

MOTIVATION AND PROFESSIONAL CAPABILITIES OF INDUSTRIAL
DESIGN GRADUATES FOR ROLES IN THE USER EXPERIENCE FIELD

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NAZLICAN SERENAY BAYAR

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DESIGN GRADUATES FOR ROLES IN THE USER EXPERIENCE FIELD**

submitted by **NAZLICAN SERENAY BAYAR** in partial fulfillment of the
requirements for the degree of **Master of Science in Industrial Design, Middle
East Technical University** by,

Prof. Dr. Halil Kalıpçılar
Dean, Graduate School of **Natural and Applied Sciences**

Prof. Dr. Gülay Fatma Hasdoğan
Head of the Department, **Industrial Design**

Prof. Dr. Gülay Fatma Hasdoğan
Supervisor, **Industrial Design, METU**

Examining Committee Members:

Prof. Dr. Bahar Şener-Pedgley
Dept. of Industrial Design, METU

Prof. Dr. Gülay Fatma Hasdoğan
Dept. of Industrial Design, METU

Asst. Prof. Dr. Mehmet Erçin Okursoy
Dept. of Industrial Design, TED University

Date: 19.01.2024



I hereby declare that all information in this document has been obtained and presented in accordance with academic rules and ethical conduct. I also declare that, as required by these rules and conduct, I have fully cited and referenced all material and results that are not original to this work.

Name Last name : Nazlıcan Serenay Bayar

Signature :

ABSTRACT

MOTIVATION AND PROFESSIONAL CAPABILITIES OF INDUSTRIAL DESIGN GRADUATES FOR ROLES IN THE USER EXPERIENCE FIELD

Bayar, Nazlıcan Serenay
Master of Science, Industrial Design
Supervisor: Prof. Dr. Gülay Fatma Hasdoğan

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The burgeoning field of User Experience (UX) has garnered considerable attention from professionals and organizations across various domains, owing to the expanding array of roles it offers in recent years. Due to its interdisciplinary nature and the absence of established undergraduate programs, UX professionals come from diverse backgrounds, encompassing design, social sciences, computer science, and more. Given this context, exploring the relationship between industrial design and the UX field holds significant potential to enrich the sector for all stakeholders. This research delves into the career paths of industrial design graduates within UX-related jobs, focusing on their educational backgrounds, motivations, and the broader industry landscape in Turkey. Semi-structured interviews with 14 individuals offered insights into the dynamic interplay between industrial design and the UX field.

Keywords: Career Paths, User Experience, Industrial Design

ÖZ

ENDÜSTRİYEL TASARIM MEZUNLARININ KULLANICI DENEYİMİ ALANINDAKİ ROLLERE YÖNELİK MOTİVASYONU VE MESLEKİ YETENEKLERİ

Bayar, Nazlıcan Serenay
Yüksek Lisans, Endüstri Ürünleri Tasarımı
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Gelişmekte olan Kullanıcı Deneyimi alanı, son yıllarda sunduğu genişleyen roller nedeniyle, çeşitli alanlardaki profesyonellerin ve kuruluşların büyük ilgisini çekti. Disiplinlerarası doğası ve bu alanda lisans derecesi sunan yetkili bir kuruluş bulunmaması nedeniyle, kullanıcı deneyimi profesyonelleri tasarım, sosyal bilimler, bilgisayar bilimi ve daha fazlasını kapsayan farklı eğitim geçmişlerine sahiptir. Bu bağlamda endüstriyel tasarım ile kullanıcı deneyimi alanı arasındaki ilişkinin araştırılması, sektörü tüm paydaşlar açısından zenginleştirme açısından önemli bir potansiyel barındırmaktadır. Bu araştırma, Türkiye’deki endüstriyel tasarım mezunlarının kullanıcı deneyimi ile ilgili işlerdeki kariyer yollarını inceliyor ve onların eğitim geçmişlerine, motivasyonlarına ve daha geniş endüstri ortamına odaklanıyor. Endüstriyel tasarım ile kullanıcı deneyimi alanı arasındaki dinamik etkileşime dair bilgiler sunması amacıyla 14 kişiyle yarı yapılandırılmış görüşmeler gerçekleştirilmiştir.

Anahtar Kelimeler: Kariyer Yolları, Kullanıcı Deneyimi, Endüstriyel Tasarım



Dedicated to my beloved ones ...

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LIST OF ABBREVIATIONS

ABBREVIATIONS

ECTS: European Credit Transfer System

HCD: Human-Centered Design

HCI: Human-Computer Interaction

HMI: Human-Machine Interaction

ICSID: International Council of Societies of Industrial Design

ID: Industrial Design

IDF: Interaction Design Foundation

IT: Information Technologies

ITU: Istanbul Technical University

METU: Middle East Technical University

MMI: Man-Machine Interaction

UCD: User-Centered Design

UI: User Interface

UX: User Experience

UXD: User Experience Design

UXR: User Experience Research

WDO: World Design Organization

CHAPTER 1

INTRODUCTION

1.1 Background of the Study

Recently, the emergence of user experience jobs has captured the keen interest of numerous design backgrounds focusing on interaction. Hassenzahl (2008) defines the user experience field and its focus as follows: “User Experience (UX) is not just ‘old wine in new bottles.’ It is a truly extended and distinct perspective on the quality of interactive technology: away from products and problems to humans and the drivers of positive experience.” (p.11). The author underscores a transformative shift from the conventional problem and product-centric approaches in established product development practices to a human-centric orientation emphasizing positive experiences. This transition suggests that the product development process is becoming more interdisciplinary. With current user experience studies predominantly concentrated on digital products, there is an observable uptick in the field’s interdisciplinary nature. As a result of its interdisciplinary nature, for many years, no official institution provided education directly in this field. When evaluating graduate programs, The International Joint Master of Science Program in Design Research for Interaction [Middle East Technical University (METU) & Delft University of Technology (TU Delft)], established in 2008, emerges as one the leading programs that provides a research degree to industrial designers in the field of user experience. This program no longer admits new students. There are also recently emerging graduate programs such as the User Experience Design Masters Program from Kadir Has University and the Interaction Design Program from Yeditepe University. In undergraduate programs in the industrial design field, there are new curriculum courses such as User Research in Design and Service Design

from METU and User Research in Design and Experience Design from TOBB University.

When the professionals in the sector are examined, individuals with diverse backgrounds, particularly in social sciences and computer science, as opposed to design, are employed in user experience jobs. Many job postings featuring diverse titles signify that companies position this interdisciplinary field with different responsibilities according to their own perspectives, as well as revealing that the need for people working in these jobs is very high.

Moreover, the personal motivation for this research is rooted in the author's own experiences. Upon graduation from the industrial design department, a surge in job advertisements in the user experience field was observed. However, uncertainty persisted regarding the compatibility of these roles with an industrial design background. Over time, the realization that the user experience field saw thriving participation from many industrial design graduates and growing interest among peers prompted a deeper exploration. Subsequently, a transition into a user experience designer role in a software company provided firsthand insights, reinforcing the prevailing perception that industrial design is particularly well-suited for roles within the user experience domain, especially in design-oriented positions. In light of the evolutions within the sector, this study directs its attention to examining the correlation between the user experience field and industrial design background, aiming to explore the career paths of industrial design graduates within the user experience sector in Turkey.

