / college name) for my undergraduate degree in ___ (degree name) and masters / doctorate degree in ___ (degree name) at ___ (university / college name). I really got into design when ___. I have worked at ___ (company name), as a ___ (job title) and the experience was ___ (adjective). I am interested in ___ (design space) and want to move into ___. I define design as ___ and I was mostly influenced by ___.

Free word association - put the words on sticky notes
5. List 3-5 words that you associate with design
6. List 3-5 words that you associate with attributes "designing"
7. List 3-5 words that you associate with characteristics of "designers"
8. List 3-5 words that you associate with "design culture" (what is design culture?)

Card Sorting / Cognitive (and Concept) Mapping / Affinity Diagramming
These cards contain design concepts and terms. You can sort them to create a hierarchy, system, clusters or categorizations to reflect your understanding of design.
There are blank cards to add terms you don't see.
You can use the small sticky notes to add additional notes.
You are free to exclude cards if you feel like they don't fit.
Talk through your rationale after you're done.

Interview questions
9. What do you think designers in 10 years will spend most of their time doing? 5 years?
10. What piece of advice would you give to design students ("born and brought

up in design" vs not)? How does that differ from the advice you give students transitioning into design?

11. What is the best resource you've used to understand design?
12. How would you introduce yourself at a dinner party?
13. How do you describe what you do to your mother (/ a parent / stranger / friend / mother-in-law)?
14. How would you describe it to your hair stylist?
15. What do you think the public perception of design is today? How has following up with your clients changed their perception of design
16. What do you think is unique about your institution's program?
17. I came to CMU expecting to _____. I ended up _____.
18. Where do you think the field of design education is heading?
19. As someone who has worked in both academia and industry, what do you see as the differences?
20. Can you speak on your thoughts about making vs. thinking in design?
21. How does living in _____ impact the work you do?

Card Sorting Job Titles
So I've taken a bunch of job titles and cut them up. Could you sort these into positive and negative connotations on a spectrum. You could do them based on what you want to do (as in what title you'd like to have) or ethically. What titles would you like to have? Combine at least two of the cards to create one title. Create 3 titles.

Thank you so much
Would you be willing to do a follow-up interview?
Any resources or people you would recommend talking to?

Students Remote Interview Procedure (30 minutes)

Basic information
1. Full Name
2. Job Title, or what title you're looking for
3. Current educational institution and what kind of company you're looking to work for
4. Job Description (include what kind of media you have worked on). How do you describe your day-to-day activities?

Madlibs template for the individual to talk through their trajectory in design / Directed Storytelling
So we are going to use this template as an aid to talk through your trajectory into design.
I went to ___ (university / college name) for my undergraduate degree in ___ (degree name) and masters / doctorate degree in ___ (degree name) at ___ (university / college name). I really got into design when ___. I have worked at ___ (company name), as a ___ (job title) and the experience was ___ (adjective). I am interested in ___ (design space) and want to move into ___. I define design as ___ and I was mostly influenced by ___.

Free word association - just say aloud the first words that come to mind
5. List 3-5 words that you associate with design
6. List 3-5 words that you associate with attributes "designing"
7. List 3-5 words that you associate with characteristics of "designers"
8. List 3-5 words that you associate with "design culture" (what is design culture?)

Interview questions
9. What do you think designers in 10 years will spend most of their time doing? 5 years?
10. What piece of advice would you give to design students ("born and brought up in design" vs not)? How does that differ from the advice you give students transitioning into design?
11. What is the best resource you've used to understand design?
12. How would you introduce yourself at a dinner party?
13. How do you describe what you do to your mother (/ a parent / stranger / friend / mother-in-law)?
14. How would you describe it to your hair stylist?
15. What do you think the public perception of design is today? How has following up with your clients changed their perception of design
16. What do you think is unique about your institution's program?

17. I came to CMU expecting to _____. I ended up ____.
18. Where do you think the field of design education is heading?
19. As someone who has worked in both academia and industry, what do you see as the differences?
20. Can you speak on your thoughts about making vs. thinking in design?
21. How does living in ____ impact the work you do?

Thank you so much
Would you be willing to do a follow-up interview?
Any resources or people you would recommend talking to?

