

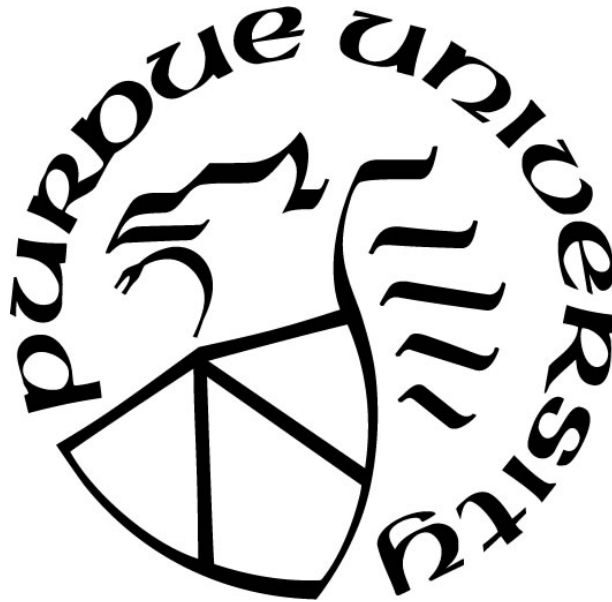
**TENSIONS IN STUDENTS' DESIGN PHILOSOPHY  
IN UX PRACTICE**

by  
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**A Thesis**

*Submitted to the Faculty of Purdue University  
In Partial Fulfillment of the Requirements for the degree of*

**Master of Science**



Department of Computer Graphics Technology  
West Lafayette, Indiana  
May 2019

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*Dedicated to Dr. Colin Gray, Dr. Austin Toombs, and Dr. Paul Parsons, for their continued support, mentorship, and friendship throughout not only this process, but throughout my time at Purdue University. I would also like to thank my friends and family, for their invaluable emotional support throughout my educational and professional endeavors.*

## ACKNOWLEDGMENTS

The author would like to thank the pseudonymous participants in this study, without whom this research would not have been possible.

This work is funded in part by the National Science Foundation under Grant No. 1657310.

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## ABSTRACT

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Degree Received: May 2019  
Title: Student Design-Value Tensions in Real-World Practice  
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The studio model of education incorporated in to many design-oriented HCI programs within the past two decades commonly brings a number of central objectives to the programs implementing such a model. The first of two notable objectives include the building of a “bridge” between pedagogy and practice, preparing students for the difference in realities between working within an academic setting, and the varying constraints imposed within an organizational setting. Additionally, the bridge often encourages the development of a student’s design philosophy, allowing them to acknowledge and understand their conceptions towards design which influence their decisions in situated project-processes, and in the projected design communities they might navigate towards in professional practice. While UX and design culture are continually increasing in presence within organizational settings, disconnects still remain between the beliefs of practitioners and organizations as to how UX might be best implemented, particularly for students entering professional practice with “blue sky” conceptions for how design might be practiced. This exploratory study addresses the dimensions of design philosophy espoused by students educated within design-oriented HCI programs, and how such philosophies are engaged and shaped further in professional practice. Through a qualitative interview approach, this study presents 9 dimensions of design philosophy alluded to through the accounts of 10 students and practitioners, reflecting upon their experience in education and professional practice. Leveraging existing work studying the flow of UX competence between an individual practitioner and the organization within which they practice, the discussion of the 9 dimensions of design philosophy presented provides four different ways in which the philosophies of practitioners might encounter tensions in professional practice. This research proposes future work on how the studio model of education in HCI pedagogy might more adequately prepare students for the realities of enacting their philosophies in practice, and also further consciously reflecting upon the shaping of that philosophy through felt contrasts between both education and

practice. Additionally, the 9 themes encapsulating dimensions of one's design philosophy display such a lack of uniformity (both in their presence amongst accounts given and strength in which they are espoused), warranting further investigation in to each in their own right.

## CHAPTER 1. INTRODUCTION

### 1.1 Statement of Problem

The paradigmatic shifts that have come with what are often regarded as the three waves of HCI (Human-Computer Interaction) research (Rogers, 2012; Grudin, 2017) have brought about a continual expansion in the field's foci, scholarly advocations, and resultant research paradigms. Progressing in alignment with technological advancements and the changing allowances of computing in professional and personal contexts, the foundational aims underlying much of the field's scholarly research efforts have moved from the study of human capability and efficiency of system use (such was the predominantly industry-centered nature of computing in first and second-wave HCI), to the significantly more holistic scope of the field today. Today's more holistic approach within design-oriented HCI (in comparison to previous decades) advocated for within the field are founded upon wishes for practitioners to more appropriately account for embodied patterns of interaction and behaviors in personal, professional, educational contexts, and beyond, leading to an increased presence of more philosophically-oriented learning objectives in a number of HCI educational programs (Rogers, 2012). These programs, while continually instructing on the theoretical background behind and implementation of design practices in preparation for industry, now seek to, at the very least, offer UX (User Experience) and HCI students a lens through which they can look to bring about social betterment, through the application of their design character and values in practice.

While the HCI community has expanded upon the engineering and performance foci from the past by becoming more inclusive to other disciplines, the multitude of companies seeking to employ the promising designers who come out of the field, still, generally speaking, appear hesitant to truly adopt the holistic approach taken by students with a critical mindset, instead preferring to stick with tried and tested methods which often gain quick, reliable results, in terms of commercial gain (Gray, Toombs, & Gross, 2015). A review of the existing literature presents a gap in research studying how practitioners originating from an increasingly critical educational domain encounter compromise or fulfillment of their values when working in professional practice, either in internships during education or in employment upon graduating, as well as the short and long term impacts of said compromise or fulfillment of those values.

## 1.2 Significance

This research aims to fill a gap in the existing literature, seeking a greater understanding as to the impacts of a critically-educated HCI/UX student's design values being fulfilled or compromised, when working in professional practice. The discussion emanating from this research may provide relevant insights with regards to the implementation within education of the scholarly advocacy for a critical approach for optimal translation in to future practice, as well as in organizational structures moving forward seeking to employ for UX roles from highly reputable HCI educational programs.

## 1.3 Research Questions

This study seeks to answer the following research questions:

- RQ 1: What elements of a design philosophy do students see as influencing their professional practice?
- RQ 2: What tensions do designers experience in their practice?

## 1.4 Assumptions

The following assumptions are made in the planning of this study:

- Any materials provided by potential participants in the initial request for experience information are accurate and representative of their true experience in the educational programs and professional roles detailed.
- All participants are able to fully understand the questions asked to them during interviews.
- All participants provide honest answers to the questions asked to them during interviews.

## 1.5 Definitions

The following terms are defined for the context of the work:

*Human-Computer Interaction (HCI)*: “The study and practice of the design, implementation, use, and evaluation of interactive computing systems.” (Rogers, 2012, p.2)

*User Experience (UX)*: An extension of HCI in addressing all aspects of a product or service

from the perspective of its end users (McCarthy & Wright, 2004).

*Design values:* Self-held practitioner beliefs and morals which influence decisions made in the design process, influenced by what we have learnt and experienced in the past (Nelson & Stolterman, 2012).

## CHAPTER 2. LITERATURE REVIEW

This chapter reviews the various literature that centers around this topic. First, the progression to today's more critical advocacy in HCI academia, and to an extent education and practice is discussed. Second, the concept of self-held values in design, and how the role that they play in the decision-making process. Finally, the commonly encountered difficulty in adopting a critical approach in UX practice, due in part to UX competency misalignments at a level of corporate strategy leading to value tensions.

### 2.1 Evolution of HCI as a Discipline

Three widely discussed paradigmatic shifts, often referred to as 'waves', within the field of HCI have led to a new advocacy within the academic community (Rogers, 2012), one radically different in comparison to past focuses of the field. Founded upon a holistic user-centered approach to design, research, and further scholarly work, practitioners are encouraged to also take a critical approach to their work, with the intention of designing for social betterment and equality through the acknowledgement and breaking down of historically one-dimensional design approaches, which have, in the past, marginalized the needs of the many (Bardzell, 2010; Duarte & Baranauskas, 2016).

#### 2.1.1 Building upon First & Second-Wave Paradigms

To highlight the true nature of the transitions that HCI has undertaken as a field since its conception, it is important to first look at the underpinnings of its so-called first and second wave paradigms. In the first wave of HCI research, the communally agreed upon field wide set of practices and epistemological foundations were born out of engineering and human-factors, framed predominantly in optimizing the capabilities of "a single-user interacting with a screen-based interface". (Rogers, 2012, p. 4). It could be said that this paradigm of HCI research sought to create an exact science by which the relationship between humans and computers (particularly the way in which humans could operate them) could be studied, through rigid and systematically applied guidelines and methods (Bødker, 2015).



Technological improvements that allowed for significantly lower costs of computing, led to a widespread adoption by organizations to incorporate computers in to their workplace, with the overarching goal of having employees operate them to increase work performance and efficiency (Rogers, 2012). A second-wave of research led to human behavior beginning to be studied more rationally, with cognitive modeling, context of use, and situated action being some of the theoretical foundations upon which the optimal informational processing between human and computer was studied, centered around the interaction metaphor of “mind and computer as symmetric, coupled information processors” (Harrison et al., 2011, p. 5). While this second paradigm of research brought other disciplines in to the discussion (most notably psychology), an engineering-centric underpinning remained somewhat in research and practice, despite emerging conflicts with some of the field’s emerging interests and subsequent scholarly advocations.

Continual technological advancements brought about the beginning of the widespread adoption of personal computing devices that we see today in laptops, phones etc., which has quickly led to a significantly widened scope with regards to contexts of use of digital technology usage, allowing people to “find ways to make technology useful and appealing in a wider variety of tasks” (Grudin, 2017, p. 103). As a result, a third-wave paradigm of new scholarly concepts and theoretical work has driven the creation of a new arsenal of methods in research, design, and analysis, all within the scope of meeting the continually evolving challenges posed by new usage settings and technological phenomena (Rogers, 2012), with the field moving further and further away from seeking to make the understanding of human-computer interaction an exact science. This period has been influential in many of the common-practice methods and underlying philosophies drawn upon by many UX teams today in the application of empathy for users throughout the design phase. Research in this third-wave paradigm of HCI embraces experience and meaning making, challenging the values relating to technology depended upon in second-wave HCI, many of which are still prevalent in research and practice today (Bødker, 2015). The necessity to take a critical approach to identify, challenge, and overthrow the social and cultural norms that have somewhat dictated, or at least highly influenced in a tacit manner the approach and design of everyday things for an extensive period of time, is now becoming prevalent in the field through the work of scholars such as Sengers, David, and Kaye (2005), and Bardzell, Bardzell, Forlizzi, Zimmerman, & Antanitis (2012).

### 2.1.2 Criticality in Commercially-Based Design

It should be stated, however, that just because this need to work in a manner sensitive to such factors has been brought to the forefront of scholarly attention in HCI during this third-wave research paradigm, does not mean that the advocacy for designers to take a more accountable and responsible approach societally-facing design is a recent perspective, though not necessarily in HCI. Going back to the 1960s, Ken Garland's 1964 'First Things First' manifesto focused predominantly on practices within advertising-based graphic design, calling for its practitioners to "return to a humanistic aspect of design" (Flask, 2010), in response to a radically increased social climate of consumer selling at all costs in Britain (Soar, 2002). Built upon the belief that design is not a neutral, value-free process, the manifesto sought to re-radicalize a design industry that had become lazy and uncritical while focusing only on achieving lucrative stakeholder objectives (Soar, 2002). With complete understanding as to the necessity for high-intensity marketing, Garland (1964) and the manifesto signees did not call for its abolishment. Instead, the call was made for designers to act responsibly upon their roles as social and cultural intermediaries, using their skill and position to create artifacts containing "more useful and more lasting forms of communication".

While receiving some attention, the underlying messages in the manifesto did not have the radical effects on the design industry, and perhaps beyond, as hoped. Many within the field rejected the imposition that the industry contained humanistic values to be adhered to and acted upon. In 2000, the manifesto was updated and republished by Adbusters magazine, leading to perhaps a more active adoption of the critical perspective to commercial design hoped for in the initial release. Those who welcomed the reopening of the debate of criticality in design aided in the moderate reshaping of "social, cultural, historical and political dimensions of design and advertising" (Soar, 2002, p. 574) that we see today, with commercial advertising efforts for projects deemed to be harmful such as cigarettes, firearms etc. now in many cases containing critical aspects attempting to invoke a rhetoric questioning of consumer intentions and values.

As shown by a relative reluctance in the commercially-centric design field to adhere to the advocacy for changes in practice outlined in the initial release of the 'First Things First' manifesto, sometimes the climate within a particular field just isn't ready to introduce, or even accept, radical calls for change. Perhaps this then, is why a critical approach is only just now in

this third-wave of HCI, being accepted by the scholarly community within the field, let alone the wider range of practitioners beyond that.

### 2.1.3 Value-Sensitive Approaches in HCI

The concept of reflective design (Sengers et al. 2005) questions the black-boxed approaches to design that had become central to the discipline throughout the first and second waves of HCI, and the often sub-consciously held assumptions instilled in to designers and researchers and the way they go about their work as a result. The authors state “as designers, we are left to wonder: what values, attitudes, and ways of looking at the world are we unconsciously building into our technology, and what are their effects?” (p. 49). The difficulties in taking this assumption-ratifying approach and challenging the commonalities in somewhat uniform approaches to design and research taking today were highlighted further by Harrison et al. (2011), pointing to the notion that past efforts made to concretize methods almost as recipes to follow regardless of context, whilst reducing the burden on practitioners, came at the cost of technology and service design ridden with ill-fitting assumptions for a wider user base.

Value-Sensitive Design as a theoretically grounded approach is debated somewhat in how best implemented in practice, but the essence of its objective is to aid in the approach of designing “technology that accounts for human values in a principled and comprehensive manner throughout the design process” (Friedman, Kahn, Borning, & Hultdtgren, 2013). This research does not seek to digress in to the intricacies of how designers might seek to adopt such an approach (given the aforementioned debate as to how that might most effectively be done). However, the approach exemplifies the critical advocacy in third-wave HCI in ensuring that those within the community develop “a fundamental understanding of how enduring human values (e.g., human welfare, accountability, autonomy, and freedom from bias) take shape in, and are shaped by, computational systems” (Le Dantec, Poole, & Wyche, 2009, p. 1141).

A core component of the field’s critical objective is not only having socially responsible designs built upon a continual understanding and accounting for practitioner understanding and accounting for of human values of users, but also a continual reexamination of the methods in research and design that contribute to any eventual design (Le Dantec et al., 2009). That being said, often due to reasons relating to practicality, ignorance towards or unawareness of values, or pressure from stakeholders, black-boxed methods and approaches that have become popular in

practice are often mindlessly incorporated in to the design process by practitioners with little to no awareness as to the assumptions that incorporating them bring to the design and research process.

This reliance on black-boxed methods and approaches to design has perhaps added fuel to the fire of the field in taking active steps to pursue a wider adoption of this approach in the future. Some (certainly not all) Westernized HCI & UX educational programs are pressing students to continually explore, reflect upon, and build their own core values, both as humans, and subsequently as designers and researchers. Although not entirely adopted, or at least as widely as the scholarly field advocates would wish so, the hope is that this next generation will carry the agenda and continue the mission of creating technologies that “improve the current state of human existence” (Bardzell et al., 2012, p. 288), but in a manner that fully prioritizes the holistic identification and fulfillment of human and societal needs through socially responsible design, rather than the pseudo-scientific, almost authoritarian approaches (Sengers et al., 2005) that contribute to a status-quo adhering mentality of subsections within technology creation today.