1.2 Aim and Scope of the Study

This research aims to reveal the opportunities available in the user experience field for those with a background in industrial design. Additionally, it seeks to explore the motivations that drive these individuals toward pursuing a career in the user experience field. The research sets the following objectives:

- Investigating how knowledge, skills, and competencies acquired during industrial design undergraduate education are applied in various career paths related to the user experience field.
- Investigating the interest and motivations of industrial design graduates in user experience jobs.
- Proposing recommendations for enhancing industrial design education by emphasizing equipping designers with the necessary knowledge and skills for the evolving user experience field.

1.3 Research Questions

The research questions were structured in line with the study's aim and objectives as follows:

- How do industrial design graduates transform and adapt their professional knowledge to the recently emerging user experience jobs?
- What are the roles of industrial design graduates in the user experience field?
- What are the industrial design graduate's interests and motivations for pursuing a career in user experience jobs?
- What strategies can be recommended for industrial design education to better integrate user experience topics?

1.4 Structure of the Thesis

This thesis, titled "Motivation and Professional Capabilities of Industrial Design Graduates for Roles in the User Experience Field," is organized into five chapters, each contributing to a comprehensive exploration of the subject matter.

Chapter 1, Introduction, serves as the introductory section, setting the stage for the research and providing an overview of the background of the study, research questions, aims, and objectives.

Chapter 2, Literature Review, presents a review of the related literature within the subject of the thesis. It includes ‘industrial design’ by examining the development, education, and careers of the profession; ‘user experience’ by examining its emergence, learning, and professional methods; ‘career paths in the field of user experience’ by examining motivations, titles, backgrounds and careers, and ‘the effects of COVID-19 on working life.’

Chapter 3, Methodology, outlines the methodology employed in conducting this study. It delves into the research approach, data collection methods, design of the interviews, sampling group, interview procedure, and analytical approaches utilized to gather insights into the motivations and professional capabilities of industrial design graduates.

Chapter 4, Findings, constitutes the findings section, unveiling the outcomes of the field study. This chapter articulates a presentation of the findings, highlighting significant points of intersection with the literature review.

Chapter 5, Conclusion, synthesizes the overall conclusions drawn from the research. It provides a holistic perspective on the motivations and capabilities of industrial design graduates transitioning into the user experience field and offers insights and implications for academia.

CHAPTER 2

LITERATURE REVIEW

The primary focus of this study is to examine the career journeys of industrial design graduates who have entered the user experience field. The main objectives are to investigate the motivations behind these graduates' decision to pursue a career in this field and to critically assess whether their education in industrial design adequately prepares them for its demands. The chapter is structured around three key sections. The first section provides an overview of recent professional developments in industrial design, the educational framework, and graduates' career choices, establishing a foundation for the subsequent examination of the user experience field. The second section focuses on the user experience, exploring its emergence and evolutions, learning paths of fundamental knowledge in the field, and similarities in design methodologies and terminology exist between the fields of UX and Industrial Design. The third section aims to comprehend the career paths in the user experience by examining motivating factors, job titles, the educational backgrounds of professionals, and the career paths of industrial design graduates in this field. Through these analyses, the section establishes connections and investigates the interplay between industrial design and user experience. Finally, the chapter delves into the consequences of the COVID-19 pandemic on the professional lives of individuals employed in the technology sector.

2.1 Industrial Design

Industrial Design is characterized by rapid evolution, with new technologies, materials, and consumer needs emerging at a constant rate. In recent times, there has

been a significant increase in the emphasis placed on the professional development of industrial designers, alongside a heightened recognition of the critical role played by industrial design education in shaping the future of the field. In order to conduct an examination of the evolution and transformations within this domain, this section addresses industrial design field through three principal subheadings. The first one, 'The Professional Development of Industrial Design in Recent History,' mentions the genesis of the discipline, followed by an explication of its evolving focal points in subsequent years. The second one, 'Industrial Design Education,' examines the emergence of industrial design education in the Turkey context, tracking its progression to its contemporary state. Lastly, the third one, entitled 'Evolving Career Paths of Industrial Designers,' delves into the transformative dimensions of the roles, responsibilities, and orientational shifts characterizing the professional journey of industrial designers across time.

2.1.1 The Professional Development of Industrial Design in Recent History

The examination of the professional evolution of industrial design in recent years has revealed diverse approaches by researchers, resulting in the identification of different chronological periods. Perks et al. (2005) provide an overview of the evolution of design and its shifting roles, encompassing five distinct periods: from the 1920s-1950s, design's emergence as a specialized field due to increased consumer demand for stylish products; the 1960s-1970s, when it attained recognition as a profession integral to post-World War II economic reconstruction; the 1980s, marked by design's close association with branding and designer labels; the 1990s, a period of reevaluation due to the recession, where design was perceived as costly and subsequently reintegrated into firms; and the early 2000s, marked by fierce competition, emphasizing design's leadership in innovation within business strategy. Er's (2007) examination, distinct from the earlier example in its absence of precise dates, provides five principal phases: production-centric, user-focused, market-

oriented, with design as part of corporate identity, heightened market research with semiotics and design consulting growth, and the emergence of innovation as a critical concept (as cited in Hamurcu, 2014). Akoğlu (2009), in parallel with Er, addresses the subject without specifying dates under five headings: the period where production and style influence design, the user-discovery era with a focus on functionality, the quality and sales-focused period, the phase emphasizing market research, and the age where innovation becomes paramount, marking the ultimate ascent of the user. As evident from the three identifications, the early days of the industrial design profession placed significant emphasis on production and style. Subsequent years have witnessed notable changes and advancements in the professional evolution of industrial design. In line with this professional focus, the old definition of industrial design by the International Council of Societies for Industrial Design (ICSID, 1969) is as follows:

“Industrial design is a creative activity whose aims is to determine the formal qualities of objects produced by industry. These formal qualities are not only the external features but are principally those structural and functional relationships which convert a system to a coherent unity both from the point of view of the producer and the user. Industrial design extends to embrace all the aspects of human environment, which are conditioned by industrial production.” (Industrial Design Definition History section)

Nevertheless, distinct focal points are recognized within professional development over later periods. Within the scope of this study, these focal areas can be enumerated as user-centricity, the integration of research within the design process, and innovation. Simultaneously with the recent emergence of the new focal areas, ICSID (2015) changed its definition to “Industrial Design is a strategic problem-solving process that drives innovation, builds business success, and leads to a better quality of life through innovative products, systems, services, and experiences.” Along with this definitional modification, the concept of ‘experience’ has recently gained prominence as a focal point within the purview of industrial design, and numerous design-related fields have shifted their focus from solely emphasizing products to

incorporating terms like ‘experience,’ ‘services,’ and ‘systems’ (Yargın et al., 2018). In the wake of this revised definition, the organization underwent a significant transformation, rebranding itself as the World Design Organization (WDO) in 2017. Within the context of the evolution of the design profession, this change can be interpreted as moving the industrial nature of design away from the focus of the organization and moving the focus of handling design in a more inclusive way to the center. In Turkey’s professional development context, Hasdoğan (2011) states that it began in the early 1970s at the Istanbul State Academy of Fine Arts under the umbrella of interior architecture and industrial design. Later, it continued under the name of industrial design. The professional endeavors of the first graduates from industrial product design departments, established in 1979 at METU and 1985 at Marmara University, gained visibility in the mid-1990s.