Practitioners In-Person Interview Procedure (60 minutes)

Basic information
1. Full Name
2. Job Title
3. Place of Employment
4. Job Description (include what kind of media you have worked on)

Madlibs template for the individual to talk through their trajectory in design / Directed Storytelling
So we are just going to talk through this template to make it easier.
I went to ___ (university / college name) for my undergraduate degree in ____ (degree name) and masters / doctorate degree in ___ (degree name) at ___ (university / college name). I really got into design when ___. I have worked at ___ (company name), as a ___ (job title) and the experience was ___ (adjective). I am interested in ___ (design space) and want to move into ___. I define design as ___ and I was mostly influenced by ___.

Free word association - put the words on sticky notes
5. List 3-5 words that you associate with design
6. List 3-5 words that you associate with attributes "designing"
7. List 3-5 words that you associate with characteristics of "designers"
8. List 3-5 words that you associate with "design culture"

Card Sorting / Cognitive Mapping / Affinity Diagramming
These cards contain design concepts and terms. You can sort them to create a hierarchy, system, clusters or categorizations to reflect your understanding of design. You can use the small sticky notes to add additional notes.
Talk through your rationale after you're done.

Interview questions
9. What attracted you to design?
10. What do you think designers in 10 years will spend most of their time doing? 5 years?
11. What piece of advice would you give to design students? How does that differ from the advice you give students transitioning into design?
12. What is the best resource you've used to understand design?
13. How would you describe what you do to your mother (/ a parent / stranger / friend / mother-in-law)?
14. What do you think the public perception of design is today? How has following up with your clients changed their perception of design
15. IF CMU ALUM: What do you think is unique about CMU's program?

16. IF CMU ALUM: I came to CMU expecting to... I ended up....
17. DESIGN EDUCATOR: Where do you think the field of design education is heading?
18. DESIGN EDUCATOR: What do you think is unique about your institution's program?

Card Sorting Job Titles
I have a mishmash of job titles on cards. Take a look through these. See if you can come up with a combination of three different titles that would better explain what you do. What titles can you make up that would fit under your job description and better explain what you do? Combine at least two of the cards to create one title.

Thank you so much
Would you be willing to do a follow-up interview?
Any resources or people you would recommend talking to?

Practitioners Remote Interview Procedure (60 minutes)

Basic information
1. Full Name
2. Job Title
3. Place of Employment
4. Job Description (include what kind of media you have worked on). How do you describe your day-to-day activities?

Madlibs template for the individual to talk through their trajectory in design / Directed Storytelling
So we are going to use this template as an aid to talk through your trajectory into design.
I went to ___ (university / college name) for my undergraduate degree in ___ (degree name) and masters / doctorate degree in ___ (degree name) at ___ (university / college name). I really got into design when ___. I have worked at ___ (company name), as a ___ (job title) and the experience was ___ (adjective). I am interested in ___ (design space) and want to move into ___. I define design as ___ and I was mostly influenced by ___.

Free word association - put the words on sticky notes
5. List 3-5 words that you associate with design
6. List 3-5 words that you associate with attributes "designing"
7. List 3-5 words that you associate with characteristics of "designers"
8. List 3-5 words that you associate with "design culture"

Interview questions
9. What do you think designers in 10 years will spend most of their time doing? 5 years?
10. What piece of advice would you give to design students ("born and brought up in design" vs not)? How does that differ from the advice you give students transitioning into design?
11. What is the best resource you've used to understand design?
12. How would you introduce yourself at a dinner party?
13. How do you describe what you do to your mother (/ a parent / stranger / friend / mother-in-law)?
14. How would you describe it to your hair stylist?
15. What do you think the public perception of design is today? How has following up with your clients changed their perception of design?
16. What do you think is unique about your institution's program?
17. I came to CMU expecting to _____. I ended up ____.
18. Where do you think the field of design education is heading?

19. As someone who has worked in both academia and industry, what do you see as the differences?
20. Can you speak on your thoughts about making vs. thinking in design?
21. Do you think living in ___ has impacted your work / perception of design? How so?

Thank you so much
Would you be willing to do a follow-up interview?
Any resources or people you would recommend talking to?