This contrast in at least the essence of value-sensitive design being (hopefully) instilled in the HCI & UX students of today, and the need for design practitioners to hold this holistic perspective as a tool within their arsenal, is exemplified by the work of Shilton (2013). Conducting an investigation in to the presence of ethical and human value-based decision making within a project-based design team, Shilton continually writes under the tacit assumptions that designers are there to design, and nothing else, even writing at one point that design teams benefit most when hiring outside ethics experts to build these values in to the design process. Whilst working within the same umbrella of the necessity for a holistic approach to achieving socially-responsible design, this assumption of almost an impossibility of holistic thinking by designers points towards the disjoint present in many design teams today with regards to really having the values and needs of users at the forefront of their minds, and is a disjoint that design-oriented HCI educational curriculum seeks to resolve.

## 2.2 “Turn to Design” in HCI Education

There are some substantial aspects in the task facing today’s design-oriented HCI & UX-based educators in their aims to instill a holistic approach and perspective within their students.

One of those is the challenge of creating and delivering an educational curriculum that, while offering an effective opportunity to learn and practice a variety of research and design techniques and methods, also encourages those students to continually reflect upon the values and subsequent judgments that guide their own decision making (Holt, 1997). Not only this, but continually understanding and reflecting upon the influence that those judgments have on the work that they produce, and the manner in which their own character as designers evolve through their experiences in education and practice. The key challenge is perhaps, being the fact that without instilling this method of internal reflection, those judgments are most likely exercised in a tacit, sub-conscious manner (Boling et al., 2017).

As put by Nelson & Stolterman (2012), whilst highly contextualized, the decisions we make in life are influenced greatly by what we have learnt and experienced in the past, which then subsequently mould our self-beliefs and values. Our decision making within a design or research process is no difference in this regard. This statement builds upon Holt's (1997) design-centric concept that "any state of affairs in which there is an opportunity to change the course of events calls for the exercise of judgment." (p. 114). These core judgments based upon values are the underlying, but complex in nature, foundations upon which designers decide which courses of action are right, wrong, or a tradeoff of variant factors, within a particular context (Gray & Boling, 2018).

### 2.2.1 Value Systems in Education

Prior to the adoption of a design-oriented approach in some HCI & UX-centered educational programs, institutions offering such programs were deemed to be failing in their ability to offer a learning environment in which the underlying epistemological foundations of the program would allow for a continual development and understanding of one's values and judgments in design (Nelson & Stolterman, 2012). 15 years on, it might be fair to say that a number of the more reputable programs in question have better adhered to the advocacies of the field which have grown in strength since then, imploring their students to take a significantly more reflective and value-sensitive approach to their own learning and practical expertise, and perhaps to a lesser extent, the professional environments seeking to employ these students have changed for the better in this regard as well. Korkmaz & Boling (2014) discuss this transition in perspective that many HCI educators have now taken on board, stating that "skill proficiency and

knowledge in the field alone do not make students entering a field of design ready to deal with the complexities of real-world practice” (p. 162).

This is not to say that just because the environment a student is immersed within seeks to instill this critical approach, the student will necessarily be able to look past the all too tempting ease of blindly applying the methods favorable in, and deemed to be the option for success, by industry (Korkmaz & Boling, 2014). HCI educational programs vary greatly in the weight of importance placed upon the instilling such a critical perspective in their students, but even at the more radical end of that spectrum, the development of this learning environment is not always enough to ensure that its students adopt the approach, or even act upon socially sound values in a fitting manner.

### 2.2.2 Method Application Based upon Contextual Factors

One aspect of the educational aims of HCI programs taking on a design-orientation is to have students build an appreciation for seeking to understand the contextual factors at play within each particular problem they might encounter, and to select and apply methods which best suit the situation in the grand scheme of the project, as opposed to routinely applying what have become “central methods” within the discipline. The ability to apply methods deemed to be appropriate within each situation is built through an education on the differences between approaches, and their underlying principles (Harrison et al., 2006).

The work of Falman (2003), amongst others, was influential in bringing about this emphasis on the application of appropriate methods. Through a study examining the role played by sketching in the design process, Falman discusses the involvement of the designer in the direction of a project process through a simultaneous dialogue of the contextual factors at play within a problem and potential solutions to move forward, rather than simply solving problems and moving from step to step. Woolrych, Hornbæk, Frøkjær, & Cockton draw upon culinary analogies to explain the attitudes these programs wish to instill in their students when it comes to the selection of methods in practice, in their work aptly titled ‘Ingredients and Meals Rather Than Recipes’. The authors suggest that those within the discipline need to “focus more on what gets cooked, and how it gets cooked, and not just on how recipes suggest that it could be cooked” (Woolrych et al., 2001, p. 941). The authors translate this analogy through their work to implore practitioners to use the methods and approaches within their arsenal simply as ingredients to

draw upon within the design process in order to gain the greatest value possible considering the factors at hand, rather than blindly sticking to a prepared recipe which will only bring about basic benefits when blindly applied.

### 2.2.3 “Studio Bridge” in Design Pedagogy

In HCI pedagogy specifically, the past two decades have brought about changes adopted by a number of programs aiming to address the gap of rigor and applicability between HCI education and practice, through the implementation of a studio model of education (Gray, 2014). Taking in to account the difference in reality of learning the discipline in an explorative academic setting, versus practicing those teaching in an organizational context, this model acts as a “bridge”, as theorized by Brandt et al. (2013). This bridge commonly utilizes real-world scenarios and even clients for collaborative project work, with constructive critique of such work, allowing students to work within an environment which not only allows them to apply their education in context similar to practice, but through doing so develop their design philosophy (and convey the conceptions influenced by that philosophy to peers) and better understand their conceptions for design with a professional career in mind (Gray, 2014). Through the enactment of one’s philosophy through the work allowed by this studio model of education, students are able to work within a preliminary practice community in a manner similar to how they might see themselves practicing in a future professional setting, but without the constraints or influences that such a setting might bring (Gray, 2014). In doing so, students position themselves upon the “studio bridge”, building an understanding of the projected design community within which they might see themselves working moving forward (Brandt et al., 2013). This encouraged building of a consciously understood philosophy would likely better allow students to identify those communities, with Boling et al. (2017) stating that “it may be that individuals are drawn to, or remain in, design communities where frequently espoused values are consonant with their own deeply held views”.

### 2.2.4 Need for Application of Philosophy in Professional Practice

With the increasing necessity to take a holistic perspective of each and every situation within research and design in order to ensure of one’s commitment to value-sensitive and socially-responsible design, the need to be able to reflect on the assumptions, judgments, and

values that one takes in order to “know everything that is reasonably possible to know about a situation from a systemics perspective” (Nelson & Stolterman, 2012, p. 221), is now a more important perspective than ever before for those within the field to be able to tap in to.

### 2.3 Student Transition to UX Practice

In the mid-2000s, the innovative efforts in consumer-appealing product design of Apple’s Steve Jobs and Jony Ive brought about great commercial success for the company. Rival technology companies acted swiftly to the success of personal digital products such as the iPod, iMac, iPhone etc., increasing efforts to recruit design talent to implement a design-first approach, at the expense of HCI professionals perhaps deemed to be unable to assist in this transition of company and product vision for the future (Grudin, 2017). The design-first approach taken by corporations in the upper echelons of technological innovation has been gradually adopted by organizations of varying sizes and working within wide-ranging domains within the past decade (Gray et al., 2015).

#### 2.3.1 Practitioner Disconnects in Organizational UX Settings

This waterfall effect has led to a greatly increased presence of user-centered approaches in industrial organizations providing technology and/or services, with more companies jumping on the bandwagon, so to speak, and hiring UX designers, managers, interns etc. to pursue their agenda of bringing UX to their working practice. While the demand for UX talent is naturally a positive not only for practitioners with regards to employment opportunities, but also for the field in the industrial recognition of the importance of a user-centered approach, this “rapid adoption of UX as a strategic advantage” (Gray et al., 2015, p. 3286) has brought about a greater possibility of negative experiences in practice for UX employees.

As discussed by Gray et al. (2015), many of these corporations seeking to implement this approach from a strategic standpoint originate from and have previously worked within engineering-dominated cultures and practices. With this, often comes an internal company culture which is hostile towards the perspectives of UX in comparison to their own, particularly so as HCI now progresses in to this more critical and value-sensitive space. Additionally, there is the fact that considering many of the companies make this strategic move to employ UX practitioners, that move is founded predominantly on aims to increase profits for the company



moving forwards. Needless to say, a decision within the design process based purely on the core needs of the user, rather than the business, will not always be the one with the highest chance of immediate commercial success.

As Holt (1997) points out, the criteria for success, and subsequently the judgments, values, and general approaches seen as valuable, *may* differ greatly between the designer and a commercially-oriented money-prioritizing business, team, or individual. Regardless of a designer's critical approach and intentions to produce socially-responsible work based upon their own values, and the judgments which subsequently influence their decisions, if the commercial potential is not evident, then it is likely that the designer will be pushed in to a compromise of their own design character in to designing for the company's needs, rather than human needs of the user. As stated by Buwert (2018), a common perspective and actuality within many of today's organizations is that their employees (particularly designers) need only work in a manner which adheres to ethical codes, thereby fulfilling the legal standards that all work must meet, and as a result creates rigid rules that provide an aesthetic sensation of ethicality. A continued commitment only to adhering to these codes, somewhat disables a designer's ability to actively solve complex issues in a sensitive manner which accounts for core human values going beyond what they deem to be ethical and legal.

The work of Chivukula, Brier, and Gray (2018) builds upon this concept of designers placing what they perceive to be ethical adherence above the values of users, as well as their own values as designers. Their exploratory study found that even those designers openly showing sensitivity towards user values may decide to instead act upon commercially driven intentions and disregard those values, in order to achieve stakeholder goals through persuasive and manipulative design tactics. Work such as this indicates not only the difficulty in remaining true to any adopted critical approach despite commercial temptation and stakeholder pressure, but also the value tensions that might arise when a designer seeking to act upon their held values for purely user-centered design come up against pushback from those in the same team or in a role of higher authority with different aims and values (Friedman et al., 2013).

### 2.3.2 Design Philosophy

The foundation upon which such disconnects might occur for practitioners in an organizational setting (and within design in general) can be explained by what Nelson and

Stolterman describe as one's "design philosophy" (2013). Through continual reflection upon experience in both education and process, each individual builds a personal and unique understanding of design and conceptions as to the way in which design should be best practiced. This ever-continuing development of one's philosophy allows for an individual to not only become more aware of how and why the nuances they come across in relation to design may align with or differ from their own conceptions, but also how they enact their philosophy in practice through contextualized decisions made. As this philosophy is better understood, the individual is able to better articulate more confidently their beliefs in a more situated or general sense.

It's imperative to note that these philosophies are learned through one's experience in education, practice, and general life, and as a result, may come in to conflict with the philosophies of others in practice. These could be the philosophies of fellow practitioners, or less design-oriented philosophies of others in an organizational or project setting such as stakeholders and colleagues. With the fact that one's philosophy is everchanging, it is entirely like that the philosophy shaping one's practice will be influenced in some manner through working with others and the views that they bring.

Looking through the lens of UX competence, the work of Gray (2014) studied the shifts in perception of students (in internships) and new full-time practitioners as to their own identity as designers and the manner in which their academic training was translated in to professional practice. Gray's work studied the influence of organizational settings in professional practice upon the identity of students and designers, seeking to understand how educational programs adopting a studio model were able to adequately prepare students for acting upon their education in practice, through an alignment of realities between the two with the increasing spread of UX adoption in organizational settings in mind. The study found that while the participants were able to enact their design philosophies and education in practice in a positive manner, bringing about organizational change in some cases, they also had their education-built assumptions towards design ratified by corporate culture, particularly with regards to how their "blue sky" conceptions for design practice played out in an organizational setting with business constraints and in conflict with other philosophies, and as such, their ability to bring about impact as a practitioner.

The study brought about direct implications for design-oriented HCI pedagogy. Firstly, in better preparing students to enact upon their own philosophy and education in practice, but while

expecting and embracing the culture of an organization and the constraints to one's practice that such a culture might bring. Additionally, considering the breadth of HCI as a discipline, design-oriented pedagogy within it was implored to better allow students to consciously understand their own philosophy and identity, allowing for their direction towards the kind of UX jobs which might provide a better fit for them in practice.

### 2.3.3 Tensions in Practice

Gray et al. (2015) reframed the concept of UX competence discussed in the work of Gray (2014), to address the disconnects sometimes encountered by practitioners between what they feel can be offered by UX as a discipline within a situated organizational setting, and how that organization perceives UX to be a gateway to achieving their desires for organizational efficiency. With previous literature only looking at UX competencies in isolation (i.e. from only the practitioner's or the organization's perspective), the work of Gray et al. (2015) provided a lens through which to view how the competencies between the two parties are linked, and shift over time. Based upon a schema incorporating the espoused competencies of the individual, and the group (organization), in addition to how those espoused competencies play out over time (in use), four separate flows of UX competence can be constructed to better understand the way in which an individual might influence the competencies of an organization and how UX is practiced within that setting, or alternatively the organization may influence the individual, and how such shifts take place over time. The work in question provided a foundation for a plethora of future discourse as to the tensions between practitioners and the organizational cultures that they find themselves in through practice, with the potential to better explore how one's design philosophy might be influenced by the reflection upon such tensions.

## 2.4 Chapter Summary

The literature reviewed discusses an increasingly holistic nature to research and design in HCI, with numerous educational programs now imploring their students to recognize and act upon their philosophies which influence the judgements made within their decision-making process in practice. The rapid adoption of UX at a strategic level in companies has led to an increased demand for UX talent, often at companies working predominantly from engineering and human-factors perspectives where UX competency is misaligned, leading to disconnects and

tensions between the philosophies of practitioners and those within the corporate setting. With the nature of HCI/UX education likely to increase in its value-sensitive and reflective nature, this research study aims to answer the following questions:

- RQ 1: What elements of a design philosophy do students see as influencing their professional practice?
- RQ 2: What tensions do designers experience in their practice?

## CHAPTER 3.      **METHODOLOGY**

The following chapter details the research process and methods that will be utilized in order to investigate and answer the proposed research questions.

### 3.1    Purpose

The purpose of this qualitative interview study was to better understand the obtaining and shaping of values relating to their design philosophy and practice by HCI/UX students educated in design-oriented programs, and how they engage these values in professional and academic practice. Through interview procedures differing only slightly dependent on the individual's current status as a student of practitioner, conducted with 10 eligible participants originating from 4 separate design-oriented HCI/UX programs in the United States, the researcher collected data on each participant's educational background, experience in professional practice, and deep exploration in to situations arising within practice where tensions in self-held values arose. Through an inductive thematic analysis, the researcher sought to understand the impacts on career aspirations and design-values, where those values have been consciously activated in some way through tension in practice and education. The primary data sources in this research were an initial request for information from potential participants, and semi-structured interviews.

### 3.2    Data Sources

The data collected and analyzed in this research originated from two sources. Firstly, basic information regarding previous educational institutions and programs attended, as well as previous and current employment information, was gathered from each participant through the completion of a Google Forms questionnaire which also acted as a participation sign-up form. Upon the researcher obtaining this information and verifying whether or not the academic and professional experience of each participant matched the criteria for the study, each participant satisfying that criteria took part in a single, semi-structured interview. Data to be analyzed from

these interviews were derived in form of researcher notes, and a transcription of an audio recording of each interview. In total, 10 participant interviews took place.

### 3.3 Data Collection

All data gathered from the two aforementioned sources was done so as outlined in the following sections, prior to analysis taking place.