For the period between 1995 and 2000, Budd and Wang (2017) mentioned that the fundamental toolkit for an industrial designer typically consisted of around 6 or 7 components, encompassing activities such as sketching, creating models, considering ergonomics, understanding materials, and manufacturing processes, drafting, working on graphic design and layout, and sometimes having a rudimentary grasp of marketing. During this time, most design projects were centered on generating ideas, intricate design work, and developing specifications for production. For the year 2000 and beyond, Heskett (2002) mentions that designer’s toolkits began to digitize, including capabilities such as photo manipulation, computer illustration, 3D computer modeling, 3D anthropometry, rapid prototyping, and programming for the internet as a result of the widespread use of internet access (as cited in Budd & Wang, 2017). Additionally, Budd et al. (2003) state that it became imperative to comprehend a diverse spectrum of user requirements and adapt them through agile prototyping, as neglecting this aspect posed the risk of customer base erosion. This transition ushered in an entirely novel suite of design instruments, ranging from user experience methodologies to interactive technologies (as cited in Budd & Wang, 2017). According to Budd (2011), the toolkit of industrial designers has evolved significantly since the 1990s. As Figure 2.1 outlines, this transformation

has involved adopting new techniques in response to technological advancements and approaches that aim to engage users more actively in the design process.

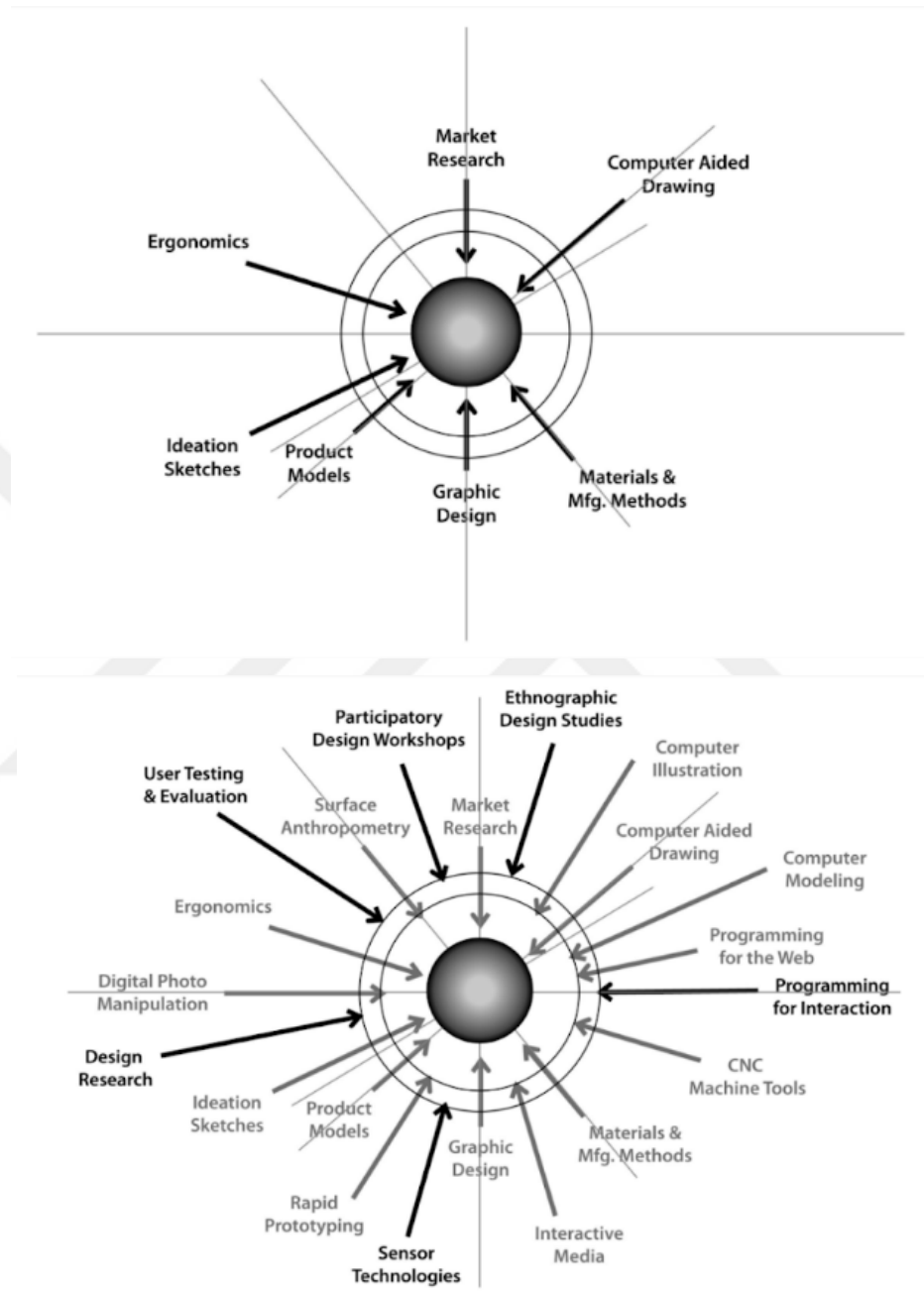


Figure 2.1. Shifting from artifact-centric to experience-centric design processes
(Budd, 2011, pp. 3-5)

Consequently, industrial designers have expanded their scope beyond the traditional concern for the physical attributes of products slated for production. They have begun to contemplate the design of tangible product forms and the intricate design considerations about all interaction points, whether within the physical realm or the digital domain.

2.1.2 Industrial Design Education

The inception of industrial design education globally occurred during the early 1900s, while in Turkey, it commenced in the 1970s. The field has undoubtedly undergone significant evolutionary phases and transformations throughout its historical development. Meyer and Norman (2020) point out that design education initially emerged regarding the versatility of craftsmanship; however, since the demands and possibilities within the design field have greatly expanded, the profession broadened its horizons to encompass new materials, manufacturing methods, digital technologies, and virtual media, thereby increasing its potential and reach. In their 2017 publication, Budd and Wang attribute the profession's origins to the Industrial Revolution and assert that it is now poised to assume a pioneering role in advancing intelligent wireless technologies. Concerning evolving professional roles, Süner-Pla-Cerdà et al. (2021) argue that the designer transforms from a form creator to a strategic thinker responsible for envisioning user-product interactions and experiences. This paradigm shift necessitates a comprehensive reexamination of industrial design education. A consistent perspective emerges from various studies conducted in the field of education across different years: design professionals frequently encounter complex and consequential challenges; nevertheless, the prevailing design education system often exhibits inadequacies in comprehensively preparing students with the essential knowledge and skills necessary for employment before graduation (Meyer & Norman, 2020; Yang et al., 2005). This criticism of the current design education system is also supported by Torrens's (2000) statement that while the evolution and continuous updating of professional skills, knowledge, and

values within industrial design programs were due to computer-aided design, new production methods and advances in materials technology, aspects like interpreting user needs and desires have remained relatively unchanged. Likewise, Oygür and Karapars (2019) contend that industrial design education encounters challenges in furnishing its graduates with adequate proficiency in digital product design within the emerging professional landscape shaped by integrating user interfaces or software applications into products.

Although there are specific areas for improvement in the education offered by industrial design departments to prepare designers for their evolving roles, it is widely recognized that this education maintains a user-centered approach, a salient attribute concerning the evolving roles. Süner-Pla-Cerdà et al. (2021) state that approximately half of the program's European Credit Transfer System (ECTS) credits are allocated to design studios, emphasizing hands-on project experience after reviewing industrial design curricula. Furthermore, mandatory ergonomics, human factors, marketing, and user research courses are common, indicating a user-centered approach. Correspondingly, Yang et al. (2005) declare that industrial design departments offer a range of elective courses encompassing engineering, ergonomics, management, arts, and computer-related subjects besides mandatory design courses. These elective courses serve a dual purpose: They enhance students' comprehension of diverse design responsibilities within the product development process while expanding their awareness of related design fields, including product planning, design management, human-machine interface, and more. Another analysis of the industrial design courses shows that the curriculum comprises a range of obligatory and optional courses integrating considerations related to the user factor. The mandatory courses encompass ergonomics/user factors, research methodologies, and consumer-focused marketing. Conversely, the elective courses encompass user experience/interaction/service design, inclusive design, user factors, and user research courses (Süner-Pla-Cerdà et al., 2021).