Educators (Remote and In-Person) Interview Procedure (30 minutes)

Basic information
1. Full Name
2. Job Title
3. Place of Employment
4. Job Description (include what kind of media you have worked on). How do you describe your day-to-day activities?

Madlibs template for the individual to talk through their trajectory in design / Directed Storytelling
So we are going to use this template as an aid to talk through your trajectory into design.
I went to ___ (university / college name) for my undergraduate degree in ___ (degree name) and masters / doctorate degree in ___ (degree name) at ___ (university / college name). I really got into design when ___. I have worked at ___ (company name), as a ___ (job title) and the experience was ___ (adjective). I am interested in ___ (design space) and want to move into ___. I define design as ___ and I was mostly influenced by ___.

Free word association - put the words on sticky notes (or say them aloud)
5. List 3-5 words that you associate with design
6. List 3-5 words that you associate with attributes "designing"
7. List 3-5 words that you associate with characteristics of "designers"
8. List 3-5 words that you associate with "design culture"

Card Sorting / Cognitive (and Concept) Mapping / Affinity Diagramming
These cards contain design concepts and terms. You can sort them to create a hierarchy, system, clusters or categorizations to reflect your understanding of design.
There are blank cards to add terms you don't see.
You can use the small sticky notes to add additional notes.
You are free to exclude cards if you feel like they don't fit.
Talk through your rationale after you're done.

Interview questions
9. What do you think designers in 10 years will spend most of their time doing? 5 years?
10. What piece of advice would you give to design students ("born and brought up in design" vs not)? How does that differ from the advice you give students transitioning into design?
11. What is the best resource you've used to understand design?
12. How would you introduce yourself at a dinner party?

13. How do you describe what you do to your mother (/ a parent / stranger / friend / mother-in-law)?
14. How would you describe it to your hair stylist?
15. What do you think the public perception of design is today? How has following up with your clients changed their perception of design?
16. What do you think is unique about your institution's program?
17. I came to CMU expecting to _____. I ended up _____.
18. Where do you think the field of design education is heading?
19. As someone who has worked in both academia and industry, what do you see as the differences?
20. Can you speak on your thoughts about making vs. thinking in design?

Thank you so much
Would you be willing to do a follow-up interview?
Any resources or people you would recommend talking to?

APPENDIX C

Participatory Generative Session Procedure (30 minutes)

Basics
1. Name:
2. Background in design:
3. Years of experience:
4. Current status:
5. Branding (role) advertised as:

Design Exercises
We are going to go through three design exercises and I want you to be mindful of your design process through each of these. I'm going to be video-recording what you do that we will later watch back, as well as taking photos.
I'm asking for two iterations. Gather all your process documents. Please write down on sticky notes the steps of your process. If you're having trouble with what titles to use, here's a list. If you have trouble recalling, we can watch the recorded video.

Prompt #1: Create a solution using technology that would make the general pubic more aware of climate change.
Prompt #2: Create a physical product that would change the perception of women with regards to their rights and abilities.
Prompt #3: Create a service system that would give kids in developing countries better access to education through technology.

Articulation and Reflection
6. So after doing this process and looking at the sticky notes, what similarities do you see in your process?
7. What makes your process unique?
8. So now that you've articulated what your process is, how would you explain it to an employer? How would you explain it to someone you're trying to form a connection with?
9. What kind of problems do you like working on? What are the deliverables?
10. What kinds of methods do you enjoy using?
11. How do you usually communicate process?
12. What do kinds of steps do you put on your invoices? How much time do you give to each step?
13. So based on this, if you had to make something that explained your process to someone, what would you make / do?