#### 3.3.1 Demographic Survey

To ensure that each participant interviewed would be in possession of the required academic and professional experience to satisfy the sampling criteria, those wishing to sign up for the study were requested to complete a Google Forms questionnaire gathering low-level information regarding their past (and current if applicable) experience in both education and employment. There were two goals to the obtaining of this information. First, it allowed for the researcher to confirm the participant's eligibility in completing the interview component of the study, by ensuring that they not only have sufficient educational experience in a design-oriented HCI/UX learning environment, but also the experience in professional working practice to draw upon during interview discussions. Second, it allowed for the researcher to have an understanding of each participant's experience throughout the conducting of the subsequent interview.

While all interviews used a relatively similar protocol (depending on whether or not the participant was currently in education or practice), an understanding of this experience allowed for the interviewer to ensure that no previous roles in employment that were of interest went undiscussed simply due to a participant forgetting to bring it up during the interview. This proved to be paramount, as the prior understanding allowed the researcher to conduct each interview in a manner which helped "optimize understanding of the case rather than to generalize beyond it" (Stake, 2005, p. 443).

Upon confirmation by the researcher that the participant was indeed eligible to take part in an interview, said participant was contacted via their requested contact method in order to seek confirmation on their willingness and ability to participate.

### 3.3.2 Interview

All interviews conducted with participants deemed eligible based upon their educational and employment experience followed a similar process, with slight differences culminating only from issues relating to location feasibility.

#### 3.3.2.1 Environment

The environment in which each participant interview took place was entirely dependent upon whether the interview was more feasible (both for researcher and participant) to be conducted either remotely, or in person.

Of the 10 interviews that took place, only 2 were conducted in person, due to location and budgetary constraints. For the 8 interviews which were conducted remotely, the video-conferencing tool Google Hangouts was leveraged.

#### 3.3.2.2 Briefing and Consent

Each interview began with obvious pleasantries, before the researcher provided the participant with a sufficient understanding of what was expected from them throughout the course of the interview, an overview of the topics that would be discussed, in addition to the possible need for a brief one-time discussion in the near future once data analysis had taken place. Once the participant acknowledged an understanding of their expected responsibilities, the researcher explained how the audio recording and notes taken during their session would be safely stored and accessed, process, analyzed and destroyed once their need had passed, in addition to their complete anonymity and de-identification of information at the earliest possible stage, apart from the need to use the name and institution of their academic program in the final report, which all participants agreed to. Once consent was provided by the participant, the researcher began the audio recording for the interview session.

#### 3.3.2.3 Interview Procedure

Each of the 10 interviews conducted followed almost the same procedure, regardless of whether conducted in person or remotely. Upon the granting of consent, the researcher began the audio recording of the interview, using both the iOS recording application Voice Memos, and also an audio recording using the Mac OS application QuickTime on the researcher's laptop, to

provide a backup copy of the audio. Each interview lasted for a total of between 45-75 minutes, including the time taken for debriefing.

Each interview followed one of two semi-structured protocols created, differing mildly for those currently in practice, and those currently in academia. The protocols were built using the foundation of the protocol used in a pilot study, and the literature reviewed. The questions asked were written with the intent of facilitating participant reflection and subsequent valuable discussions with regards to their initial interest in the field, time in education, and experienced in the workplace, through encouragement to explore the occurrences which may (or may not) have led to their position today in both academia and practice. All questions asked, including clarifying questions, were aimed to be simple in nature, and without the use of academic or complicated technical jargon (Kvale & Brinkmann, 2009).

Throughout the interview, the researcher made a conscious effort to not interject during any participant anecdotes or explanations. Body language and other cues were used to encourage a full participant exploration in to each channel of thought, with the researcher only requesting clarification through interjections when absolutely necessary. By only asking clarifying questions where needed throughout the interview, in a manner which did not unnaturally interrupt the interview flow, the researcher sought to ensure that the interview proceeded without assumptions, thus allowing participants “ample freedom and time to unfold their own stories, and follow up questions to shed light on the main episodes and characters in their narratives” (Kvale & Brinkmann, 2009, p. 131).

While the questions put towards each interviewee (dependent upon the protocol used) were the same in principle, the manner or order in which they were asked were slightly altered based upon researcher judgment, in order to maintain a free-flowing, natural narrative to the interview. Where appropriate, participants were prompted to further explore particular anecdotes or feelings that appeared to possess potential for interesting data through provocation to elaborate, such as, for example, a mention of a disagreement within a team in a previous role.

Throughout the interview, notes were taken by the researcher (including timestamps for later reference), often based on body language not picked up on the audio recording, or certain aspects that would benefit from clarification or revisiting later or at the end of the interview. As advised in the work of Carspecken (1994), the use of a low-inference vocabulary in the written record of an interview allowed not only for a reduced risk of assumption on actions moving



forward, but if reported in the same manner would allow for a more capable winning of consensus and agreement with the interviewed participant.

#### 3.3.2.4 Debriefing

Upon completion of the interview protocol, the researcher used any field notes taken as a debrief foundation. The researcher, using the advice of Kvale & Brinkmann (2009) went over “some of the main points that he [...] has learned from the interview. The subject might then want to comment on this feedback [...], this gives the subject an additional opportunity to deal with issues he or she has been thinking or worrying about during the interview” (p. 129). This closing tactic not only allowed for a refining of researcher inferences made throughout, but in some cases also encouraged some participants to not only further elaborate on certain comments made, but also raise separate issues that they were either hesitant to bring up, or did not come to mind, during the main conversational phase of the interview. Before parting ways, the researcher thanked the participant for their time, and once again reiterated that if necessary and acceptable, the possibility of further contact at one point in the future to confirm any findings with the participant.

### 3.4 Sampling

A stratified purposeful sampling strategy was devised with the researchers intentions for extrapolations in mind, “case-derived and problem oriented” (Patton, 2014, p. 713) to create the potential for applicability of findings in providing implications for UX strategy in organizational settings, as well as design-oriented HCI & UX pedagogy moving forward. While it was hoped that 16 participants would be recruited for the study, the researcher was only able to recruit 10 suitable participants from 4 separate design-oriented UX/HCI institutionally-based educational programs in the United States of America (undergraduate or graduate programs account for the same institution). The 4 design-oriented UX/HCI programs selected were done so based upon the presence of a studio-model within their academic program, in addition to program reputation, advice of educators within the field, and to a lesser extent convenience.

Of the 4 individual sought to be recruited from each institution, no more than 2 could be currently enrolled in an eligible program either as an upperclassmen, or as a graduate student, while no more than 2 could have graduated from said program and now working in an industry

setting, with graduation taking place no earlier than December 2015. In order to be eligible, all participants must have possessed at least 3 months of practical UX design and/or research experience with a professional company in addition to their studies (at minimum, one summer internship).

Participation was restricted to those graduating around or after December 2015, to ensure that the educational programs they were enrolled in were likely to have adopted at least some form of design-led approach to teaching UX/HCI that would lead to the instilment of value discovery in their approach to practice. The purposeful sampling strategy sought to gain a relative range of educational experience, in addition to varying amounts and natures of practical experience, so as to “illustrate characteristics of particular subgroups of interest, and facilitate comparisons” (Patton, 2001, p. 244). An overview of the demographics of each participant can be seen in Table 1 below.

Table 1 Participant Demographics

| <b>Pseudonym</b> | <b>Current Status</b> | <b>HCI Degree</b> | <b>Time in Industry</b> |
|------------------|-----------------------|-------------------|-------------------------|
| Sarah            | Graduate Student      | MS (pursuing)     | ~ 3 years               |
| Elizabeth        | Practitioner          | MS (attained)     | ~ 3 years               |
| Joseph           | Graduate Student      | MS (pursuing)     | ~ 2 years, 8 months     |
| Daniel           | Practitioner          | MS (attained)     | ~ 2 years               |
| Abigail          | Graduate Student      | MS (pursuing)     | ~ 3 years, 6 months     |
| Aaron            | Undergraduate Student | BS (pursuing)     | ~ 10 months             |
| Sam              | Graduate Student      | MS (pursuing)     | ~ 1 year                |
| Rosie            | Practitioner          | BS (attained)     | ~ 1 year, 3 months      |
| Kim              | Practitioner          | BS (attained)     | ~ 3 years, 6 months     |
| Charlotte        | Undergraduate Student | BS (pursuing)     | ~ 1 year                |

### 3.4.1 Recruitment

Upon the selection of the 4 educational institutions and their programs from which to recruit, the researcher sent out emails sent to specific departments at the selected institutions to

request the forwarding of a request for participation from their eligible students and alum, with a link to the Google Drive information gathering questionnaire/sign-up form attached to said emails.

### 3.5 Analysis

Each interview audio recording was uploaded to Temi, an automated online transcription service. Once the researcher manually cleared up any errors in the transcript generated, that transcript was printed and paired with the researcher notes taken during the same participant interview, in preparation for thematic analysis, which was completed using the online qualitative research tool Dedoose.

#### 3.5.1 Thematic Analysis

In order to efficiently identify the researcher-influenced themes within the data gathered, Braun and Clarke's (2006) guide to thematic analysis was utilized, in the following process: The researcher began by familiarizing himself with the data through multiple read and listen-throughs of each interview transcript, field notes, and recording. Codes were then unitized using an inductive approach where an initial codebook was created through the selection of two widely ranging cases (although memos created during the transcribing of each interview ensured that no interesting themes were lost through being omitted from usage in this initial codebook created), ensuring that the themes identified later would originate from the data, while also relating back to the existing concepts discussed in the literature reviewed, where possible. This codebook of 9 themes relating to espoused values, and 4 of tensions in those values, was then applied to all 10 of the interviews conducted. All units extracted during analyses contained a reference to the participant interview from which they originated, so that the story of each participant was not lost in later analysis and the subsequent reporting of findings.

#### 3.5.2 Reporting

Once the coding in Dedoose had taken place, all excerpts tagged with each theme were exported and narrowed down to those which presented the strongest explanations of the theme to which they were attached, in addition to the inclusion of others which explained dimensions of

that theme, or atypical cases. Once each value and tension themes had their list of units finalized, a write-up for each theme was conducted and placed in to the report.

### 3.6 Limitations

- This research only sampled students and graduates from 4 HCI/UX programs in the United States of America, due to time and budgetary restraints.
- Of the 4 programs and institutions represented in the sample, only 1 participant was recruited from 1 of the programs, while only 2 were recruited from another.
- Although steps were taken to facilitate natural conversation, interviews may have introduced a degree of discomfort to participants, which may have somewhat inhibited how freely they might have conversed or offered potentially sensitive information.
- Due to a lack of feasibility, 8 of the 10 interviews were conducted remotely via web-based video conferencing. While still a valuable method of interview, some of the human-contact lost in this method may have slightly decreased the effectiveness of the researcher as an instrument throughout interviews.
- Due to time constraints, it was not possible for the researcher to conduct member checks with each participant to ensure that they agreed of the findings based upon their accounts given.

### 3.7 Validity

The researcher deems himself to have past experience in having their approach to work and career aspirations affected from a consciously felt compromise and fulfillment of his values in practice. In addition to this, the researcher possesses experience in a HCI-educational program advocating for designer reflexivity, and research experience in lab predominantly focusing on criticality and ethics within UX practice and pedagogy. Working from a critical perspective, the researcher is in an agreement with “the feminist notion that we don’t separate who we are as persons from the research and analysis that we do. Therefore, we must be self-reflective about how we influence the research process and, in turn, how it influences us” (Morse et al., 2016, p. 40). Therefore, the researcher has taken perspective and method-based steps to maintain the validity of the research process and subsequent findings, with regards to methodological rigor

and reduction (where possible) of researcher bias, to ensure that findings arose predominantly from the data collected and literature reviewed, rather than self-held researcher beliefs.

With regards to the collection of data through semi-structured interviews the following steps were taken to maximize the validity of the research conducted. The finalized set of lead-off, backup, and follow-up questions included in the interview protocols contained absolutely no academic or technical jargon (Kvale & Brinkmann, 2009), with no leading elements that in any way suggest a question to be answered in a way that adheres to the beliefs or bias of the researcher (Patton, 2001). When taking field notes during the course of the interview, the researcher's use of a low-inference vocabulary reduced the risk of assumptions being taken forward in analysis (Carspecken, 1994). When the researcher felt that potential bias may play a part in an inference made, he marked that inference with an 'X', so that these inferences could later be clarified through follow up questions with the participant (Kvale & Brinkmann, 2009).

Throughout the thematic analysis, the researcher erred on the side of overinclusion when unitizing the interview transcripts, audio, and field notes, as "it is easier to reject what later appears to be irrelevant material than to recapture information suddenly realized to be relevant but discarded earlier (Lincoln & Guba, 1985, p. 346). Within this process, the researcher worked in a pragmatic rather than rigid manner, utilizing the technique as he saw fit to solve the methodological problems at hand. As put by Morse et al. (2016), "The analytic process is first and foremost a thinking process. It requires stepping into the shoes of the other and trying to see the world from their perspective" (p. 40).

The devising and implementation of the purposeful sampling strategy aided in the researcher's goals for extrapolation in findings (Carspecken, 1994; Patton, 2014), enforcing the potential applicability of any findings and their possible implications with regards to HCI/UX pedagogy, as well as UX strategy in organizational settings (Patton, 2014). The strategic selection of cases to report in greater detail (and those in lesser detail) aided in the mission to not identify atypical or extreme cases in addition to more typical ones, but also to "clarify the deeper causes behind a given problem and its consequences than to describe the symptoms of the problem and how frequently they occur" (Flyvbjerg, 2006, p. 229).

## CHAPTER 4. RESULTS

The following chapter reviews the themes constructed during analyses, with 9 themes relating to dimensions of the design philosophies of those interviewed. The 9 dimensions relate to (but sometimes blend across) the situated judgements of individuals within their practice, as well as their higher-level self-held responsibilities. Each dimension contains three subdimensions relating to the perceived benefit/s of that aspect of one's design philosophy's activation, or experiences encountered that have helped shape that conception. The 9 dimension themes are labelled as follows: Context-Driven Methods, Research Leading Design, Humanness over Efficiency, Cross-Functional Teams, Empathy for All, Ethical Fulfillment, Fighting for the User, "Impact" Seeking, and UX Advocacy and Evangelism. Each theme contains direct quotes from participants extracted from the interviews, attached to their given pseudonyms.

Table 2 Design Philosophy Dimension Themes

| <b>Dimension</b>                 | <b>Definition</b>   |
|----------------------------------|---|
| <b>Context-Driven Methods</b>    | The selection and application of research and design methods based upon on an awareness and understanding of the contextual factors at play in a certain project-based situation, and that will gain the optimal outcome for that stage of the project.               |
| <b>Research Leading Design</b>   | Encapsulates the belief that UX education and practice should be first grounded in an understanding and application of research, both in its value and outcomes, with design coming after or in tandem with research being more beneficial and impactful              |
| <b>Humanness over Efficiency</b> | The wish to conduct work in a manner that prioritizes the emotional connotations of a user's interaction with technology, rather than a more cognitive, performance-natured approach that likely prioritizes quantitative insights gained through validative testing. |

|                                     |  |
|-------------------------------------|--|
| <b>Cross-Functional Teams</b>       | The activity of working with those from outside of UX (such as developers) in either class or practice-based settings, and the benefits that come out of such a working environment.                                       |
| <b>Empathy for All</b>              | Possession of empathy by practitioners towards all, both in general life and practice, not just showing empathy towards the end users of a project, but also those working on the same team/in the same environment.       |
| <b>Ethical Fulfillment</b>          | The adherence to or deviation from ethical responsibilities felt by an individual, as either a practitioner or person, in relation to their work.  |
| <b>Fighting for the User</b>        | The belief in or activity of contesting decisions by stakeholders, colleagues etc. which could potentially bring about change that would be against the best interests of the users, according to the individual's belief. |
| <b>“Impact” Seeking</b>             | The intention to, or previous experience in, purposefully seeking out opportunities in practice allowing for one to contribute to self-perceived impactful work.   |
| <b>UX Advocacy &amp; Evangelism</b> | An individual's commitment to bringing about long-term education to others (in professional or personal contexts) as to the values and capabilities of UX and/or design thinking in general.                               |

#### 4.1 Context-Driven Methods

Context-Driven Methods refers to the selection and application of research and design methods based upon an awareness and understanding of the contextual factors at play in a certain project-based situation, and that will gain the optimal outcome for that stage of the project.