While the training curriculum strongly emphasizes cultivating a user-focused orientation, contributing value to the ever-evolving designer role, it is essential to

note that certain conspicuous omissions within its educational framework exist. Yang et al. (2005) state that the formal design curriculum has yet to extensively incorporate interaction, interface, and experience design. Approaching this matter from an alternative standpoint, many educational institutions need more comprehensive offerings in applied psychology or cognitive science, encompassing a broad spectrum of human behavior, decision-making, perception, attention, and interaction. When such courses are available, they frequently adopt a consolidation approach, amalgamating these multifaceted subjects into a single simplified curriculum, which may fall short of providing students with a comprehensive understanding of each area (Meyer & Norman, 2020). Torrens (2000) addresses this insufficiency twenty years ago, suggesting that the proficiencies encompassing interpersonal skills, knowledge, and the utilization of ergonomics and social science-based assessment techniques bear relevance across a broader spectrum of industrial and product design domains.

2.1.3 Evolving Career Paths of Industrial Designers

In the dynamic field of industrial design, career paths have evolved significantly in response to changing technologies and consumer demands over the years. According to Valtonen (2005), while the designer significantly impacted the design process, assuming both creator and artistic visionary roles for the product, often characterized as an unconventional personality with distinct qualities in the 1950s, a transformation occurred in design discourse, leading to a collaborative approach involving the industry, highlighting cooperation with engineers and marketing departments in the 1960s. In the next decade, by emphasizing considerations like ergonomics and anthropometry and focusing on understanding user needs, including special groups like children, senior citizens, and disabled people, designers aimed to take a more influential role in shaping product development. This led to a shift toward a more methodical, data-driven design process, distinguishing it from traditional arts and crafts approaches. During the 1980s, design management gained significant

prominence, marking a period of notable advancements in professional development within this domain. Designers transitioned from their conventional roles as contributors to product decisions to assuming a more central position in controlling and managing the entire product development process. In the 1990s, the primary emphasis shifted from aesthetics and individual designer recognition to design integration within product development. Although industrial designers have traditionally aimed to maximize corporate profits, recent attention has been directed towards strategic design, where product differentiation extends beyond the physical attributes, prioritizing the overall user experience. The five-decade duration of industrial design roles, as elucidated by Valtonen in her research, has unquestionably exerted a profound influence on shaping today's designer's role.

Upon scrutinizing the roles in the twenty-first century, one work distinguishes itself with its innovative definition. Based on their observations of technology and social design practices since the 1900s, Coşkun and Ramoğlu (2017) characterize the current design practice as scientific craftsmanship, emphasizing collaboration with digital resources, local manufacturing, the application of multidisciplinary scientific methods and theories, and collaborative creation, diverging from the traditional craftsmen and designers of the 20th century. In alignment with the provided definition, Perks et al. (2005) state that designers acquire a wide range of skills, including non-design functions like observation, research, business analysis, communication, and process management skills in the design-centered approach. Likewise, Yang et al. (2005) address this matter by categorizing it into disciplines. They suggested that graduates of industrial design have the opportunity to specialize in various career avenues, encompassing domains such as product planning, design management, mechanism design, computer-aided industrial design, interface design, and related fields by introducing the imperative need for graduates to acquire a particular set of qualifications should they aspire to advance within these domains.

Following an exploration of the historical progression of professional roles, competencies, and vocational domains, it becomes advantageous to investigate the career trajectories pursued by graduates of industrial design based on empirical data.

According to the data from Hasdoğan's study conducted in 2011, around 8% of industrial designers listed in the Industrial Designers Society of Turkey database were involved in various design domains. This encompasses primarily interior design and interaction design. Notably, some industrial designers have pursued specialization in these fields through postgraduate studies. Recently, there has been a rise in the count of designers specializing in interaction design, or the broader realm of visual communication design, engaging in sectors like web design and the design of interactive educational interfaces. Another study by Kaygan et al. (2020) investigates the career paths of graduates from industrial design departments at four prominent universities in Turkey. The study classifies these graduates into six distinct categories. These categories comprise 'design-related' roles, including positions like designer and architect, 'marketing-related' roles such as sales and brand management, 'UX-focused' roles covering areas like user experience design, 'other creative industries' roles about fields like film and television, 'non-design management' roles such as chief executive officer and project manager, and lastly, 'other' category encompassing occupations unrelated to design or of a non-professional nature. Figure 2.2 summarizes the trajectory of the six categories from 1998 to 2018. It illustrates the emergence of user experience-centered roles in the early 2000s and their subsequent rapid acceleration in recent years. The study argues that upward trajectory within this job category warrants continued scrutiny to assess its future trajectory in the ensuing years since UX-focused positions made their debut in 1999 and progressively grew to account for 4.79% of our dataset in the concluding period. Regarding the reflection of this situation in educational institutions, Süner-Pla-Cerdà et al. (2021) note that the tendency of industrial design graduates toward the user experience discipline is discernible, and educational institutions' effort to integrate user experience-related issues into the industrial design curriculum.

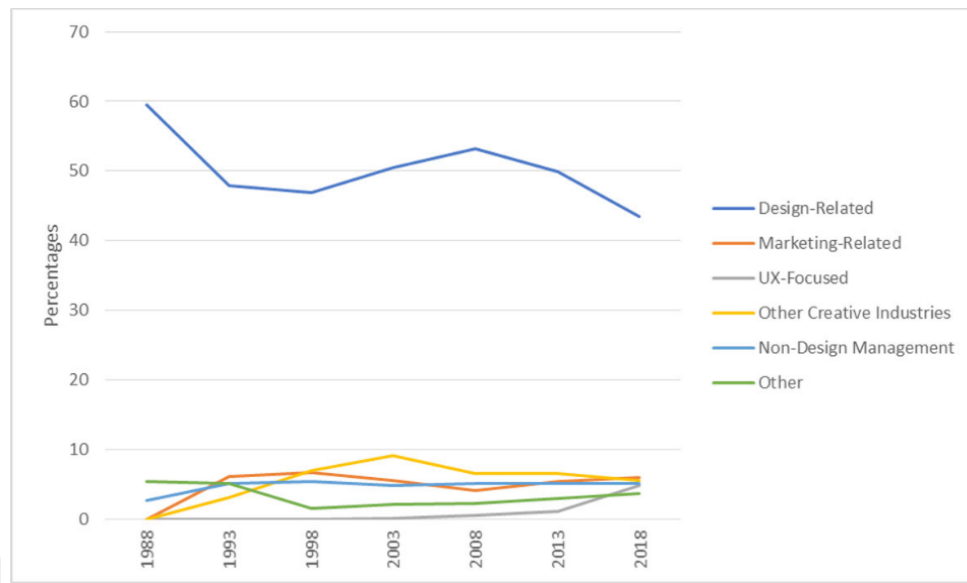


Figure 2.2. In-house industrial design job shifts, 1984-2018 (Kaygan et al., 2020, p. 832)

2.2 User Experience

User experience has gained prominence in recent years as designers and researchers have come to recognize the imperative of creating products and services that are both useful and enjoyable to use. Examining the precise definitions of several terms is essential before exploring the existing literature in this field. To describe the field of human-computer interaction (HCI), Carroll (2019) noted that it focuses on how people interact with computers. The term emerged in the early 1980s as a computer science specialty that draws on cognitive science and human factors engineering. According to Fallman (2003), HCI is a field of research that focuses on the design of information, interaction, and communication technology. It is about designing easy and enjoyable technology to design more efficient and user-friendly products and systems. HCI is employed synonymously with the terms Man-Machine Interaction (MMI) and Human-Machine Interface (HMI). In addition to the terms introduced earlier, The International Organization for Standardization (ISO, 2018) has provided definitions for the following key concepts:

- **Human-centered design (HCD):** “approach to systems design and development that aims to make interactive systems more usable by focusing on the use of the system and applying human factors/ergonomics and usability knowledge and techniques.”
- **Usability:** “the extent to which a system, product or service can be used by specified users to achieve specified goals with effectiveness, efficiency, and satisfaction in a specified context of use.”
- **User experience:** “user’s perceptions and responses that result from the use and/or anticipated use of a system, product or service.”
- **User interface (UI):** “all components of an interactive system (software or hardware) that provide information and controls for the user to accomplish specific tasks with the interactive system.”