APPENDIX D

Design Dive: 21 methods

DAY	TYPE	TITLE	DESCRIPTION	BACK / SUPPORTING MATERIALS	PRINCIPLES	LEARNING OUTCOME	DESIGN METHODS USED
1	Sense	Love letter	Write a love letter to design. Tell it why you were initially captivated by it and why it's the one and only for you. Feel free to mention why it hasn't worked out with anyone else before.	Lines for writing letter	Individualization, Relativity	To articulate what you like about design	Love letter
2	Sense	Lens of design	Sort and arrange the cards in this envelope in any kind of hierarchy, cluster / categorization, or system you see fit. Think about how the design concepts map to your perceptions of design as a discipline. Use the sticky notes to make annotations as you see fit. Use the blank cards to fill in concepts you see missing.	19 cards + 1 special + 3 blank + sticky notes	Research through design, Individualization, Metacognition, Scalability, Relativity	To articulate how other subdisciplines fit into design	Card sorting, Concept / cognitive mapning, Affinity diagramming, Mental modeling, Word-concept association,
3	Sense	Trajectory into design	Map out your path to becoming a designer. Be sure to think about: • Formal and informal training / education • Work experience • Influential people • Pivotal moments • Design spaces of interest What stood out to you about your trajectory?	Squiggle to draw trajectory	Individualization, Metacognition, Relativity	To articulate the things you've done in design to get where you are	Directed storytelling
4	Synthesize	Process your process	Sketch your design process, using key words and stages. Circle your methods. Box your tools. What makes your process unique? What makes it familiar to other designers' / institutions' processes?	Sketch your design process.	Research through design (contextual inquiry), Individualization, Metacognition, Scalability, Relativity	To articulate your process	
5	Sense	Picking a fight	Write a letter picking a fight with design. Tell it why it frustrates you and why you're making it sleep on the couch tonight.	Lines for writing letter	Individualization, Relativity	To articulate what you dislike about design	Break up letter
6	Synthesize	Role models	If you could trade places with any other designer for a week, famous or not, living or dead, with whom would it be? What would being them give to you that you don't have now?	Picture + Name + Profession + What qualities or achievements has this person achieved to allow them to make an impact?	Contextualization	To articulate who you see as influences in design	Character profiles
7	Spread	Design Round Robin	Find at least 2 people to play with and distribute one card to each person. Each person secretly draws his / her interpretation of the word. After everyone is done, fold the card so that only the drawing is visible and pass it to the person next to you. Once you receive someone else's drawing, write your interpretation. Fold the card so their drawing can't be seen and pass it to the next person. Repeat the drawing-writing stages. Take turns sharing the results! The aim of this activity is the resulting conversation so make sure to leave time for that!	10 scored game cards	Individualization, Metacognition, Scalability, Relativity	To articulate what design is	Design charette
8	Synthesize	Design history	If you were charged with writing a design history textbook, what would be the chapter titles? Who would you interview?	Blanks for chapter titles	Research through design, Contextualization, Metacognition, Relativity	To articulate what influences in design history you think have made the largest impact	Historical analysis
9	Sense	Job Slices	Included in the envelope are sliced job titles. Arrange them on a spectrum from positive and negative. Use the blank cards to write in titles as you see fit. What combinations are more appealing than others? Why?	19 cards + 1 special + 3 blank + 2 postive / negative + sticky notes	Research through design, Individualization, Scalability	To articulate what job titles really mean	"Build your own"