#### 4.1.1 Rationale and Context, Over Black-Boxed Design Recipes

A common mindset appearing to be adopted throughout the four educational programs represented within the interviews, is the unwillingness to apply the more reputable and valuable methods in research and design practice within the project process, without a solid rationale given the contextual factors at play as to why that method would bring about more value than another. Daniel, currently working in a research and strategy role having graduated with a Masters degree, reflected upon how his program taught him to look upon his role in the project process as “*the chef versus the cook*”, explaining that one professor implored to his students that with each and every project, they

*“have all these opportunities or things you could possibly do. Um, and it's up to us to figure out our own way of doing things. And so really being self sufficient and being able to think on our own and explain our thinking, rather than following some recipe of design thinking. Um, you know, we're really able to think about the entire context of what is going on, and think of the best methods or solutions based on our own intuition. Um, so yeah, I think cheesy analogy, but they kind of train us to be chefs rather than cooks”.*

Aaron also experienced a similar shift in mindset throughout his time so far in his UX undergraduate program. After stating this his “*initial challenge was figuring out like what it is that I'm even doing and figuring out like what is UX, um, like what is the process, what should I do?*”, Aaron identified that shift in his mindset and levels of confidence within that process had changed, now feeling that he asks at each stage “*what do I want to find out and then what is gonna, what methods are going to give me the most benefit?*”

A recent job interview for a research-oriented position left Abigail, currently a graduate student, perplexed when a question left her dumbfounded at the seeming lack of appreciation, or even awareness, of the application of rationale-backed methods:

*“I was asked a question, what my favorite research method was and I just was like, what? Like what does that even mean? Like what? I was like, for what reason? Like, you know, it was just a really weird question. I was like, I don't know. And to me I'm like, do you not understand research? Like why would you ask me that? Also like what type of method do you mean? Like I'm like*



*within what? Like there's so many types of methods. Like in my head, I'm like looking at a spreadsheet of methods all clumped up together and I'm like, I dunno what, what you're talking about”.*

#### 4.1.2 Underlying Understanding of Methods Allows for Practitioner Adaptability

A number of individuals alluded to how the understanding of a method’s suitability and potential benefit with case-by-case contextual factors in mind, allowed for a practitioner to adapt more effectively when working within different problem spaces, contexts, technologies etc. Charlotte, currently an undergraduate student in a UX program, valued her own *“ability to handle ambiguity and tackle problems”*, and that the possession of this critical mindset with regards to the application of methods *“can be leveraged to apply to any job or context. So not even just like working as a UX designer, but in any role that you take on”*. When asked about why this would be a crucial mindset moving forward, Charlotte explained *“because technology is always going to change but having the skill to adapt is important”*.

Charlotte was not alone in conveying the importance placed in such a mindset. Daniel, now involved in the hiring process for applicants to join his team in industry, explained some of the skills he felt crucial for such applications to possess:

*“we look through how they kind of frame the problem up front, um, and then how they decided to solve the problem, by just the decisions they made to try to tackle the problem, you know, who they talked to, what methods they used, why they used those methods, why they chose those people. So rationale for their methods and target users”.*

#### 4.1.3 Value in Low-Cost, But Well Selected Methods

Abigail lamented the culture within the undergraduate HCI program within her institution, where students had typically not bought in to what she perceived to be the value available in engaging with simple research-through-design methods. The students in question, while *“very skilled with their tools, their design tools and they understand, you know, design principles very well”*, would fail to see the issues in jumping straight to creating high-fidelity, fleshed out prototypes, and as Abigail explained would ask questions such as

*“can I just start in to like my final prototype, why do I have to do a paper prototype? And it's kind of like, because they think I've gotten to a point where I've developed, you know, the skill where I could just make a quick digital one. Why do I have to still do this paper thing? Yeah. So explaining the value of like the rough prototyping, like and also sketching, a lot of them don't want to sketch, which I find very weird”.*

Daniel on the other hand told of an experience he'd had in introducing a consultancy client to the potential value in employing less traditional and relatively low-budget but well thought research and design tactics, on the back of an improvised research method created to obtain insights quickly and cheaply within the context of the problem at hand. Working with the client in creating a new interface for an ATM, said client was hesitant to conduct any research requiring actual users throughout the prototyping stage, due to conceptions regarding not only the cost of recruiting users, but also in the the time it could take to build a prototype they deemed worthy of placing in front of them for feedback. Reflecting upon this and the subsequent turn of events, Daniel remarked

*“is it really design thinking if we're not talking to the users? Because they're stuck on projects where there's no research and they're just making decisions out of their ass. And so, you know, in school we learned that, you know, you can talk to anybody, you can go up to anyone at a coffee shop and do some guerrilla type research. Um, and so I was able to kind of show them how to, how to do that. Um, they're designing an ATM, like a new ATM interface. Um, and so I was like, well, everybody pretty much uses ATMs, so anybody on the street could, could probably be a potential user [...] so they built the prototypes of the ATM on an iPad, and took it out to a coffee shop and just talked to random people about, what if this was an ATM, what would you think of that?”.*

Daniel delighted in telling of the client's reaction to the insights gained through such quick-and-dirty design and research, in comparison to the previous experience where they were *“used to the super expensive, like you'd go through a recruiter and pay them 200 bucks to join*

*your session” before reveling in the delights of this new option: “So it's research for free? Like are you kidding me?”*

## 4.2 Research Leading Design

Research Leading Design encapsulates the belief that UX education and practice should be first grounded in an understanding and application of research, both in its value and outcomes, with design coming after or in tandem with research being more beneficial and impactful.

### 4.2.1 Ask the Right Questions, Find and Tackle the Right Problems

The benefits of conducting research as a means of understanding the problem space and its intricacies prior to any substantial design work taking place (and perils of not doing so) were certainly not lost on those interviewed. Speaking to her value placed in the practice, particularly so in industry, Abigail explained

*“you save money when you do research first, you don't embarrass yourself as a designer when you do research first. Um, I, I think just like the holistic understanding of who we are designing for. Um, if it's not there you just waste everybody's time. Um, yeah. And I've seen that in practice too. It's like I worked for companies where I swear they're just lighting money on fire because they don't do research”.*

Abigail went on to reflect upon the spark of her initial interest in pursuing research-focused education and positions, commenting on her work with designers in the past who she felt were *“doing things without a purpose, and I felt like a lot of designers didn't understand why they were making anything or, um, you know, there's a lot of manufactured 'whys' as far as to why, you know, what they were doing”.*

Having initially sought out more design-focused roles prior to completing her graduate education, Elizabeth (now working in a research and strategy role) noted the shift in her intentions to now seeking to position herself within the research and strategy area of projects, claiming that *“research is now becoming more of where you want to be because that is where decisions are getting made”*. Joseph, currently a graduate student, pared down to the essence of what he believed to be the power in effectively incorporating research in to the scoping stages of

a project: *“I think at its core it comes down to answering, or creating and answering the right questions”*.

#### 4.2.2 More Than Just Validation

A number of participants lamented what appeared to be a common misconception within organizations as to what the actual purpose of UX research is, with said organizations appearing to value its incorporation in to their practices simply as an avenue for validating assumption-laden designs and decisions. Rosie, currently working as a practitioner in the healthcare field having graduated with an undergraduate UX degree, discussed the lack of foundational research that took place within the company she had previously interned, stating that instead,

*“when they do user research it's like, okay, this week is user research week. So like all of these people would come into our office and like the two user researchers that we had would sit down with them and test everything. From my application, your application, your sister's application, her cousin, like everything that we had been designing from like a UX standpoint, it all got tested during that week”*.

Abigail referred to what appeared to be a similar attitude to *“research”* in a company she had previously worked for, where in addition to having the practice geared predominantly towards validating any products before moving them on to the next step, she had to deal with the expectations from those within the organization that the role of those activities was only to validate, and not raise any concerns. In Abigail's words,

*“they want you to be like excited about the brand, which I totally get, but it does make it hard to be a researcher because you are kind of like more of a consultant, so you can't really drink the Koolaid so to speak [...] it's always like, we think that we're going to get this out of research and that never happened. So it's kind of like in every job I've had it's like we want you to just say this is great and that my idea is going to work and it's a hundred”*.

#### 4.2.3 Allow Research to Lead, But Not Consume Projects

While the value placed in foundational, explorative research to influence the scoping of a problem to tackle and direction of a project was evident throughout the interviews, certain cases did raise their concerns with focusing too heavily on the initial exploration aspect of a project process, where it can become easy to fall in to the trap of not feeling able to progress without leaving any space for ambiguity not filled by research findings.

Aaron alluded to the potential for too much research in the initial stage of a project to actually suppress creativity in ideas moving forward, reflecting upon projects completed in academia where he felt his team were *“very research heavy and it wasn't until recent that we're like, we need to come up with more interesting ideas”*.

Kim (currently working as a practitioner in enterprise having graduated with an undergraduate UX degree), discussed similar experience in academic projects becoming engulfed by the need to *“heavily rely on research”*, where this reliance led to her and teammates feeling that

*“in every project we couldn't do anything. We didn't want to do anything without that research because we felt like it wouldn't be in the right direction or like things would go to hell if like we don't do any of that stuff”*.

### 4.3 Humanness over Efficiency

Humanness over Efficiency refers to the wish of a practitioner to conduct their work in a manner that prioritizes the emotional connotations of a user's interaction with technology, rather than a more cognitive, performance-natured approach that likely prioritizes quantitative insights gained through validative testing.

#### 4.3.1 Design to Enhance Lives, Not Just “Increase Performance”

What was evident from the majority of, if not all participants interviewed, was a clear appreciation for the value of UX in creating systems which allow those interacting with them to be more efficient in whichever tasks they may be using such systems to complete. However, the value placed in understanding and designing to enhance the emotional aspects for the user related to these systems, was clearly paramount. Sam (currently a graduate student) reflected upon the

business and engineering driven goals of his previous company, and constraints upon his own mindset as a result. He said of the products created in such an environment: *“it’ll be functional, but is it ever going to be intuitive? Is it going to be useful? Is it going to be something that your users are going to like using?”* The discussion of Aaron presented a reminder that the adoption of this emotion-valuing mindset is not necessarily an instantaneous teaching the moment one decides to pursue a career in UX. When looking back at his first internship, Aaron identified what he felt was a misalignment in approach to UX between himself and his manager, claiming that the manager *“was very usability focused”*. However, Aaron then backtracked after reflecting upon his own practices during that period, admitting *“well I guess at the time, so was I, so I guess that was, I thought that was fine”*, before going on to explain that through the experience that had come since that internship, both in academia and professional practice, he was now *“more interested in, I mean, yes can people do the thing, but do people like, like it the way it’s done or is it, I guess easy is usability, but like, do people want this at all?”*

Perhaps in one of the more ironic cases of a company focusing almost entirely on the quantitative performance aspects of a product rather than its effects on the lives of those interacting with it, Joseph discussed his time working with a client in the medical field who were looking to launch a smart inhaler to market. As Joseph explained:

*“the company was trying to have patients connect their smart phone to the smart inhaler and it would show them the number of doses left, um, how successful each dose was. Stuff like that. Um, and so the goal, it was a really cool product, but there were a lot of problems with the architecture of the app. People were struggling to learn how to use it, um, people were dropping off”*.

Joseph went on to explain that coming up with a potentially valuable idea for a qualitative *“more longitudinal study to understand how people will use this first when they learn it, how they continue to use it, and then after a week or two, how is their performance changing? Are they even still using this?”*, the client still opted to conduct a usability study, due to the fact that *“they had a very strict timeline and they weren’t ready to put resources into that so they were very focused on, you know, 19 out of 20 were able to do this”*.

Sarah, currently a graduate student, reflected upon her time working for a company operating in the military space, discussing her employer’s lack of attention paid to *“user*

*empathy and like caring about things like that*”, instead describing their implementation of what they perceived to be UX as *“a very mechanical approach to thinking about how people operate”*. Given that her background prior to that’d been in cognitive science and psychology, Sarah explained that the misalignment of mindsets was evident in that role, due to her interest in

*“the way a software makes the person feel and like how it can like change your state of mind and while efficiency and stuff is important, I think it's important to have products that make people feel secure and make people feel like they're doing a good job or things like that. And that's so important for UX, just like understanding when you're designing these systems that there are real people on the other side of it and that even despite your best intentions, sometimes the software you make will make people feel stupid and if they feel stupid and don't want to interact with it, it's like make or break depending on their situation”*.

#### 4.3.2 Companies Adopting UX for Efficiency, Rather Than Human Needs

Throughout Joseph’s academic training and limited time in practice prior to accepting his first big internship, all work appeared to be entirely focused on understanding the user’s problems and creating solutions which had their emotions and best interests firmly rooted within. However, he described gaining an understanding that the company with whom the aforementioned internship were only really interested in implementing UX practices to find ways to reduce safety costs that came about from manufacturing injuries, and those reduced costs were indeed the only value that they saw in incorporating UX in to the organization as *“a bit of a wakeup call”*. As a result of this, Joseph seemed to have the human nature stripped away from his work, and had to adapt his practices in some ways to account for this, stating that it *“also changed the way I communicated my recommendations. It wasn't, people will have a more positive experience, but you know, this is how retention will improve”*.

Returning to Sarah’s story of her time working in a UX role with a company working to provide solutions for the military, reflecting upon her reasons for eventually leaving the role allowed for a further explanation of why the company’s mindset towards how UX should be implemented within the organization differed so greatly to her own. Sarah claimed that *“while the company was interested in UX because it's kind of this big buzzword and it checks a lot of their boxes in terms of like design”*, they were actually more *“focused on improving human*

*decision making and making humans more efficient because that's all super military*". Ironically, it appeared that the company seemed to disregard (if they were even aware of) some of the core principles of UX, instead almost operating as its antithesis due to the fact that, in Sarah's opinion, *"they didn't really care so much about like the human centered design process"*.

#### 4.3.3 Stakeholder Goals for Efficiency Disregarding Core Human Emotions

While the majority of the cases discussing a company's adoption of UX for efficiency reasons tended to involve each company failing to recognize the need for acknowledging human emotion and needs, one case presented by Sarah involved a company actively acknowledging yet disregarding the emotions of their users in favor of pushing through a project which would be genuinely detrimental to them. The capstone project in question had Sarah and her team working with a healthcare company designing a speech recognition system, with the aim being to reduce the time required by the physician to conduct each patient visit, with Sarah simplifying the company's aims as *"they spend too much time talking to patients, we got to like cut down their time talking to patients"*. However, upon further research, Sarah's team found that for the physicians, *"really that's the best part of their days oftentimes because they want to connect with people"*.

### 4.4 Cross-Functional Teams

Cross-Functional Teams refer to the activity of working with those from outside of UX (such as developers) in either class or practice-based settings, and the benefits that come out of such a working environment.