HCD is used with similar meanings to the term user-centered design (UCD). Concerning the definitions, it is clear that the terms HCI, HCD, and usability focus on objective concerns such as ease of use, efficiency, the attainment of desired outcomes, and user specificity. At the same time, UX addresses a subjective concern by focusing on the responses and perceptions of individual users. To bring this issue to the forefront, Hassenzahl and Tractinsky (2006) argue that when understood as a positive form of HCI, UX should focus on creating exceptional experiences rather than simply preventing usability problems, which results in a challenge to the traditional HCI assumption that high quality is the same as the absence of problems. Just as there is more to well-being than the absence of disease, there is more to UX than the absence of problems.

After a brief introduction with the terms, the framework of this section will explore the concept of user experience in great detail under three distinct subheadings to reveal its pertinence and interconnectivity to the subject matter of the study. Firstly, the emergence and progression of this term over time will be discussed under the title ‘The Emergence and Evolution of the User Experience Term.’ Subsequently, the ‘Learning the Basics of User Experience’ section will highlight how

professionals have attained fundamental knowledge in this field, which has long lacked formal education. Finally, the section titled ‘Methods and Terminology in UX Design Processes’ will examine the commonalities in design processes between the UX and Industrial Design fields.

2.2.1 The Emergence and Evolution of the User Experience Term

User experience, commonly abbreviated as ‘UX,’ has progressively evolved into a pivotal concept in design and technology. The term represents a relatively recent and comprehensive concept across design professions. The increasing interest in user experience within academic and industrial contexts arises from the awareness among HCI researchers and practitioners who think the traditional usability framework centered on user cognition and performance in human-technology interactions has limitations (Law et al., 2009). Meanwhile, according to survey results by Lallemand et al. (2015), UX is strongly connected to user-centered design and usability, namely the utilitarian aspects of design. Their results show that the “Designing for UX must be based on user-centered design” idea is rated highly by their participants. Additionally, 81.4% of their participants consider usability a crucial prerequisite for a good user experience. In the context of these associations with HCI, UCD, and usability, Law et al. posit that UX, conversely, places non-utilitarian aspects, like user emotions, sensory experiences, and the personal significance of these interactions in everyday life.

Norman (2017) states that Bell Telephone Laboratories made groundbreaking contributions to the development of the user experience field. Their involvement began with hiring the first psychologist, John E. Karlin, in 1945 to design telephone systems. By the 1950s, Bell Labs was actively engaged in UX work, mainly focusing on the design of the touchtone keypad. The continued use of this design underscores the critical importance of initially getting the user experience right.



Figure 2.3. 1959 Experimental touch-tone phone model, Bell Labs. (Retrieved from www.nytimes.com/2013/02/09/business/john-e-karlin-who-led-the-way-to-all-digit-dialing-dies-at-94.html?smid=url-share)

Although the product development process at Bell Lab in 1945 could be evaluated under the user experience practice, this nomenclature was not used then. In the term's short history, Don Norman and his colleagues can be credited as early proponents who introduced the 'User Experience' term while participating in a conference at Apple Computer Inc. The conference paper they authored briefly references the term, describing it as covering the aspects of human interface research and application (Norman et al., 1995). Since its introduction in 1995, the literature has generated multiple definitions of user experience. Before delving into comparative analyses of definitions that emphasize distinct facets, exploring the perspectives concerning the absence of a universally standardized definition is noteworthy. Several studies (Hassenzahl, 2008; Law et al., 2008) state that multiple definitions and perspectives exist regarding UX, but a standard, universally accepted definition of UX is yet to be established. According to Hassenzahl (2008), there is a pressing need for such a

consensus, and this necessity arises from the considerable difference in how professionals and academics perceive the true essence of UX.

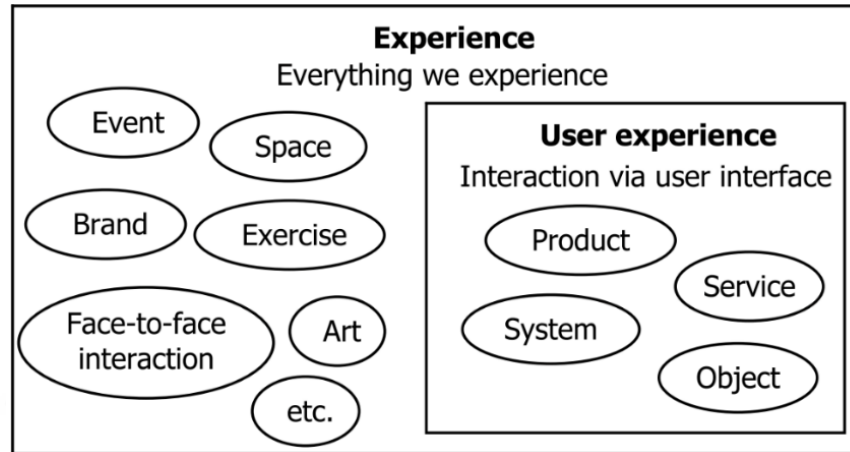


Figure 2.4. UX in relation to other experiences (Law et al., 2009, p. 727)

Hassenzahl (2008) describes UX as a fleeting, predominantly evaluative emotional response (positive or negative) that arises during interactions with a product or service. This viewpoint emphasizes a shift in attention from the product and its physical attributes to a focus on human experiences and the subjective dimension of product usage. Similarly, Ueda et al. (2018) state that the term 'UX design' can be used within the framework of broadening the concept of usability to encompass elements such as feelings of empathy and overall satisfaction. While these two definitions concentrate on the emotional and subjective aspects, which constitute the central areas of user experience, it is worth noting the existence of alternative definitions with varying emphases like multi-disciplinary. In this context, Kou et al. (2018) convey that user experience signifies a departure from exclusively visual or product-centric notions of design to a focus on designing interactions and services. It embodies an interdisciplinary approach, drawing upon diverse knowledge, theories, and methodologies from various disciplines, including engineering, computer science, sociology, and psychology. With a similar focus, Hamurcu (2014) defines user experience as a multidisciplinary field that ensures software interfaces' effective, efficient, and satisfactory use. As seen in former definitions and outlined in Figure 2.4, to highlight how wide-reaching user experience is, Law et al. (2009)

explain the term as encompassing products, systems, services, and objects an individual engages with via a user interface.