10	Synthesize	Cootie catcher	Create your own cootie catcher with the materials provided.	Cootie catcher	Tangibility, Individualization	To articulate weirdo questions in design	Artifact analysis, Personal inventories
11	Spread	Fantasy business cards	Create a fantasy business card. Think about the job titles that were included in Day 9's activity.	Fantasy business card on back	Tangibility, Individualization	To articulate what kind of job you want in design	
12	Synthesize	Invoicing yourself	Make a pretend invoice for a design project for yourself. How much time did you spend on each step (hours or minutes)? What words are you using to describe your process?	Pretend invoice	Research through design, Tangibility, Individualization, Scalability, Relativity	To articulate what the steps of your process are and where you focus your time	
13	Sense	Design lifestyle	What does design as a lifestyle mean to you? What do you value in a design culture? Using Max Neef's diagram of needs, plot where your design lifestyle has been, is currently, and where you want it to go. Use the three colors of stickers to map your preferences for the past, present, and future.	Max Neef's diagram	Individualization, Metacognition, Scalability, Relativity	To articulate how you see your work creating value in the world	
14	Synthesize	Design in context	Sort and arrange the cards in the envelope in any kind of hierarchy, cluster / categorization, or system you see fit. Think about how design sits as a practice amongst the other disciplines. Use the sticky notes to make annotations as you see fit. Use the blank cards to add other disciplines that you see fitting into your arrangement.	19 cards + 1 special	Research through design, Contextualization, Relativity	To articulate how design fits into other disciplines in the world	Card sorting, Concept / cognitive mapping, Affinity diagramming, Mental modeling, Word-concept association,
15	Spread	"Design-erly" dress	Dress "design-erly" today. What did you wear?	What did you end up wearing? What are other things you wear to be "design-erly"? What does dressing "design-erly" mean? Do you think this matters?	Research through design, Individualization, Scalability, Relativity	To articulate the stereotypes about design	Contextual inquiry
16	Synthesize	Design the future	Using Dunne and Raby's conceptual model, predict where you see design going as a discipline. Be mindful of your impact on people and the planet. For more information on the model, visit designdive.com	Table for designing future	Contextualization, Scalability	To articulate where you see design going and why you're continuing with it	Design fiction, Speculative design, Scenario planning
17	Sense	Sticking it to design	Ask a friend to write a random word on a sticky note. Using 10 sticky notes (no more no less), relate that word back to design. Represent one idea on each sticky note through a combination of words and visuals.	Sticky notes	Contextualization, Metacognition, Scalability	To articulate how design is essentially in every part of someone's life	
18	Spread	Designer enactment	Ask one of your friends to pretend that they are a designer. Ask them questions about what they do. What did they talk about? How do you explain what you do to someone you know versus a stranger? Did you have an "aha" moment? Did you have any moments of awkwardness? What did you notice in your own reactions?	Observations:, Did they mention any classic designer stereotypes? Do you believe these stereotypes are valid? Why?	Research through design, Individualization, Relativity	To articulate the stereotypes about design	"Walk a mile" immersion, Experience sampling, Roleplaying
19	Spread	Creating value in design	How do you create value in design?	I create value for: my company / institution / team, society, myself; by _____ (value you create) to _____ (outcome)	Individualization, Scalability, Relativity	To articulate how you see your work creating value in the world	Madlibs, Statement starters
20	Spread	Ask me	Wear your "ask me what design is" button today. How did you explain what design was? How did you explain what you do? What were some of the misconceptions people had about design? Did you have an "aha" moment? Did you have any moments of awkwardness? What did you notice in your own reactions? On a twist of this activity, ask them what they think design is before you answer their questions.	Button: ask me what design is	Research through design, Tangibility, Individualization, Scalability, Relativity	To articulate what design is and what I do everyday	"Walk a mile" immersion, Experience sampling, Reverse contextual inquiry
21	Spread	Tweeting design	Write your definition of design using less than 140 characters.	Twitter interface	Individualization, Scalability, Relativity	To articulate what design is	

APPENDIX E

**More methods for exploration (in no particular order)**

Sense

"Obstacles in design": What obstacles do you see for design's development as a discipline? What are the actionable things an individual could do? What would your role model do (from Day 6)?

"Rose, thorn, bud": Using your love letter and picking a fight (Day 1 and Day 5), what are your roses, thorns, and buds in design?

"Abstraction laddering": Write down one statement answering "Where do you think design is heading as a discipline?". Using the abstraction ladder, fill out the why ladder above, breaking down the statement and the how ladder below (Luma Institute, 2012).

"What's on your radar?": Plot three points in each of the categories with reference to your practice as a designer. For more information on the kinds of sets, see Blevis and Stolterman (2009). Make sure you plot according to the concentric circles (primary, secondary, and tertiary) in order of importance in that category.

Knowledge-set

Tool-set   Mind-set

Skill-set
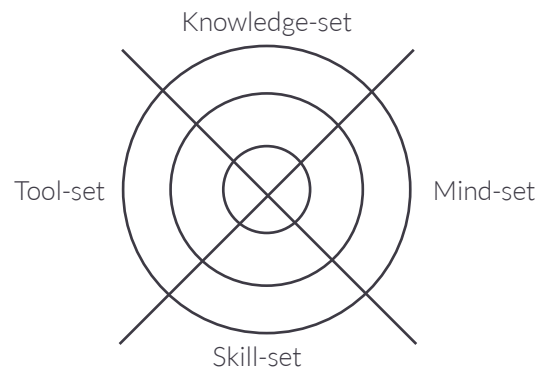
Synthesize

"Thinking to Making Methods": What methods do you use? Write them on stickies and arrange them on a spectrum from thinking to making

"Titling yourself": Collect all of your business cards, portfolios, and resumes. Look at the titles you've give yourself. What has been consistent throughout and what has changed?