#### 4.4.1 Offering Different Perspectives Towards Problems

Some participants alluded to the necessity in UX teams working closely with those outside of their department for a number of reasons, but perhaps the most commonly highlighted benefit was the need to incorporate as many different suitable perspectives as possible in to the project process in order to effectively understand, scope, and tackle a problem. Rosie's self-described appreciation for *"collaborative design"* was partly built upon having those inside and outside of UX around to *"bounce ideas off of and someone to help you when you get stuck in those situations or like make sure you don't forget the small little exception cases because those*



*are very important*”. Sarah reflected regretfully upon missed opportunities throughout her internship to involve members from other departments in her work, feeling at the time that a lack of UX knowledge and experience on their part would limit the value in their participation. However, towards the end of her internship, she came upon the realization that

*“you don’t have to be trained in UX to be like a UX assistant. You can definitely be of use just like even as simple as like coming to like interviews and helping to annotate interviews or like help me talk through ideas more. I did a lot of this by myself because I didn’t think other people would be able to help me because they didn’t have the training but I didn’t have the training either, so like who am I to judge?”*

Abigail touched upon what could be one of the factors in some UX practitioners’ hesitancy or dissatisfaction towards involving those from other departments during the project process, alluding to the idea that personal pride and ego might cause practitioners to put up this barrier. When discussing some of the values she would hope to instill in any team she worked within or even managed in the future, Abigail identified the need for

*“mutual respect for how they all need to work together. Valuing everybody’s expertise and opinion and understanding that sometimes the designer doesn’t have the best idea for a design. Sometimes it comes from someone else and that doesn’t mean you’re a bad designer or like a bad developer if you don’t think of something, it’s like you work together and that’s, that’s where the best work happens. Like you all have so much to learn and grow from being in that type of environment”.*

In another case, Elizabeth too shared Abigail’s value for cross-collaboration and the need for team leaders to work to create such a working environment. When discussing the kind of team she hoped to manage one day, Elizabeth explained that

*“I think that that’s kind of the person I am is that, um, I’m not going to be happy until I feel that everyone is collaborating and learning from each other. And I don’t think everyone needs to have my background to be in this field, but I think that you have to be open and understanding and embracing each other*

*and like, um, and so I think that my philosophy is to make sure that, um, people understand that their skill set is just as valuable as mine”.*

#### 4.4.2 Instilling User-Centered Mindset in Non-UX Employees

While not explicitly alluding to how such a shift might come about through cross-departmental teams, Joseph discussed how he would intend to create a user-centered culture throughout any company he might hold a management role within in the future, with the aims of having all employees on the same wavelength in have a mindset geared towards the user’s best interests:

*“I think if it isn't already, I'd work with the other lead folks to make sure UX is built into the process from the start. Um, whether or not that changes the business plan, um, I don't know. But I think making sure that a user centered approach is onboarded in to every employee and team member. It's super important, one because it speeds up the process and you don't have to convince people this is how we should do it. But also engineers can even start thinking in a user centered way and so they can put themselves in the shoes of the actual users rather than coding for the sake of it or something”.*

Charlotte actually brought up an experience she’d had during her internship where she was able to provide some tools and strategies for a department outside of the UX team to begin conducting their work in a more user-centered manner. Impressively, it only took one session with the team for Charlotte to feel like she’d made a lasting impression, and when glossing over the ways in which she’d helped, explained that

*“the documentation team was so accustomed to just kind of like taking the requirements, interfacing with the team, um, and just writing something out and they wanted to learn how to be more user focused. So, um, I was kinda teaching them some tools and ways to think and approach documentation”.*

#### 4.4.3 Provide Ways of Communicating Effectively with Those Outside of UX

A commonly occurring topic of discussion throughout the interviews were the struggles encountered by individuals when attempting to effectively communicate research findings or

design recommendations to members of teams outside of the UX department, within their respected practice. While said individuals more often than not learnt on the job how to adapt their communication when interacting outside of their team, some lamented the lack of effective academic training they had received in working and communicating with those outside of their own discipline. Joseph, when reflecting on such troublesome incident he had faced in practice, stated that

*“one thing that does come to mind is how little there is some programs that have a priority on communication, whether it's research, design, product management, data science, engineering, communicating your work, not just to stakeholders but also to the rest of your team, is sometimes pretty difficult”.*

Charlotte shared similar feelings towards her own education, and when asked to explain what she felt to be the key issues at hand, elaborated that

*“I feel like something that's way under emphasized in every program is cross functional collaboration. That's something I got a lot through my internships. Um, so I was fortunate enough to build that experience, but a lot of my peers don't feel the same way because they don't have a lot of internship experience to support that [...] I feel like, so there's capstone and TECH 120, but both are really bad examples of what cross functional collaboration is supposed to look like. Because you're kind of just thrown in and not really given much support. Whereas I felt like in industry, I did have a little more support and I could ask more questions”.*

While she felt privileged to have picked up such an appreciation for adapting her communication with other departments through her experience in practice, Charlotte took it upon herself to aid in the creation of a hackathon at her university. The aims for creating the event were to *“create a space where people could, um, work with people in other disciplines and learn from each other, and through that make their own processes better”.*

## 4.5 Empathy for All

Empathy for All refers to the possession of empathy by a UX practitioner towards all, both in general life and practice, and not just showing empathy towards the end users of a project, but also those working on the same team or in the same environment.

### 4.5.1 Holistic Understanding for Everybody Affected by Decisions

A number of individuals presented stories of times in their practice where the contextual factors at play required them to consider the impacts that any work might have on groups of people outside of the target user audience. Sam, discussing his work in designing for television devices, brought up a problem he came across through research where the company he worked for did not offer an effective method of self-installation for the visually impaired. As put by Sam,

*“When someone who's visually impaired can't, they're not allowed to self install their own devices. So they have to wait and let a technician into their homes, which for them is a huge breach of trust. And they don't want to have to let someone, some stranger come in, in if they can't see, you know, they could take advantage of them”.*

While he considered it unlikely that the company he was referring to would ever take the hit of working to create a solution for what he thought would be a minute percentage of the population, Sam also considered a secondary party who might not benefit from the current (and only) solution offered for such customers, requiring maintenance staff to enter their homes to complete the installations for the visually impaired customers, stating that *“on the other end of the technicians don't like going into people's houses either”*.

In the academic setting, Aaron brought up a previous class project focused around improving the grocery shopping experience of a certain group of shopper, where the team initially came up with a solution that they felt would allow people *“to be able to find the things they're looking for. Um, without having to like a take a lot of time just walking around or like if they're kind of awkward and don't want social interaction, they can do it without that”*.

However, such a direction for the project was quickly redirected upon the team's realization that the solution, if implemented, would have *“negative implications for users as well. Um, like I*

*think it's a good thing to have people want to try to talk to people. Also like people are employed to be there to help you, so you're kind of eliminating them”.*

#### 4.5.2 Awareness for How to Communicate with Others Within Company

A fairly common point of discussion raised by some of the participants was the need to not only empathize with those falling within the direct or indirect impact of a project, but also for practitioner to show the same empathy and understanding to those around them, particularly fellow employees within the organization who may not necessarily share the same mindset. When asked to discuss an experience in her professional practice where she struggled to convince stakeholders of a change that she felt needed to be made to a product, Kim spoke with a hint of regret at how she tried to navigate forcing through somewhat radical changes to a product with the team who had been in charge of it for years and had *“built this from like no webpage to web page. And so when I was making recommendations, it was like they were literally protecting their baby”*. When asked what she had taken away from the situation, Kim looked back at it as a learning experience in communicating more efficiently with those from outside UX, stating

*“I think that's how my communication got better because in the beginning, I guess I was using the wrong words or language that made people be protective of their baby. Um, so that's just something that I learned as I went through this and like felt like I was hurting people's feelings and stuff”.*

When asked what he felt could have been changed in his education to better prepare for him for his time in practice, Joseph raised some issues he had encountered also in effectively communicating recommendations to those outside UX:

*“I think one thing that does come to mind is how little there is some programs that have a priority on communication, whether it's research, design, product management, data science, engineering, communicating your work, not just to stakeholders but also to the rest of your team, is sometimes pretty difficult. Um, there've been plenty of times where I had to communicate research to a designer and then I went with the same slide deck to a marketer and a lot of the slides were just useless because they had different questions, they had different expectations. They, they're not necessarily user centered, they're more business*

*centered with an eye for users. So, um, I guess I should have put more time into crafting, personalized finding reports [...] I think that's one thing that's lacking. So, I don't imagine a lot of focus is going to be put on it, but something I wish I had more awareness of".*

Rosie, having been in her current role for almost 9 months at the time of the interview, appeared to not only be intent on bringing about a positive change to those impacted by her professional work, but also improving the day-to-day lives of those working alongside her. In her own words: *"how can we make sure that our people are happy? Because like I feel like in the team I'm on right now, like it just seems like everyone hates coming to work. I mean, hates coming to work every day"*. Rosie, went on to explain some of the ways in which she had tried to foster a happier working environment for those noticeably dissatisfied, and how she felt the enjoyment she gains from bringing about such a change might make her an ideal fit for a leading role at a later time:

*"it's something that I have tried to like instill, so like I play cards at lunch every day and like I invite people to come play with me just so we have something to talk about. Or like I put together like a ping pong tournament for my department and like other surrounding departments just because like, I feel like people need that like fun break during the day because like it can be dreary and it can be difficult and it's like people need a little bit of fun. I've had one person tell me like, I look forward to coming and playing cards with you. Like that is the highlight of my day. Um, because like their work just sucks sometimes. And so I like being that person for other people and I think I could do that more so in a management role"*.

#### 4.5.3 Empathy for Stakeholders and What Is/Isn't Feasible

Some of the participants more experienced in organizational practice discussed the benefits of (or even necessity in) possessing a degree of empathy for stakeholders as to what may and may not be feasible with regards to the allocation of time and company money towards activities focused solely on improving the experience of users. Despite having plenty of experience in dealing with such tradeoffs in an organizational setting, Abigail expressed concern

for those within her current cohort who had previously been subjected to very little (if any) work in a resource-conscious work environment, with only relatively constraint-less class projects to go off of. Abigail went on to state that such individuals had likely

*“never been told no in their lives, and so that puts another wrench in things [...] and so I have to sometimes be like, look, people don't just have money for this”, before speculating that such an empathy might be hard to find without that experience in an organizational setting: “thinking about like that part of like design can be hard, you know, it's hard to teach that”.*

Discussing her time working with a colleague who seemed to be lacking in such empathy for a misalignment in stakeholder's expectations for resources and their own, Elizabeth noted that said colleague had some work to do in *“understanding the client relationships”*, when trying to encourage a client in a consultancy setting to sanction an activity they deemed unworthy and stating their preferred alternative, with her colleague allegedly being quick to defensively state something along the lines of *“no, I don't want to do that”*. Instead, Elizabeth encouraged those in such situations to have empathy with stakeholders in order to build a dialogue which will hopefully result in either a shift in mindset or sanctioning of activities providing value to a project from a UX-perspective, referring to such rewards as *“the payoff in the end”*.

#### 4.6 Ethical Fulfillment

Ethical Fulfillment discusses the adherence to or deviation from ethical responsibilities felt by an individual, as either a practitioner or person, in relation to their work.

##### 4.6.1 Awareness and Judgement of Potential Ramifications

Reflecting upon their work in professional practice, a number of individuals discussed their own sense of responsibility in gaining as much information as possible about a problem space, and potential ramifications of potential decisions, before evaluating how they might play out against their own ethical principles. Abigail spoke about how in any project, she ensures that she has done all that can *“as far as like understanding all the other factors, not just within the system and how the system looked before and after and the AB tests and you know, well, what else has happened?”*, to allow for as much of an understanding of the contextual and historical

factors at play prior to conducting any substantial research with human-subjects. Abigail addressed the fact that, while however unlikely it might be that stakeholders would take seriously any of the potentially negative dimensions raised in her work, she felt it to be her ethical obligation to at least communicate those to the people who would make the final decisions on whether or not to take them in to account. Discussing the relaying of research findings to such stakeholders, Abigail explained

*“in my presentation it's like, it's more, it's not, I'll just add in stuff, which I don't know if they love it, but I think it's important. Um, you know, before I'll give that, I know before I interview all these people, how many people had been laid off. And so that's like, oh, start with that. And I'll be like, and so that's what, you know, these people are feeling this, this, this, this, this, before we even get into the system. And I'm then I'm saying, okay, so just know that and like, I'm sure you already do know that, but those feelings are still very strong here. Okay. And so then from a system perspective, here's what I can tell you based on our research, but also like, it's like kind of twofold. Like everything I presented was like, I added that extra layer. Um, which I feel like as a new researcher is your responsibility when you uncover something else that's important, you need to share that. Um, but yeah, it's like, well, sometimes I can't do anything about it. I'm just telling someone else to do something”.*

Sarah, discussing her time as a UX intern with a company providing digital solutions to improve efficiency in warehouse environments brought up the distrust shown towards her and UX by the workers whose day-to-day jobs would be impacted by the technology. In Sarah's words:

*“sometimes people didn't like the machines, like, sometimes machines, like one of the jobs that they had would be to drive these carts of equipment from one end to the warehouse and then take the empty carts back. And some people really liked just driving around all day. Like that was just something they enjoyed. And when they found out the robots were taking that job and they were forced to go do high value work or work that required more focus. They*



*weren't really a fan of that because you didn't really have the opportunity to like goof off and do whatever you wanted”.*

However, Sarah’s comments about the eventual consequences of the work being that “*it gives people the opportunity to do higher value work and not have to like do that*”, exemplify an occasion when (depending upon perspective), UX work that brings about certain negative impacts to the user’s emotions, don’t necessarily compromise the practitioner’s feeling of responsibility in doing what’s best for the user.

#### 4.6.2 Assessing the Future Impacts of Work

Charlotte brought up an interesting point as to how the clients taken on by a practitioner’s company, and as a result the way in which their work is used and impacts the world, might bring about ethical conflicts for an individual which are out of their control (besides potentially leaving their role). During her internship, she had observed some tension between a number of the colleagues and the board of the company when the possibility of the U.S. Air Force being taken on as a client came about. Charlotte described the tensions as

*“more a conversation about ethics and, um, some people were like, I don't want to work with the air force because I don't believe what the military is doing this right. Uh, and um, the other people were saying, you know, I don't necessarily agree, but the people I work with have been really great people and I respect that and it was just kind of like an ongoing conversation, didn't have the full details, so I felt like I couldn't make a judgment on it because I could see both perspectives. Like, um, it's especially with the idea of like you creating work, um, and you don't know how it's going to be used in the future in a consulting role. Um, I think that's super important”.*

Sam’s internship saw him temporarily practicing within a company who, even before accepting role, was aware of the organization’s less than perfect reputation, having been “*consistently voted as one of the most hated companies in the United States. And they have, they have some of the worst business practices. They try to screw people out of money all the time*”. Envisioning what his time within the company might be like based upon his perception of them Sam admitted “*when I came in I was kind of biased. I was like, man, this company’s probably*

*going to be like, you know, you see like the dark UX trends and things along those lines. I was kind of expecting to see some of that or maybe being told to implement it myself*". Interestingly, Sam brought up the self reflection that allowed him to alleviate some of the more ethically-natured concerns he might have had prior to his time in the role:

*"So it comes down to, you know, if I'm in that position, do I feel, you know, do I feel that better knowing that someone like myself who would try to take some kind of responsibility is there rather than someone that would just try to manipulate it and benefit more from it?"*

Fortunately, throughout his internship and at least within his team and work, Sam confirmed that *"there was nothing like that in my experience"*.

#### 4.6.3 Not Pushing Personal Values on to Users

While not a commonly raised issue, Charlotte also discussed the dilemma she has faced in the past as to the complications ethically of often subconsciously applying one's own attitudes and values in to a design, and as a result, shaping the interactions and impacting the lives of users to reflect those personal beliefs. One such issue had been raised during an academic project centered around generally improving the health of users, with Charlotte bringing up the trouble her team faced with *"the way we were pushing healthy as like a mentality and how designs shouldn't like force the designer's values on the users, and ways to accommodate for that"*.

### 4.7 Fighting for the User

Fighting for the User refers to the belief in or activity of arguing against decisions by stakeholders, colleagues etc. which could potentially bring about change that would be against the best interests of the users, according to the individual's belief.