2.2.2 Learning the Basics of User Experience

While undergraduate and graduate departments specializing in HCI have existed for an extended period, there has been a notable absence of undergraduate programs specifically dedicated to user experience within educational institutions from its inception in the literature in 1995. Kou et al. (2018) point out that user experience design is a developing field without sufficient backing from the conventional education system. There needs to be more well-defined pathways to becoming a UX professional for students commencing their undergraduate studies, primarily because of the scarcity of undergraduate academic programs dedicated to UX. While this deficiency continues in undergraduate education, graduate programs and certificate offerings in user experience have become available in academic catalogs in the last few years. Yargın et al. (2018) state that even though UX education is predominantly offered outside of regular academic programs, the rising need for UX professionals ready for employment in the technology industry is prompting adjustments to the curricula of undergraduate and graduate programs. As highlighted by Süner-Pla-Cerdà et al. (2021), students in the Industrial Design department at METU found courses related to topics such as user-centered design, user research, service design, product semantics, user-product interaction, and graphic design beneficial for their career plans in UX, even though these courses are not explicitly centered on this field. Süner-Pla-Cerdà et al. also state that Turkey does not offer any undergraduate UX programs; however, UX-related subjects are predominantly found in graduate courses within design academia.

Regarding the presence of an academic unit that will train students in a multidisciplinary field such as user experience, Getto and Beecher (2016) declare that defining a specific home for UX education in the modern university system can be challenging due to the institution's tendency to categorize skills into distinct

disciplines. From a similar but more positive perspective, Morris (2021) states that diverse disciplines, such as graphic design, industrial design, psychology, marketing, and computer science, operate independently in a traditional university setup. However, the UX field challenges these boundaries, emphasizing the need for collaborative integration among these disciplines to create a successful curriculum. By emphasizing multidisciplinary, as in the first two studies, Yargın et al. (2018) mention that to develop educational materials for UX, other disciplines need to integrate methods and tools relevant to professions in this field. Academicians must combine methods and tools associated with other disciplines when adapting educational programs and course materials to include UX-related competencies. This not only results in redefining the domains of those disciplines but also a gradual merging of their boundaries. Furthermore, Süner-Pla-Cerdà et al. (2021) mention that establishing formal UX education and professional practices is at an early stage in Turkey.

In addition to formal training in schools and institutes, it is observed that designers benefit from online resources to support their education and enrich their knowledge. Figure 2.5 shows the results of a survey conducted globally by Nielsen Norman Group that online courses are the most favored education source for UX, with over 50% of respondents completing them. This preference is due to the abundance of online UX courses offered by various institutions like Coursera, General Assembly, IDEO, Interaction Design Foundation (IDF), LinkedIn Learning, and Udemy, as indicated by the respondents (Rosala & Krause, 2019). Similarly, Süner-Pla-Cerdà et al. (2021) mention that many UX professionals engage in extracurricular training, mainly from the IDF and the User Experience Professionals Association in Turkey. They also mention online UX courses on platforms like Udemy and Coursera in parallel with the results from Rosala and Krause. Moreover, various resources are mentioned, including UX blogs and websites (e.g., Sherpa, Userspots, Medium), UX prototyping platforms, and social media networks (such as Behance and Pinterest). Besides these, there are notable events such as the UX Camps held since 2012 and the annual UX Alive conference since 2015, organized by Userspots, a UX design

consultancy firm based in Istanbul, and events organized by UXMinimal, a non-profit UX community in Ankara.

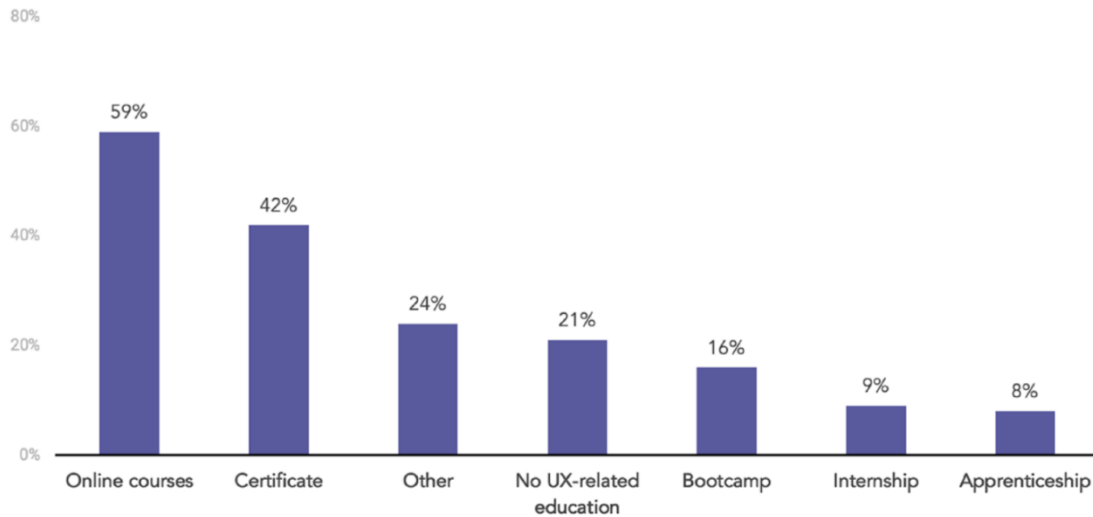


Figure 2.5. Sources of UX Education for Practitioners without a UX Degree
(Rosala & Krause, 2019, p. 35)

In a study by Kou et al. (2018), online communities (specifically Reddit) are identified as another platform for learning UX, and five distinct roles mediating the knowledge acquisition process are defined. As depicted in Figure 2.6, individuals seeking to acquire knowledge in UX, particularly students and novice designers, can find value in the information exchange facilitated by platforms like Reddit. They can gain access to expert insights within the field of UX through the guidance of four distinct roles:

- **Knowledge Broker:** Shared new and valuable UX knowledge
- **Translator:** Bridged academic knowledge with real-world applications
- **Experienced Practitioner:** Senior UX professionals with industry expertise
- **Conversation Facilitator:** Encouraged discussions but did not introduce new knowledge
- **Learner:** Students or junior UX designers seeking guidance from the community

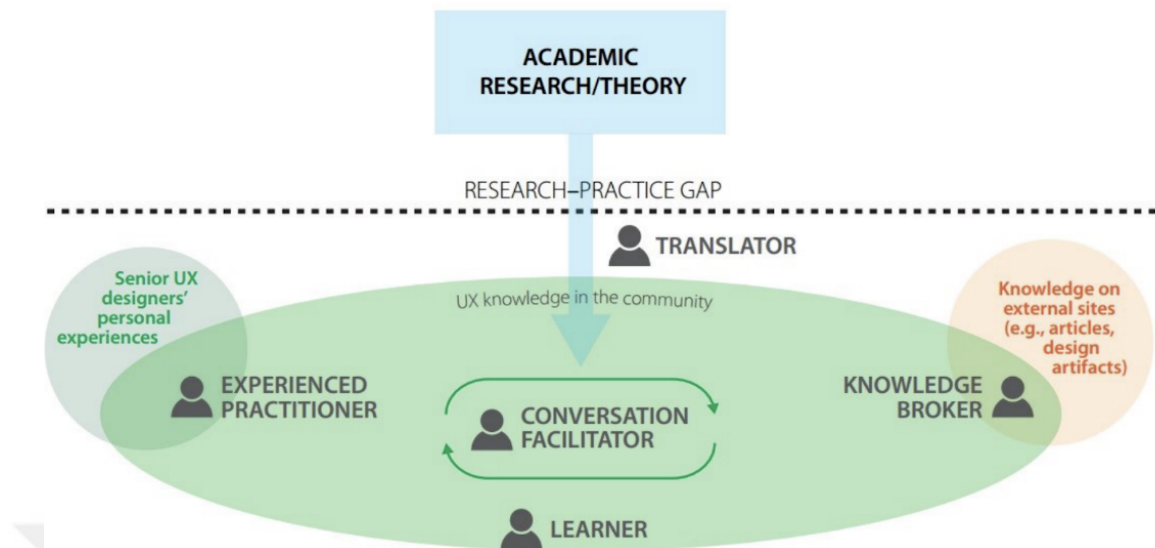


Figure 2.6. Social Roles in the UX Community (Kou et al., 2018, p. 2074)