"Build your own designer": Add different components (already given as puzzle pieces) to represent what your "ideal designer" would look like. Why did you make the choices you did? What meaning to attribute to those?

"Historizing yourself": What parallels do you see between design history and your personal trajectory into design? Use your cards from those two days (Day 3 and Day 8) to draw conclusions?

"Problem Tree Analysis": Draw yourself as a tree in design. Use your roots as your trajectory into design and your background, your trunk as issues that you're passionate about, and the branches as the change or impact you wish to have in the world.

Spread

"Words of work": Ask 3 friends to say 3 words each to describe your relationship to your work

"Animating design": Create a short 1 minute video of what you think design is. Use Design in a Nutshell as an example.

APPENDIX F

Non-Designer Kit

"Finding design": Take your finder to the market, the theater, the park, the park, any gathering place where there is a lot to see. Look at the world through it for half an hour. What is designed? What is not designed?

"Lens": Look at the magazine for 1 minute through the following lens:
• as work of art
• as an engineer
• as a designed product / service / system
What assumptions did you have with your design lens? What did you notice that was different from the other lens?

"Build your own designer": Add different components (already given as puzzle pieces) to represent what your "ideal designer" would look like. Why did you make the choices you did? What meaning to attribute to those? *(this coincides with "Build your own designer" under other methods for Design Dive)*

"Video watching": Watch a couple of the 1 minute videos produced by designers about design. Did you find them helpful? What was missing? *(this coincides with "Animating design" under other methods for Design Dive)*

"Design Round Robin": Find at least 2 people to play with and distribute one card to each person. Each person secretly draws his / her interpretation of the word. After everyone is done, fold the card so that only the drawing is visible and pass it to the person next to you. Once you receive someone else's drawing, write your interpretation. Fold the card so their drawing can't be seen and pass it to the next person. Repeat the drawing-writing stages. Take turns sharing the results! The aim of this activity is the resulting conversation so make sure to leave time for that! *(this coincides with of Day 7 "Design Round Robin" of Design Dive)*

"Heuristic Review of designers": We are going to play 20 questions for you to guess someone's job title (job titles are already provided). What do you see as the difference between each of these titles? What are the similarities? *(this coincides with Day 9 "Job Slices" of Design Dive)*

"Designer Invoices": Take a look at the invoice that they produced *(this coincides with Day 12 "Invoicing Yourself" of Design Dive)*, what questions do you have about it? What parts do you not understand?

"Design in context": Sort and arrange the cards in the envelope in any kind of hierarchy, cluster / categorization, or system you see fit. Think about how design sits as a practice amongst the other disciplines. Use the sticky notes to make annotations as you see fit. Use the blank cards to add other disciplines that you see fitting into your arrangement. *(this correlates with Day 14 "Design in Context" of Design Dive)*

"Sticking it to design": Interact with your designer for this activity *(this coincides with Day 17 "Sticking it to Design" of Design Dive)*. Complete the exercise twice. The first time give a word that is very specific; the second time give a word that is very broad. What did you notice between the two exercises?