#### 4.7.1 Judging Whether to Push for Decisions Based on User Impact

While looking out for the user's best interest is an inherent responsibility that all UX practitioners will feel (the degree of which will depend case by case), the contextual factors at play in each situation within professional practice that affect how, if at all, a practitioner might go about fighting for what they believe to be best for the user, are far more complex. As

summarized by Sam, and particularly so in a corporate environment when liaising with stakeholders who hold more power than the practitioner: *“how do you balance all of that and when can you push, when should you not push?”* Elizabeth seemed to have a clearer understanding of how she balances such factors to argue for the user in her own role, explaining that *“I think when you figure out who is it impacting at the end of the day, like is it impacting my time by a few hours or is it impacting the user's experience? Um, and I think that's when I throw the fit”*.

Rosie discussed some of the particular factors in her own role that had led to previous attempts to argue for what she felt to be the right thing to do for the user being turned down by the decision makers, as it were. A lot of issues, she said

*“come down to like development effort and so I can sit here and preach to you all day long, that like this is the best option. Like they're going to understand this, this is going to flow the best, but at the end of the day if they're like, that's going to take us three times longer, I don't have a rebuttal for that. And so I guess that's, that's the biggest thing we run into right now is like the development effort or like the performance of the site. So like we work heavily with like a lot of of big data for hospitals and so if I want to load in all of these things so that someone can understand something and they're like, well, from a performance standpoint, like that's going to crash every time. Like, I don't know what I can say to be like, okay, well don't let it do that. Um, so I get situations like that frequently”*.

While such constraints would understandably suppress a practitioner's belief in being able to change the mind of those pushing against their advocations, Rosie happily explained a more recent situation where she simply would not take no for the answer, due to the positive impact she knew the change would have on the user if implemented:

*“I encountered an issue with like permissioning, like this is how I want these permissions to get set up so that everything will work and flow and make sense. And they're like, I don't understand what you're saying. Like this makes no sense to me. I literally like drew a map like three different ways until they understood and they were like, okay, you're right. Like it took me seven*

*meetings for them to get this, and I was like, no, you're like, I'm going to win this one. This is the one I'm going to win. So sometimes I like really put a lot of effort in when I know it's going to make a huge difference. Um, and then I know I can, I can win my case, but that doesn't always happen”.*

#### 4.7.2 Using Empathetic Language and Framing to Sway Decisions

While empathy is commonly expected within UX to play the role of helping practitioners to understand the perspectives, problems, goals, needs of users, a number of individuals discussed how they had learnt to empathize with those they were in a disagreement with, in order to frame their arguments in a way that would make a more compelling case and potentially convince the other actor/s to see their way of thinking and cooperate. Joseph explained how, depending on what seem to be the key motivations of his clients in a research-focused consultancy role,

*“the way that my research is communicated throughout the process would be slightly tailored to the person who's listening. Um, so whether it's, you know, this is the user journey, um, or it's, this is how much time people are saving with this different design. Um, so I guess the, the way that I communicate the actual findings might be different. But I think the, I mean the methods won't change, the way that we approach users won't change, our perspective probably won't change. It will still be user centered and user first”.*

What certainly wasn't a common problem encountered by those interviewed, was a resistance from users to having those working in UX help to improve the systems with which they interact. However, Sarah's work involved researching ways to improve solutions seeking to improve efficiency within warehouses, so in her words:

*“there would be resistance when I'd go like outside of the company to interview like people working in the factories or working in those distribution centers because not only do they not like talking to people [from the company] for the most part because of like the previous things I mentioned before, like the fear of the jobs and stuff. That's one thing when they were talking to a UX person, it was just like another term that they didn't understand and they were*

*like, great, another person to talk to me and tell me that my job, like I'm not doing my job well enough that a robot has to do it for me”.*

To overcome this, Sarah would

*“talk to them, I'd be very clear to them that like, I know you guys are the primary users of this machine and I want to make this machine as easy to use and like the best experience for you so that even though you're forced to use it and I know you hate using it, I, I don't want you to make you hate using this machine while you're using it. If that makes sense. It's just like we can't control the reasons why you're assigned to work on this, but I can at least make your experience a manageable one”.*

#### 4.7.3 Opportunities to Lay Seeds for Cultural Shifts in Organization

While times requiring the arguing for a user's best interests were predominantly geared towards bringing about a situational change in mind for those in the decision making role above a practitioner, such as a project manager, some individuals saw them as opportunities, or perhaps building blocks upon reflection, where they were able to lay the seeds for a cultural shift at their respectful organizations towards a more user-centered mindset throughout. Joseph acknowledged that, as a researcher, and within the context of the company he was referring to, it was his responsibility to be *“the biggest advocate for the users because engineering, even design may not be as in the weeds as a researcher might be”*.

Sarah spoke with dissatisfaction as to her company's attitude to the potential for improving technology used by employees who would leave their role quickly after joining, due to the fact that, as Sarah put it: *“the job sucks”*. As a result of the sharp continual turnover in employees, and in Sarah's opinion, the company

*“view their users as like expendable or like, replaceable and they don't really care about the system that they're designing for them. It's like it's a really bad job and people don't work there for awhile and they were like, well why are we bothering redesigning this interface if people aren't even going to be using it for a while?”*

Sarah used the opportunity to take a baby step in changing the mindset of her employer, but framed in the mean time as a possibility for the company to invest in improving employee efficiency:

*“I'm like, it doesn't matter if they're going to be using it for a while. Like if they don't know how to use it, they don't know how to use it and your productivity goes down and like it's just just kind of like it was about like aligning people's priorities to like keep in mind being mindful of these people”.*

#### 4.8 “Impact” Seeking

“Impact” Seeking refers to the intention to or previous experience in purposefully seeking out opportunities in practice allowing for one to contribute to self-perceived impactful work.

##### 4.8.1 Searching for “Impactful” Roles

While most of the individuals interviewed who wished to move in to self-acclaimed “impactful” roles, such as designing for societal betterment, appeared to adopt such aspirations as a result of their academic training and reflection upon their time in practice, Sam discussed how the wish to bring about positive changes to the lives of users on a level of core human needs was the reason for his transition in to his current graduate program. Reflecting upon his time working as behavioral change specialist after completing his undergraduate degree, Sam noted that his work had him conducting “20 to 24 client interviews per day” and continually stumbling across a common problem: *“there's a lot of barriers for people's success when it comes to a behavioral change and you know, it got to one of those things where I realized, you know, okay, is it actually solving the people's problems? Probably not”*. What was perceived to be an ineffective method of temporarily treating or managing the issues of clients lead to the Sam starting to explore the possibility of *“instead of just treating the symptom, how can I solve the problem?”* It was at this point that Sam sought out further education in a user-centered discipline, thinking about ways that he might have been able to bring about *“tangible success, in their actual behavior”* to the clients in the position he had vacated.

Kim pointed out the difference in the more capitalist nature of the work carried out by her present company, and the more societally-driven aims for the company she wished to create and

work within in the future. Having recently completed a temporary work period in the digital civics space, Kim referred back to that work, stating

*“I want to do more of that and that's definitely like a kind of direction that I want to go into, working for a big corporate company is not really my thing. Um, I mean as much as I'm having fun here and, and talking about all this stuff, I just, I dunno, I think we can cut to the bullshit and just help each other out, you know what I mean?”*

When asked about what drives her in a career within UX, Kim went on to tie the amount of self-perceived impact brought about through her work directly to her own job satisfaction, noting

*“I think it's a lot about purpose and doing things. I mean, the way I think about it is like you work eight hours every day and I want to do something that I actually want to go into the office for, which to me is like impacting people, not in a website standpoint. Like, you know, making people ride the bus better. Like it's so simple, but it sounds like super intriguing and fun and these are things that people use every day to like live or go places. So I feel like I want to get into that space to help the everyday things”.*

It seemed that Kim already had one eye firmly on this future vision of managing a company striving to better the lives of citizens, away from the existing climate of corporate work and everything that comes with it, with her own admission *“what I'm doing right now is fun and I'm enjoying it and I still find value in it, so I'm okay with it. But once that goes down, I'm out”*.

Sarah too wished to make a difference on an inherently human level, but alluded to the idea that for her, the degree of value brought about through work did not hold true to everybody, dependent on their person beliefs and interest. Reflecting on her time working on software used within the military, Sarah stated that while she understood that there was *“value to that and obviously like everybody loves the troops”*, she

*“just did not get any enjoyment out of it [...] I just felt like I wasn't doing anything of value to people. Like I couldn't talk about my work with my friends. I couldn't talk about it with my family and I just wanted to do something that*

*could like have like a demonstrated effect on like people and like do something positive [...] I wanted to do something better. And that's why I like sought out grad school”.*

Abigail discussed what she felt to be “*something that's shifting in design culture in general*” where those entering the field or the academic discipline from the “*Gen Z, millennial generation*” were more likely than those before them to seek out opportunities for work in organizations that “*align with our values and we get that choice now, we have that choice*”, putting that shift down to a number of factors, including the rising student debt facing college students and that they may wish to seek out roles where they can bring the satisfaction of impactful work to soften the emotional effects of those struggles.

Somewhat contrastingly to many of the other cases interviewed, particularly that of Kim, Rosie discussed what she believed to be a lack of passion in her part in comparison to those dedicating themselves to operating within the civics space, and while she was interested in that type of work, acknowledged a likely reduced pool of resources that comes with working in that space. Rosie stated that

*“right now, like the person I am today, I don't think I have anything that I'm that passionate about and anything that I have like that drive to solve. Um, but I, it definitely makes me have a much greater admiration for people that do work towards those problems because I know that it takes a lot more. And, that, serving a citizen over a user is a huge undertaking. Um, just because like you might not necessarily have the budget that that a health care company does or the resources that an enterprise level institution does. And so it's just a whole different type of commitment”.*

#### 4.8.2 Finding Space for Impact in Any Role

Despite some roles not offering opportunities to directly bring about what some might perceive to be more traditional forms of impact, such as designing for societal betterment, some individuals alluded to their experience of and belief in navigating whichever role they might be placed in to bring about what they perceive to be fulfilling and tangible, positive impact to the users affected by their work. Joseph, reflected upon his time working in a predominantly human-



factors and ergonomic natured role tasked with reducing work-related injuries (and resultant company expense) in a manufacturing and assembly environment to raise such an experience. After the self-described “*pretty demoralizing*” experience of having what he felt to be a change which if implemented could bring about positive change to the day-to-day lives of employees due to company constraints, Joseph “*questioned if any of my recommendations at the end of this internship would be valued*”, before seeking the advice of his manager on understanding “*what work can I do that will be valuable for you know the employees, but also be listened to, um, and have any sort of impact*”. Based upon the advice of his manager, Joseph began to come across problems where he could

*“not be under the table about it, but I would try and adjust worker schedules or find them better tools without going through the right channels, it probably wasn't illegal or anything, but it wasn't part of my job responsibilities. So if somebody says like, you know, this tool's wearing down, it's a lot of stress vibration on my wrist, I'll try and find the right solution because eventually I knew it would take way too long to solve the problem going through the right channels”.*

Joseph referred to these types of situations as “*low level low hanging fruit solutions*”, which when tackled allowed him to “*feel like I was having more of an impact, whether it was short term or long term, but I guess there are always easy fixes and hard fixes, and so I tried to focus on the easy ones*”.

While speaking somewhat disparagingly as to the self-perceived relative lack of impact she felt was brought about through her work on products catering to the healthcare industry, in comparison to the potential when working on solutions directly interacted with by physicians and the like, Rosie brushed upon a recent experience that made her pivot and believe otherwise. The system referred to in the discussion required the user to continually input their name, and complete the same three manual click-based interactions, for each step, numerous times throughout the day, with changes up until that point being prohibited due to legalities. However, upon conceptualizing a “*super hacky way for them to not ever have to type in their name*”, Rosie was able to get the green light from stakeholders to have the change implemented, and was “*very excited to see and hear from a group of people about how it impacted their day*”. Discussing this

impact to the users in question, who Rosie identified as “*working in like a staffing office in a hospital or are a secretary to someone*”, she was able to address the real, eventual impact made to those outside of the immediate use of the product, stating

*“I feel like in any way that we can make like their lives easier, whether it's making, signing off on something really easy or just just trying to improve like one small task, like that should have an impact, to like free up the time of physicians, I think that's the most important thing because like if they have more free time, then they can serve more people”.*

#### 4.8.3 Possibility for Large Impact through Simple Solutions

The potential for bringing about large-scale impact through the implementation of relatively small but effective solutions in any role was driven home during a discussion with Daniel regarding his work at a non-profit organization providing part-time care to children care in an impoverished area abroad. Daniel described the organization as

*“similar to like a YMCA here, just a bunch of different little centers, with about 20 to 30 kids each that they serve. And so it's an after school program. You know, they help them with homework, feed the kids because they come from underprivileged families with, with not a lot of ways of getting food or educational help”.*

Tasked with on-the-ground explorative research to identify issues that could be tackled within the centers, Daniel discussed how through observing the organization’s teachers and administrators, he discovered deficiencies with how the staff within each center were using Google Drive to track the educational performance of the children. In his words, observing the center’s activities allowed him to learn

*“about how the information moves throughout the organization. So one gap in the information we found was that, um, the teachers were giving the students like extra assignments to help them learn. And so all those papers were collected and graded by, uh, these two people that manage the Google drive, and so they input the scores into the Google Drive, but then they'd just, just*

*stay there and never got back out to the teachers. So the teachers didn't know what kids were struggling and in which areas. Um, and so by identifying, you know, there's like a, a gap in the information flow”.*

Realizing that the problem at hand did not require a resource-intensive overhaul of the existing system, Daniel was

*“able to suggest that they start building reports based on the data, and taught them how to quickly create functions in Google Drive to quickly make reports basically for each student, that could go back out to the teachers so that the teachers could be more informed about their own, their own students, right, because otherwise they're just kind of teaching without knowing which students are struggling”.*

Such an implementation and subsequent impact highlights the potential value in tackling what might seem at first like a challenging problem requiring extensive time and resources to tackle, from a user-centered perspective.

#### 4.9 UX Advocacy and Evangelism

UX Advocacy and Evangelism refers to an individual’s commitment to bringing about long term education to others (in professional or personal contexts) as to the values and capabilities of UX and/or design thinking in general.

##### 4.9.1 Education on User-Centered Thinking within an Organization

The vast majority of participants spoke of their wish (or self-held responsibility in some cases) to bring about a cultural shift either within their current and/or future places of work, or an external client, towards a company-wide adoption of user-centered thinking and practices. Kim discussed her decision to accept a full-time offer at a company with whom she had interned previously, based partly upon the promise that she would be put in to a position allowing her to *“network with a bunch of people and talk about UCD and its importance so that [company name] as a whole could be better”*. Reflecting upon the heightened level of responsibility in her new role, in comparison to that held within her internship, Kim spoke of her pride at *“doing something valuable, I’m doing something purposeful, I’m not just like designing.”*

For Charlotte, her experience working as a UX intern at an enterprise software company the previous summer offered a glimpse as to how the high-level strategy, in both business and design, can shape what lies ahead for an organization *“one year, five years down the road”*. Looking ahead to her upcoming summer internship at a larger-scale company, Charlotte clearly laid out her intentions to uphold and strengthen where the possible the existing user-centered mindset in her soon-to-be workplace, stating her hopes of using the role

*“to advocate for UX, like it is a design culture, but it's still kind of like a very big company and there's a lot of bureaucracy so it takes time for that, buy-in to occur, especially in, um, kind of with the more enterprise heavy spaces”*.