2.2.3 Methods and Terminology in UX Design Processes

It has been discussed in previous topics that user experience is a multidisciplinary field of study. This heading will examine which methods and terminology the UX field includes in the design processes. First of all, design thinking, a methodology widely used in various fields and professions, is also frequently discussed in the context of user experience. Ueda et al. (2018) mention that design thinking is a methodology and approach to UX design that focuses on understanding the user, envisioning a better future, and prototyping and testing solutions early and often. Razzouk and Shute (2012) define design thinking as combining analysis and creativity to help people explore new ideas, create and test prototypes, and gather feedback to improve their designs. Additionally, they mention readiness to face problems, thinking outside the box, and coming up with innovative solutions as acquisitions of the method. Next, from the industrial designer's point of view, Süner-Pla-Cerdà et al. (2021) declare that human-centeredness and human factors are essential in UX design, emphasizing the importance of usability, ease of use, emotional aspects of interaction, human psychology, and empathy. Although it is not

mentioned directly concerning user experience, including some arguments about user research related to the terms in the previous statement is helpful. According to Torrens (2000), a product design specification that accurately defines the user's needs is essential for developing a successful product. To reach the entire market, designers must understand the different user groups and identify their everyday needs. From a similar perspective, McGinley and Dong (2011) state that designers should not generalize about individuals or make assumptions about their needs when creating empathetic and wide-reaching design solutions. Instead, they should consider the individual and the level of diversity among potential user groups. This means designing for a range of users rather than just the average user. The issues raised by Torrens, McGinley, and Dong apply to any product a user interacts with, regardless of the specific scenario in which the user experience occurs.

As Getto and Beecher (2016) state, industry-based studies have shown that UX is a diverse field encompassing various roles and disciplines, such as usability testing, information architecture, content strategy, user research, interaction design, and user interface design. Figure 2.7 summarizes the findings of Rosala and Krause's (2019) research on UX professionals' skills. While the nomenclature is not identical, the multidisciplinary nature mentioned by Getto and Beecher is evident in this table. The skills for user acceptance testing, research skills, and data analysis/analytics are relevant to usability testing and user research. The data analysis/analytics skill is relevant to information architecture. The content strategy and writing skills are relevant to content strategy. The prototyping, visual design, and data visualization skills are relevant to interaction and user interface design. From a holistic perspective, the above skills can be categorized alphabetically as analysis, communication, design, management, programming, research, and writing. While selecting the most popular skill may be challenging, Figure 2.7 indicates that programming-related skills are the least popular among UX professionals.

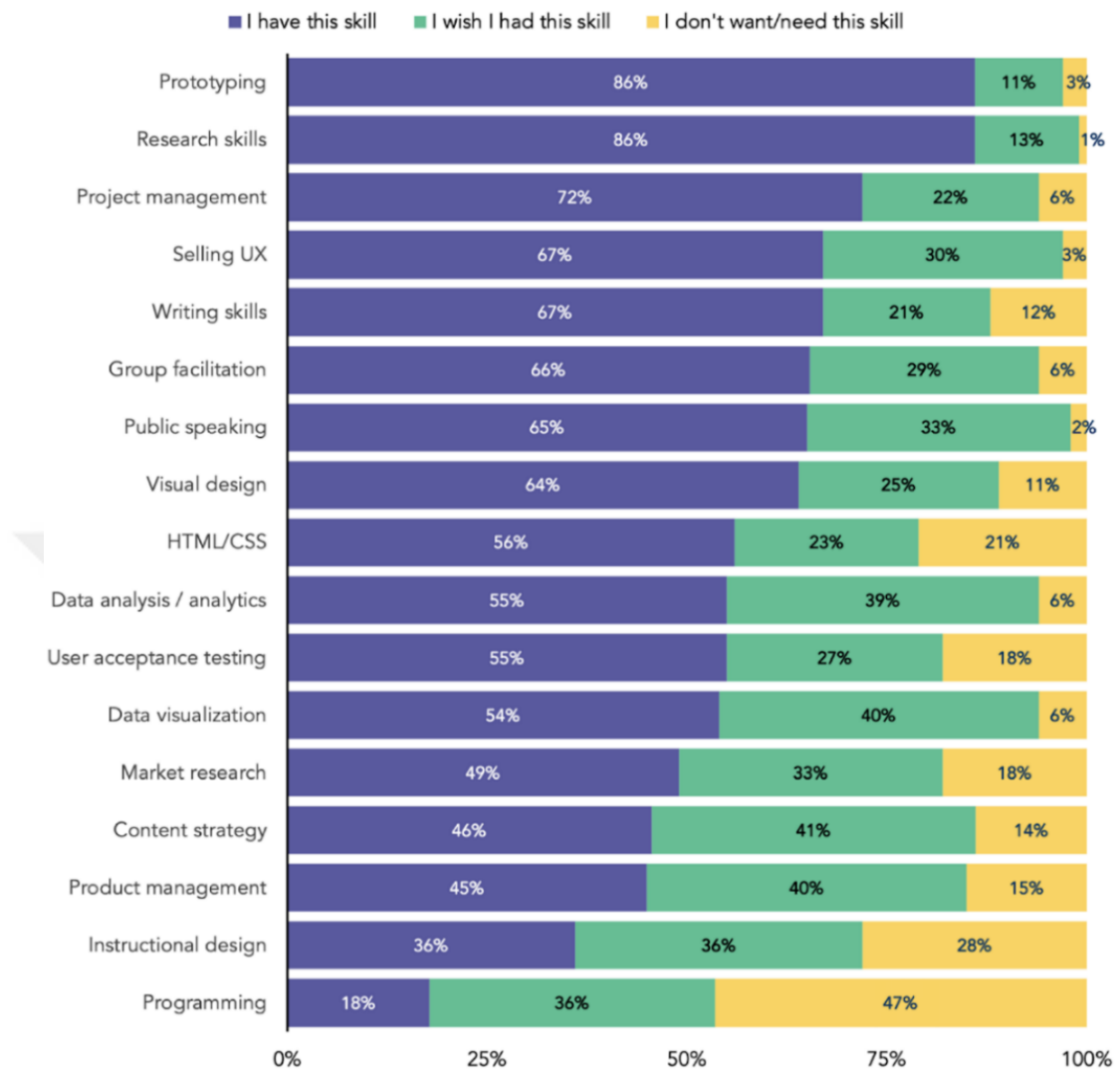


Figure 2.7. Skills of UX professionals (Rosala & Krause, 2019, p. 46)

Gray (2016) conducted a study examining methods used by thirteen UX professionals by interviewing them. Figure 2.8 shows black rectangles presenting votes from each participant and methods under five headings: approach, communication, analysis, user research, and representation. With nine votes, collaboration emerges as the prominent choice within the communication domain. In the analysis context, usability testing garners seven votes, while brainstorming follows closely with five votes. In the realm of user research, persona/scenario development receives seven votes. Lastly, in terms of representation, sketching methods are favored with eleven votes.