"Designer enactment": Act like you're a designer. They are going to ask questions about what you do so be prepared to play the role. Did you have an "aha" moment? Did you have any moments of awkwardness? What did you notice in your own reactions? *(this correlates with Day 18 "Desiger enactment" of Design Dive)*

"Find a designer": Find a designer wearing the "ask me what design is" button. How well do you think they did explaining what they do? wjat were some of the misconceptions you had about design? Did you have an ""aha"" moment? Did you have any moments of awkwardness? What did you notice in your own reactions? *(this coincides with Day 20 "Ask me" of Design Dive)*

APPENDIX G

Entry Survey Questions for designers

1. How reflective are you (on a Likert scale from 1 to 10)?
2. How many hours a week do you consider yourself reflecting on your practice?
3. How well do you think you can communicate what design is (on a Likert scale from 1 to 10)?
4. How well do you think you can communicate what your practice is (on a Likert scale from 1 to 10)?
5. List 3-5 words that describe design.
6. List 3-5 words that describe designing.
7. List 3-5 words that describe your practice.
8. List 3-5 words that describe designers.
9. List 3-5 words that describe design culture.
10. Why have you decided to do Design Dive?
11. Any starting thoughts?

Exit Survey Questions for designers

1. Do you think this challenge has made you a more reflective practitioner? (yes or no)
2. In what ways?
3. How reflective do you feel now (on a Likert scale from 1 to 10)?
4. How well do you think you can communicate what design is now (on a Likert scale from 1 to 10)?
5. How well do you think you can communicate what your practice is now (on a Likert scale from 1 to 10)?
6. How have your thoughts changed in your journal?
7. Which have been your most favorite activities?
8. Which have been your least favorite activities?
9. Which activity has caused the most reflection?
10. Which activity has been the most helpful in communication?
11. List 3-5 words that describe design.
12. List 3-5 words that describe designing.
13. List 3-5 words that describe your practice.
14. List 3-5 words that describe designers.
15. List 3-5 words that describe design culture.
16. Please plot each method on the matrix (difficulty vs. importance).
17. Any final thoughts or feedback?

Entry Survey Questions for non-designers

1. List 3-5 words that describe design.
2. List 3-5 words that describe designing.
3. List 3-5 words that describe designers.
4. What does the word design mean to you?
5. Why do you think design is important?
6. Why have you decided to do this?
7. Any starting thoughts?

Exit Survey Questions for non-designers

1. List 3-5 words that describe design.
2. List 3-5 words that describe designing.
3. List 3-5 words that describe designers.
4. What does the word design mean to you?
5. Why do you think design is important?
6. Do you think this kit has helped you understand more about design?
7. How have your thoughts changed in your journal?
8. What were some "aha" moments?
9. Which have been your most favorite activities?
10. Which have been your least favorite activities?
11. Which activities have been most helpful in your understanding of design?
12. Which activities have been least helpful in your understanding of design?
13. Please plot each method on the matrix (difficulty vs. importance).
14. Any final thoughts or feedback?

APPENDIX H

Proposed timeline (in April 2014)

2014

April	Finish research proposal
May	Begin exploratory research and background readings, IRB Application
June	Exploratory research, Submit for IRB approval
July	Second round of exploratory research
August	Begin recruitment for generative research
September	Generative research with participants
October	Second round of generative research with participants
November	Develop low-fidelity prototypes, test with users, collect and analyze feedback
December	Poster session; present all work to date

2015

January	Create, test high-fidelity prototype with users, collect and analyze feedback
February	Refine prototype (high-fidelity)
March	Test prototype with users, collect and analyze feedback
April	Generate report/documentation of the final solution, synthesize findings & results, write paper
May	Final presentation

Revised timeline (in December 2014)

2014

December	Continued data synthesis and supporting research
January	Concept refinement, concept validation and production, generative / participatory sessions
February	Prototype development, design implementation, user evaluation testing
March	Prototype refinement, framework building, finalize deliverable
April	Thesis documentation, polish deliverable

Actual timeline

2014

April	Finished research proposal and approved
August	Began exploratory research and background readings, IRB application
September	Continued exploratory research, prepping materials for interviews, IRB Application, submitted for IRB approval
October	First round of exploratory research with participants
November	Second round of exploratory research with participants, synthesis of data, received IRB approval (delayed)
December	Fall poster session, presented all work to date including insights and opportunity spaces

2015

January	Continued data synthesis and supporting research, ideating on opportunity area
February	Ideating for participatory generative sessions
March	Pivot in project, created and tested low-fidelity prototype with users, collected feedback, and iterated
April	Refined prototype (high-fidelity). spring poster session, presented all work to date including final design, began generating documentation
May	Thesis documentation, synthesizing next steps, polishing deliverable