After struggling with misalignments in the value placed in user-centered design between herself and a number of previous workplaces, Abigail was in no doubt as to how practitioner's should go about educating those around them as to the importance of the approach and mindset being adopted company-wide, stating *“very clearly articulating your purpose and teaching that to whoever your audience is, is important for furthering the discipline. Um, so that's one of my goals is to clearly communicate why what I'm doing is important, how I value the people”*. Abigail went on to discuss attempts by those around or above her (hierarchically) to suppress such advocations, with comments such as *“that's not your job”*, pushing back against such reservations by explaining *“yes it is, actually. I mean it's like we all work better together when we all understand what other people do and why it's valuable and that's how you build trust throughout a company is you educate everybody”*. To Abigail, it certainly appears that merely sticking to her formal duties tied to her position is not enough, and that educating from within is simply a responsibility she feels as a UX practitioner. In her words, *“I have a lot of goals other than just like a design when I do my work”*.

#### 4.9.2 Increasing UX Influence in Company through Demonstrating Company-Wide Value

Discussing the growing influence of UX within her own organization, Kim discussed some of the hierarchical changes made by the company to ensure that UX and its value are taken more seriously by those within.

*“They need a, a UX person at the the chief executive table. Yeah it's weird because we have a chief design officer but he's like four levels down from the*

*CEO, which doesn't make any sense. Yeah. Just think about that. Like they're trying, so I talked to the guy actually, um, cause he said that they changed his title so that we could have more credibility in the organization, but they're like four levels down from the CEO... People listen and there's a chief in the, in the beginning, which means people assume that that person can make changes and so when that person's talking you should probably listen kind of thing. I think that's very like psychological”.*

The difficulty in effectively implementing UX in to an existing (and large-in-scale) organization and allowing it to have a valuable influence on affairs was alluded to by Joseph, discussing the way that the practice was built in to the manufacturing company he had previously interned at. “[It] comes back to the fact that UX and user centered stuff wasn't built into the company. It's more so an afterthought and then they realize this is costing a lot of money, so let's try and implement it now. Which is still better than nothing”. Joseph stated that the work (ordered to solve problems leading to injuries and increased costs) was

*“very reactive and not proactive. So a lot of the issues were already happening. People were injured, people were, they weren't retaining employees, they had to improve a lot of systems that could have been prevented beforehand”*

possibly alluding to the notion that were the company built with such user-centered practices in mind, such issues might not have come to the fore in the first place.

Sarah’s story presented a rare case amongst the individuals interviewed where her time interning in a UX role at a company creating warehouse-based solutions, happened to be that company’s first time introducing any sort of user-centered practice in to their organization. Having only minored in HCI during her recently completed undergraduate degree up until that point, she referenced that while the freedom allowed by the fact that *“the company didn't really have any expectations because they had never had a UX person before and they didn't know what they were supposed to do”*, she felt a great deal of insecurity at moving in to the role as she didn’t perceive herself to be *“adequately prepared enough”* to deal with the pressure to *“do things the right way so that they would like keep working with UX in the future”*. Elaborating on

this pressure to effectively demonstrate and communicate the value of UX so that it would play an influential role in the company and prove worthy of investment moving forward, Sarah stated

*“my job there was not only as a UX intern, but, like a UX pilot or a UX demo because how my experience went would be like determining how much they would choose to invest in UX in the future. And I didn't necessarily realize that at first, but after some time I was like like, okay, this is, I have like a lot of responsibility on me to do this right or do this in a way that doesn't off put them from wanting to do UX forever”.*

Wanting to ensure this was achieved, Sarah took it upon herself to not only focus on delivering within the project assigned to her, but also educating and showing that UX had “demonstrable value for everybody across the company”, explaining to those who she came in to contact with inside the organization that

*“if you have a good UX, it can improve your experience with customers. So this would be great for people on the client side facing customers, this'd be great for engineers because it can help you detect bugs and like see where people are failing more and figure out ways to improve”.*

#### 4.9.3 Enhancing Knowledge of UX in General

When asked for their reasons participating in the study, a number of participants discussed their willingness to help in advancing knowledge and awareness of the field and the capabilities of adopting its principles in any way they could. Abigail passionate spoke as to her personal feelings on the topic:

*“I care a lot about what I do because I am teaching about it and I'm very passionate about creating a better, um, understanding of the discipline. And I want people who are passionate about furthering it in a positive way to get what they need”.*

Sarah echoed this view and willingness to aid however possible, stating

*“I'm definitely for sharing information with people and I feel like UX as a field is so it's still so like up and coming and there needs to be like a greater holistic*

*understanding of it for everybody and if I could contribute to that at all through research, through like participation in these sort of things, these interviews then by all means because I want to educate people and I want to help with that, because it's so powerful. It's so great. Like why aren't more people doing it?"*

Building upon her reasons for wanting to participate, Sarah acknowledged the key difference between a company who simply means best for the user, and one who fully takes on and adopts the value of UX and its principles, expressing that her previous company who, although she loved her time interning with, were

*"looking for like the quickest solution, the easiest solutions so they can move on to the next ticket and like I totally understand where they're coming from. But like there's, there's other people that you have to keep in mind too. And that was, I mean even the best people with the best intentions, like forget that. And that's totally, that's why we have to have more exposure to UX and why people need to know more about it and be more empathetic".*

## CHAPTER 5. DISCUSSION

The varying dimensions relating to the design philosophies of the individuals interviewed, emanating from reflection upon their experience in academia and professional practice, portray a great deal of conceptions held by these individuals with regards to how their more situational judgements in practice are currently and have been influence in the past, in addition to their more overarching responsibilities felt as practitioners. The themes presented in this work (and the stories from the accounts from which they were based) raise issues relating to pedagogy, practice, and the space between the two attempted to be bridged through a studio model of education, which warrant further discussion.

### 5.1 Tensions Encountered in Professional Practice

Leveraging and adapting the schema provided through the work of Gray, Toombs, and Gross (2015) in describing the flow of competence in practice, the dimensions of design philosophy alluded to in the interviews could be categorized as having undergone one of four tensions, in each individual's professional practice. Each tension is characterized by whether or not an aspect of the design philosophy of the individual was required to be activated, before being used to judge and contest a decision or state of play, and the outcome of that contest (or lack of). The following discussion of these tensions refers to dimensions of one's design philosophy as "espoused values".

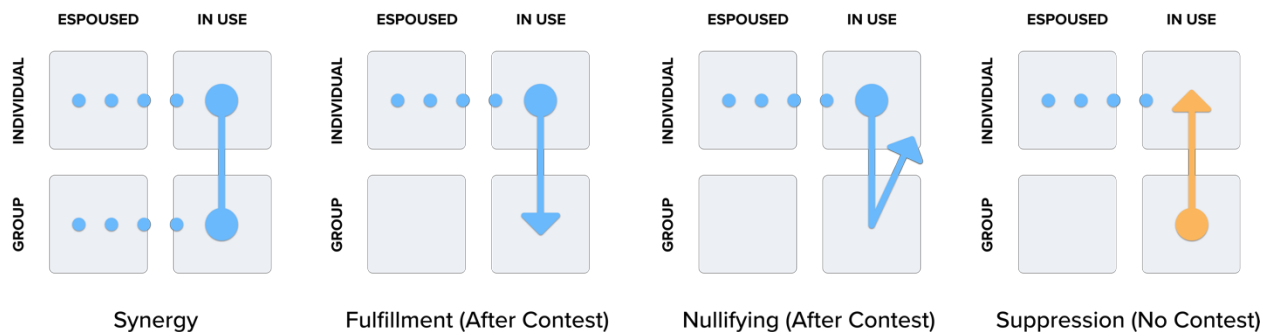


Figure 1 Tensions Encountered



### 5.1.1 Synergy

Synergy refers to a case where the espoused value of the individual is shared and acted upon the collective group, with no need for contest by the individual.

After spending much of his time in professional practice so far working in environments that appeared to see UX as a luxury which required him to fight to demonstrate and educate on the full benefits of, Joseph looked back fondly upon his summer internship at a “*large tech company*” where, in his words “*UX is built into the company, or at least was at a certain point, it's really clear that the entire team has bought into user centered design, um, whether they're engineers or marketing folks*”. This foundation appeared to eradicate the extra labor required in Joseph’s role where he would need to challenge those who appeared to place other business matters over the user’s needs at any opportunity, with Joseph stating that “*there wasn't any need for me to convince people that this was a valuable finding. It was always, what is your finding and what can we do about it?*”

Sarah’s unique case of being placed in an internship role which happened to be her respective company’s first attempt to build UX in to their organizational hierarchy and day-to-day practices created a number of challenges that she faced in her work. However, one of those challenges was certainly not the need to educate company stakeholders on the value of UX, her research findings or design work, and what it could do for the company, stating that “*there wasn't any resistance to that*”. Sarah believed this to be as a result of the organization’s value placed in

*“investing in future innovations, investing in like new technology and looking at new innovations and not restricting themselves because basically the point of their company is to promote innovation in places where they have previously been met with resistance, which helped my case a lot”.*

While the majority of cases discussing experiences of a synergy in values between in espoused values between the individual and their current and/or existing employers, Abigail’s decision to accept a job offer from her now future employer was quite certainly based upon an acknowledged identification of parity in certain values held. Not only did Abigail bring up what she felt to be a interview process conducted in a manner which she felt recognized her own needs both as a person and as a potential employee, in addition to the company’s obvious intention to

build an organizational culture of equality to all, but she was assured throughout that the way in which she would be allowed to conduct her work would be based on her own training and intuition as a practitioner, rather than orders from the company. In Abigail's words: *"they weren't like, we're going to tell you what to do. It was like, we're ready to let you just go. And we trust you"*.

### 5.1.2 Fulfillment (After Contest)

Fulfillment refers to a situation where the espoused individual is acted upon by the collective group, but only after the individual successfully argues their case for a particular action or shift to take place based upon their beliefs.

After completing an internship at large technology company in the summer between the sophomore and junior years of his academic program, Aaron returned to work for a second summer the next year, and reflected upon the evident changes in his ability to push through decisions that he felt right, in comparison to that first summer where a number of situations arose where either his advocations fell on deaf ears, or he chose to not challenge what he felt to be an incorrect decision. As Aaron explained,

*"I guess at that time I had been in college like a whole other year, so I guess I was more confident in my own communication skills. Um, so really just, I was able to push back on ideas that I didn't think were great. Um, and explain those in a more productive way other than like, that's not good, but provide suggestions on ways we can still do the sort of thing but in a different way, and that helped out a lot"*.

Charlotte's story of her own internship experience raised a difference of value placed in lower-fidelity prototyping between her and others within the organization in question. When presenting concepts to stakeholders, she reminisced that while *"they asked for a higher fidelity"*, Charlotte and her fellow intern felt that the context of the situation did not necessarily call for a more-polished higher-fidelity prototype, restricting the potential value in discussion that might come about from a lower-fidelity prototype. Based on this opinion, Charlotte and her team were successful in *"pushing back, so it didn't end up really compromising it too much"*.

Working as a project lead in a consultancy engagement with an external client, Elizabeth exposed some of the difficulties in convincing stakeholders that their assumptions about what users want or need aren't always justified, in addition to educating on the value of explorative research to validate or undermine such conceptions. As Elizabeth explained:

*“there were a ton of like come to Jesus moments where, um, they were shoving the feature functionality list down our throat and every time a new person from the client came in, we had to reintroduce, have a meeting, um, and kind of say, why we weren't doing it. When we did the first round of interviews and they were saying the things they wanted. Some of it was part of the list, some of it wasn't. Yeah. And of course they were latching onto what was on the list and saying, this is a waste of our time and money. We've brought our clients in for you guys, why, why are you wasting their time hearing this? And, um, we really had to explain like, your list is great and it helped us create a session guide, but we need to hear it from them and we need to hear about how they're thinking about it”.*

Fortunately, the client in question eventually came to an understanding and acceptance of Elizabeth and her team's advocations.

Daniel's experience working with an external client in the banking domain raised some similarities with regards to the successful undermining and rerouting of a client's assumptions. While the client were initially looking to build an elaborate tool which would allow their customers to organize *“spending in to categories, and set budgets and do all these things”*, Daniel and his team's research found identified an issue in the fact that

*“lots of people have debt and credit card debt, student loan debt, car payments, just all different sorts of debt. Um, and so they really wanted to help with paying off their debt, basically. Um, they didn't really care about some of the tools that were more geared towards saving money [...], you could set like an emergency fund, like \$5,000, just to have as an emergency fund or you can save it for a family vacation, uh, you know, this tool to help you save, but people don't care about that, they're drowning in debt, right?”*

Upon this key information coming to light, the team were able to bring about a realignment in the client's priorities of who they were seeking to help moving forward, and began looking at the project from the perspective of putting

*“debt as a goal, because they were thinking of savings goals as the only type of goals and for some reason they didn't think that debt should be a goal. So they're thinking about making a debt goal tool too so the customers can see the debt going down instead of their savings goal that they can see, you know, like up. So yeah, that was cool to, to, to help these bankers understand that you know customers aren't as in a good financial situation as they are”.*

Kim's story of a previous internship raised an issue where, although those within the organization were aware of the importance and benefits of adopting and acting upon a user-centered mindset, *“they don't act upon it because it's like what we have is already okay or it does have all the features, so if they just read the documentation, it's okay”*. Identifying the potential for building upon that foundational understanding which employees within many other companies often don't possess in the first place without the advocacy of others within, Kim set about further enforcing the importance of possessing and acting upon a user-centered mindset. In Kim's words, she felt that she accomplished this in some part by *“inviting them to these testing sessions and them actually hearing like users being frustrated, then somehow like 100% of the time, well 99% of the time it always clicks to them like, oh, but this person said...”*

### 5.1.3 Nullifying (After Contest)

Nullifying refers to a situation where the espoused value of the individual is constrained and not acted upon by the group, after the individual pleads their case for an alternative action to have taken place based upon their beliefs.

A commonly occurring phenomena was the dismissal by stakeholders of an individual's recommendation, based upon its perceived cost of resources (time or money) if implemented, bringing about a direct feeling of missed opportunity for bringing about a positive change for the user as a result. One such case was discussed by Rosie, who in her existing role, had so far encountered a surprising deal of *“pressure to deliver the product. And so that pressure is coming*

from like an executive level and when that happens, they're rushing to do everything". As a result of this, Rosie felt that the stakeholders with whom she provides recommendations to

*"take a lot of my work with like a grain of salt because they're like, oh, we could do that but we need to get it done, so we're going to do it this way. Um, so basically we offer a prescription of like, this is how you should do it, but that doesn't mean that's how it's going to be implemented".*

Charlotte's discussion of her past work with a previous employer raised a similar encounter with such an issue, where her advocations for the company to conduct effective user research within their projects was met with dismissal from those making the decisions. In her words:

*"it was a constant balancing act. Like definitely individual people were very in, they were like, yes that would be great if we could do that. But as a company that would take too much time, too much money, too many resources".*

Charlotte later went on to confirm that this lack of value placed in research by the company was a large factor in her decision to leave. In another case of the need to conduct research to better understand user's needs and problems being downplayed by stakeholders, Aaron brought up how his lack of authority in the workplace as a result of his relative inexperience contributed to his lack of confidence and conviction in arguing his case. Reflecting upon a particular incident, Aaron explained that

*"I always would say like, well, like we should consult with them to ensure that's not an assumption we're making or things like that. Um, but as like a freshman intern, there's only so much I could do. They weren't like rude or anything about it. Just kind of not, that's not the direction we're going to go in or something like that".*

Daniel lamented what he felt to be a flaw within his education, which when he moved in to practice became aware of the *"business gap I had between industry and school"*. When asked how this perceived gap affected his success or failure in having decisions go the way of his advocations, Daniel elaborated

*“just all the lingo and how much money influences decisions and you know, the business rationale as well, I wasn't aware of how much of that kind of complicates the design thinking process. Um, just the, I guess some of the politics that gets involved. Um, like making sure all of our stakeholders are in agreement upfront on what we're about to even do in a project is sometimes really difficult cause they all have their own agendas that we don't really know about. Um, and we're just coming in trying to do what's best for the users, right? And hopefully tie it into what's best for them. Um, you know, but they have their own agenda sometimes, so. Um, yeah, it just makes things complicated when you're dealing with a lot of business people with egos and hidden agendas”.*

Joseph, reflecting upon his time working as an intern tasked with improving employee safety (and as a result, reducing injury-related costs to the employer) in a manufacturing environment, discussed the impacts of his first experience in the role of having what he felt to be a worthwhile recommendation rejected by a superior. Referring to an idea that he had taken and adapted from a competitor, Joseph explained that

*“[the competitor] was doing a very different safety program and it wasn't perfect, but they did have a much better management of rotation. And so our time rotation was how the, the amount of time people were spending on different tasks. So I recommended bits and pieces of that”.*

However, the recommendation was met with hesitancy due to the fact that

*“because leadership was so traditional and used to doing a certain way, um, it wasn't shut shut, shut down immediately, but, um, it was sort of understood that nothing would probably happen because it didn't, they didn't see the impact or at least the use of switching up the whole process. Um, so I think that was probably the big, the first and biggest recommendation I made that didn't go anywhere”.*

When asked how he felt upon finding that his suggestion was not going to be acted upon, Joseph admitted that

*“because it was the first one that happened, It was pretty demoralizing. I sort of questioned if any of the work I was doing was worth their time and my time. Um, and so I kind of questioned like if any of my recommendations at the end of this internship would be valued”.*

#### 5.1.4 Suppression (No Contest)

Suppression takes place when the espoused value of the individual is not shared by the collective group, and the individual chooses not to contest or interject due to any of a plethora of reasons, such as a contrast in values so large that it might feel like time wasted to object in the context of the situation.

A common case of an individual’s espoused values being suppressed involved the individual working in a setting which did not allow for the conducting of explorative research with actual users, and with no indication given by those within the organization that such an affordance would ever come about in that role. In speaking about his current role, working to provide solutions to ease the pressures on students and instructors in his university in any way possible, Sam noted that

*“it's hard for us to get out and actually talk to our end users. Uh, that can be a little bit difficult. We have representative end users that we interact with, but, but you know, when you deal with that you're only getting very small sample size and it's, you know, probably most likely extremely biased. Um, so until we get to the validated aspect and like trying to validate the design testing and what not, then you're not really getting a very good full picture”.*

However, Sam also respected that it was simply too difficult to get time with the users in the first place, explaining that

*“our users are employees and during the school year, you know, they're busy all the time. So you know, if we wanted to interrupt their work for, you know, trying to test or, you know, conduct interviews it would take away time from the students, and the students are the priority”.*

Sarah had encountered a similar lack of user-facing research opportunities in her previous role, which ended up being a factor in her reason for leaving the role and pursuing further

education in graduate school. In her words, *"there wasn't really a lot of opportunity to explore how users were feeling. I never met a single user of one of our products while I was working on that and that like I had no idea who I was designing for"*. The perceived gap in mindset towards the benefits of UX and how it should be implemented between herself and the company even led to Sarah not believing that it would be worth explaining ideas for research and design activities that she had learnt in her education so far to those within the company, explaining that

*"there were just so many things and I would mention like concepts in class, like we'd be doing like uh, like a design activity at work one day and I'd say oh this is kinda like x, y, z, and they'd be like, oh, I've never heard of that. Like oh, it's this thing we did in class, and I don't know, it was helpful. Nevermind"*.

Working in a consultancy setting, Elizabeth alluded to how the pressure to satisfy and regain clients in order to bring continual revenue to her employer lead to a resistance on her part to push for said clients to sanction certain activities that she felt would bring extra value to the project at hand. In terms of the particular activities and her rationale behind not pushing for their taking place, Elizabeth explained that

*"usually it was like doing another presentation or like doing another workshop with a different part of the business. Um, and the problem with that was usually, okay, well we're already on a tight timeline and now we're throwing in this other workshop where we're going to get feedback. Um, but we understood that the buy-in for future projects was much more important than me working a few hours extra"*.

Joseph, reflecting upon his time working as a consultant researcher to a company creating patient and physician-facing products in the medical industry, alluded to how he struggled to argue against the often rigid, metric-reliant approaches preferred by the client in favor of his own preference for a more qualitative approach to research, placed under the same pressures as Stephanie in trying to build a strong relationship with the client. In his words:

*"there are a lot of times when clients would have products that weren't ready for the market and had clear design issues, but because the performance was high enough and the executives and high stake holders were able to*



*communicate it and spin it in a way that was favorable. Um, I guess as a consultant it's hard to argue back and forth when it's a relationship you're trying to build, but there were probably multiple times when I was, I guess disappointed with how much work could have been done to optimize and improve the experience, but people's priorities were more focused on timelines, um, metrics that they had already come up with, um, getting this out by a certain date, um, and obviously the costs. So if UX wasn't built into the client's practices, it's very unlikely that they would take a step back and be convinced that we need to spend a little bit more money to be more user focused. So I think that was probably the most frustrating”.*

Joseph felt that this mindset held by the client was partly down to the low barrier for entry in the domain, which encouraged companies operating within to concentrate solely on metrics, stating that

*“the FDA requires usability testing before you can be approved. Um, so it was more of like a gateway for people to enter the market, and it's not necessarily, I need to understand if users like this product and can use it, it's more so let's make sure that people can use it and let's just move forward”.*

## 5.2 Value Building Through Reflection upon Pedagogy-Practice Contrasts

All 10 individuals provided substantial evidence of the continued development of a design philosophy throughout their education and experience in professional practice, relating to both their perceived duties as UX practitioners, and more contextual, situated judgments within their practice. Interestingly, many of the more salient acknowledgements of or alluding to one's espoused values appeared to come about during conversations centered around the reflection of the contrasts in one's education, and how those expectations played out in professional practice, within the added constraints that the educational programs represented do not replicate in their own studio project environments. While it is difficult, if not impossible to evaluate the extent of the role played in these educational programs in building this value-sensitivity and understanding of the role that those values play in to the individuals interviewed, it is fair to say that the programs in question certainly provide a foundation (or building upon) of values which are then

shaped further by the individual's personal beliefs and experience in practice, with the differences in values exemplified by the contrasting or atypical cases in this report.

Certain cases involving current students who had returned to an academic environment after spending a period of time working as UX practitioners after graduating from their undergraduate degree, presented instances of dissatisfaction with aspects of their academic training based upon clashes between their education and what they had now come to expect through practice. After working within the constraints of professional practice, and despite the potentially negative tensions placed upon espoused values during such time, these students appeared dismayed at the lack of real-world context or constraints surrounding some of the studio-based work in their academic setting. While some academic studio environments and the client-facing work between them sometimes offered a taste of the constraints that might affect one's work in a professional setting, the cases in question discussed issues in effectively preparing those studying in their program for the adaption needed in an industry setting to successfully enforce their espoused values in practice.

### 5.3 Tensions Contributing Towards Career Pathways

There is a clear connection within the cases discussed in this report, between the tensions that one's espoused values undergo in professional practice (whether positively or negatively felt), and the individual's career-based objectives or decisions when reflecting upon those tensions. However, it is important to note the lack of uniformity and subsequent unpredictability in impacts upon each individual's career pathways when encountering incredibly similar tensions in the same espoused values. For example, while the suppression or nullifying of the espoused values of some individuals at their respective organizations caused them to identify aspects of that organization who they would actively avoid working for/within the future to avoid any repeat of such tensions, others saw such organizations as the ones needing their hope most, and actively sought out future or current opportunities to move in to those environments in order to advocate for and evangelize the importance taking a user-centered approach. This wish by some to immerse themselves and educate within organizational cultures not necessarily aligning with their own philosophies goes somewhat against the potential for a studio model of pedagogy to help students navigate their career pathways towards environment more closely aligning with their conceptions of design, as discussed in the work of Gray (2014) and Brandt et al. (2013).

That is, unless, we take on the view that the studio model in such cases is doing just that, by allowing the individuals to identify the areas in which they wish to educate and evangelize, and moving in to those environments. What is clear though, is that the espoused values of the individuals played a very conscious role in where they see themselves in future roles, and for some, how they came to be in the role they are at today.

## 5.4 Implications

The findings of this study hold implications moving forward for both programs currently or looking to educate in UX/HCI from a design-oriented perspective, and for organizations seeking to employ practitioners educated in such an environment to instill or uphold a user-centered approach to practice in their workplace.

### 5.4.1 For Design-Oriented UX/HCI Pedagogy

The values and tensions highlighted within this study provide a lens through which to view the building of a design character that takes place for a student educated in such a program, through continual reflection of one's espoused value shifts between education and practice (both in the praxis and project-situated realms). However, on the basis of this research, more must be done by such programs to facilitate the shaping of such values through the placement of more-realistic constraints in suitable projects within a studio environment. Hopefully, by creating an environment even remotely replicating some of the tensions that might take place in practice, students can better understand and prepare for how to effectively act upon and have decisions based upon their espoused values swing their way in practice.

### 5.4.2 For Organizations Seeking to Adopt UX in Practice

Those organizations with environments or attitudes towards UX so clearly suppressing or nullifying the espoused values of those interviewed in this study have the lifeline offered by those individuals passionate enough to attempt to educate from within, should they seek to employ practitioners educated in design-oriented programs. However, the consistency of cases discussed involving those looking to move in to organizational environment where the need for educating others on the value of UX was greatly reduced, should be alarming to those companies falling on the less desirable side of that line. While there can be no directly applicable

implications to a company in such position given the contextual factors that will differ wildly at each, as design-oriented programs likely increase in their fostering of value-sensitivity in their students, such companies likely to cause suppression or nullifying of those values risk losing out on large amounts of talented practitioners looking for work that allows for the activation of their values.

## CHAPTER 6. CONCLUSION

This qualitative interview study investigated the espoused values relating to one's praxis and situated responsibility in the design process held by 10 individuals educated within design-oriented UX/HCI programs in the USA, and the tensions that those values are subjected to when activated in professional practice. The 9 values and their dimensions identified in this research provide a lens through which to view the espoused values taken on and shaped by those educated within such programs, aided by continual reflection of the contrasts between their academic training and practice. The 4 types of tensions of design philosophies in practice provide a complimentary lens to the work of Gray, Toombs, and Gross (2015) on the UX flow of competence, through which to view how UX practitioners engage their conceptions for design practice in professional environments.

Moving forward, further research is required to better understand how effectively the studio environment offered in such programs provides a bridge between academia and practice for the shaping and activation of one's values, and what can be done to better bridge the gap between the two to better prepare to understand and prepare for how to effectively act upon and have decisions based upon their philosophies swing their way in practice. Additionally, with value-sensitivity in design-oriented UX/HCI programs likely to increase in its presence, further work should be carried out more directly investigating the impacts of tensions in practice on the career objectives and motivations of students. Future research would benefit from conducting a greater pool of participants from such programs, potentially using the philosophy dimensions and tensions highlighted within this report as a foundation for questioning.

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## APPENDIX A. CURRENT STUDENT INTERVIEW PROTOCOL

**Topic Domain:** HCI & UX education

**Lead-off Question:**

- How did you become interested in pursuing UX or HCI-focused education?

**Back-up Leadoff Question:**

- What made you decide to study UX & HCI?

**Follow-up Questions:**

- How would you describe your time in the program so far?
- Looking back to before the program, do you feel that you've changed as a person or practitioner through doing this course?
- Do you feel like your reasons for wanting to be a practitioner have changed through your education?
- What would you feel have been the most important classes you have taken?
- Why?
- Have there been any memorable class projects you've worked on, whether good or bad?
- Do you feel that any of those projects shaped your aspirations or mindset as a designer?
- What would you say that the program is trying to create out of you? (if needed: specify whether as person or practitioner.)

**Covert Categories:**

- General makeup of HCI/UX program
- Student's interpretation of key learning aspects of their program
- Impact of studio pedagogy on design character
- Impact of program on career aspirations

**Topic Domain:** Experience as a practitioner

**Lead-off Question:**

- What experiences do you have working as a UX practitioner?

**Back-up Leadoff Question:**

- It seems your first UX position was [JOB TITLE @ COMPANY], could you tell me about your time in that role?

**Follow-up Questions:**

- Could you tell me about your time with [company name]?
- Was the work at [company name] what you expected it to be, based upon your academic training in this area?
- (if needed to clarify): Do you think the values in the work aligned in the sense of what you were taught, but then asked to do in practice?
- Do you remember any particular times in that role where your work allowed you to feel like you were creating a really positive change for the user, or other stakeholders?
- How did that make you feel?
- Do you remember any time in that job where you were asked to do something that made you feel comfortable? (if needed to simplify:) perhaps through a disagreement with a manager or fellow team member?
- How did that make you feel?
- Do you feel that those positive or negative experiences impacted how you went about completing your work at that company?
- Or mindset to your work in UX practice moving forward?

**Covert Categories:**

- Flow of competence in practice, espoused vs in-use (individual and company)
- Career aspiration changes as a result of industry experience
- Situations leading to value tensions
- Situations leading to value fulfillment

**Zipper Questions:**

- What about this study made you want to participate?
- Given what you know now through your experience in the program and in industry, what might you change in relation to the program that you're in now?

Thank you so much for your time, that was really interesting. Do you have any questions you'd like to ask me? Or anything of interest that we didn't discuss?

## APPENDIX B. CURRENT PRACTITIONER INTERVIEW PROTOCOL

**Topic Domain:** HCI & UX education

**Lead-off Question:**

- How did you become interested in pursuing UX or HCI-focused education?

**Back-up Leadoff Question:**

- What made you decide to study UX & HCI?

**Follow-up Questions:**

- How would you describe your time in the program (or programs)?
- Looking back to before the program, do you feel that you've changed as a person or practitioner through doing this course?
- Do you feel like your reasons for wanting to be a practitioner have changed through your education?
- What would you feel have been the most important classes you have taken?
- Why?
- Have there been any memorable class projects you've worked on, whether good or bad?
- Do you feel that any of those projects shaped your aspirations or mindset as a designer?
- What would you say that the program tried to create out of you? (if needed: specify whether as person or practitioner.)

**Covert Categories:**

- General makeup of HCI/UX program
- Student's interpretation of key learning aspects of their program
- Impact of studio pedagogy on design character
- Impact of program on career aspirations

**Topic Domain:** Experience as a practitioner

**Lead-off Question:**

- What experiences do you have working as a UX practitioner?

**Back-up Leadoff Question:**

- It seems your first UX position was [JOB TITLE @ COMPANY], could you tell me about your time in that role?

**Follow-up Questions:**

- Could you tell me about your time with [company name]?
- Was the work at [company name] what you expected it to be, based upon your academic training in this area?
- (if needed to clarify): Do you think the values in the work aligned in the sense of what you were taught, but then asked to do in practice?
- Do you remember any particular times in that role where your work allowed you to feel like you were creating a really positive change for the user, or other stakeholders?
- How did that make you feel?
- Do you remember any time in that job where you were asked to do something that made you feel comfortable? (if needed to simplify:) perhaps through a disagreement with a manager or fellow team member?
- How did that make you feel?
- Do you feel that those positive or negative experiences impacted how you went about completing your work at that company?
- Or mindset to your work in UX practice moving forward?
- **Covert Categories:**
- Flow of competence in practice, espoused vs in-use (individual and company)
- Career aspiration changes as a result of industry experience
- Situations leading to value tensions
- Situations leading to value fulfillment

**Zipper Questions:**

- What about this study made you want to participate?
- Given what you know now through your experience in the program and in industry, what might you change about your UX education?

Thank you so much for your time, that was really interesting. Do you have any questions you'd like to ask me? Or anything of interest that we didn't discuss?