		Approach		Communication				Analysis							User Research		Representation				
		Agile	Strategic design	Feedback	Collaboration	Company wiki/blog	Business terms	Persuasion	Brainstorming	Contextual inquiry	Mental models	Affinity diagramming	Problem framing	User journey/experience map	Heuristic evaluation	Usability testing	Personal/scenario	Interview/focus group	Storyboard	Sketching	Whiteboarding
CONSULTANCY	Avery	■	■		■		■	■			■						■	■			
	Terence				■		■													■	
AGENCY	Marla						■		■	■				■		■	■	■		■	
	Hugh				■															■	
	Bruno									■				■		■	■	■		■	
LARGE COMPANY	Jean		■	■	■			■	■				■							■	
	Diane	■	■					■	■				■								■
	Philip					■											■		■	■	
	Ganesh			■	■	■	■	■	■					■		■			■	■	■
	Prakash			■	■			■	■						■	■	■		■	■	
SMALL COMPANY	Scott	■		■	■							■	■			■	■			■	■
	Eric				■		■										■		■	■	
	Dhaval	■		■	■					■						■	■	■		■	

Figure 2.8. Methods UX practitioners use in their work (Gray, 2016, p. 4048)

The findings of Rosala and Krause's (2019) study presented in Figure 2.9 align with Gray's findings on collaboration and representation. The skill with the highest rate, 'prototyping or wireframing,' can be associated with sketching, while 'collaborating with SMEs' can be associated with collaboration.

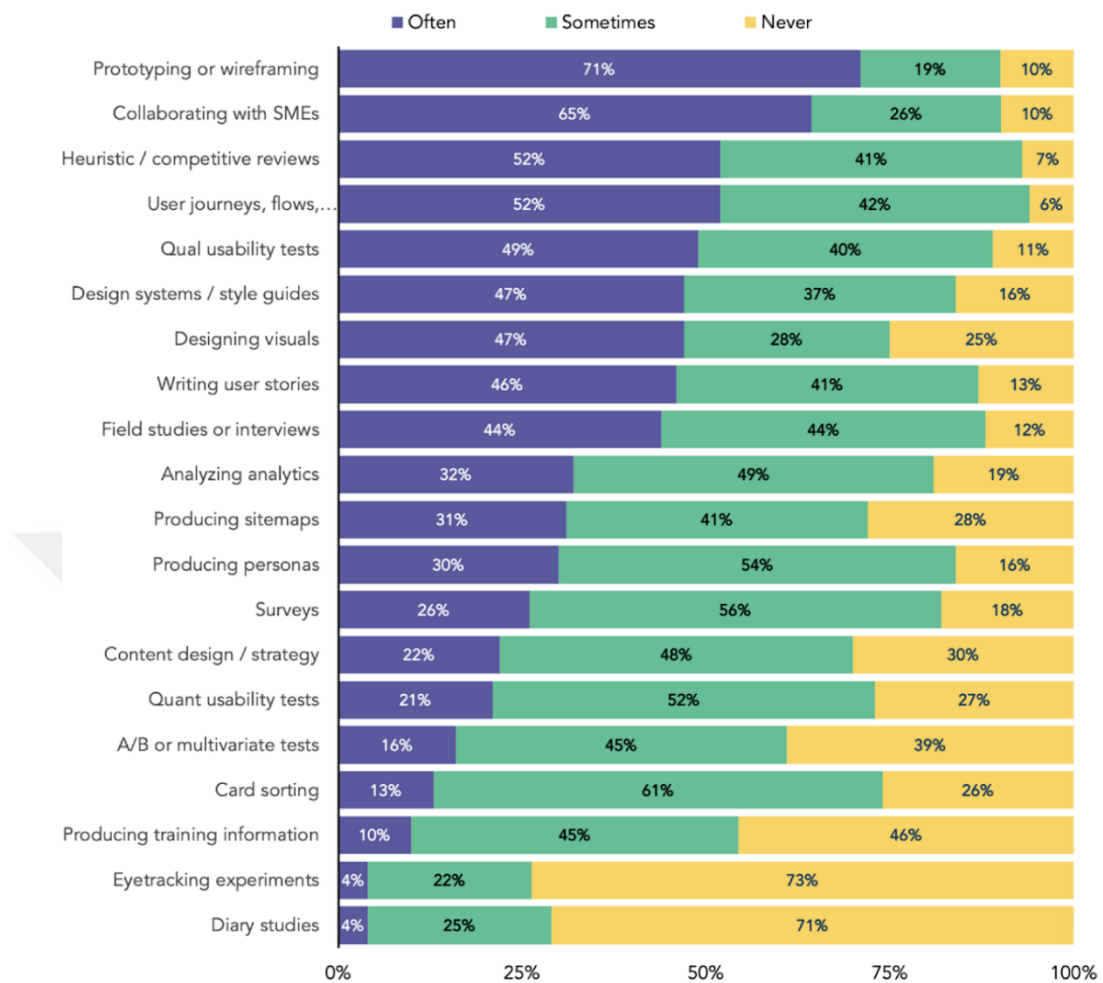


Figure 2.9. UX professionals' activities (Rosala & Krause, 2019, p. 24)

2.3 Details of Career Paths in the User Experience Field

This section will examine details of career paths in the user experience field under three subtitles. Firstly, 'Motivations for Working in the Field' centers on industrial design graduates, probing their motivations for entering the user experience field. The two main factors driving this transition are challenging conditions and underdevelopment in the industrial design sector, contrasted with the positive growth and advancement in the user experience field. Secondly, 'Titles and Backgrounds of Professionals' delves into the dynamic evolution of titles within the UX field to reflect their diverging specialization. It also explores the diverse backgrounds of

professionals in various roles within the multifaceted UX field. The review explores the various academic and professional backgrounds that professionals bring to their roles, shedding light on the range of expertise and experiences that contribute to the dynamic skill set characteristic of UX professionals. Finally, 'UX Career Journey Shaped by Industrial Design Education' delves into the influence exerted by industrial design education on the trajectories of careers in the UX field. The aim is to demonstrate how this educational foundation molds individuals navigate the UX field. By emphasizing the interplay between UX career journeys and industrial design education, insights are sought into the influences contributing to the distinctive UX professionals.

2.3.1 Motivations for Working in the Field

As mentioned in previous headings, roles related to the user experience field has recently gained widespread attention and opened up job opportunities for professionals from diverse backgrounds due to its multidisciplinary nature. In this section, the primary focus will be directed toward graduates in industrial design, with an examination of their motivations for pursuing careers in the user experience field. When reviewing the relevant literature, it becomes apparent that two primary factors play a role in the shift from industrial design to the user experience field. The first factor is adverse conditions within the industrial design profession and underdeveloped industry. In contrast, the second factor is shaped positively through the growth and advancement of the user experience field.

About the first factor, Hasdoğan (2011) explains the situation in Turkey: the design services sector has grown rapidly in recent years, but there are still challenges for both industries and graduates. Industries need design services, but they may not understand what design entails or how to find and hire the right talent. Graduates of industrial design programs face difficulty finding jobs in their field, and many end up specializing in a different design field within a few years. Süner-Pla-Cerdà et al. (2021) state that many junior industrial designers are employed in positions that do

not adequately utilize their skills and knowledge. In the same context, Öz and Er (2016) highlight recurring instances in which industrial designers in Turkey report inadequate salaries in their study involving 14 participants, most of whom were industrial designers. They also mention that insufficient integration of research within the design process constitutes a recurring concern. Many designers have indicated that their workplaces do not view design as a research-intensive or reflective procedure. There are instances where designers are presented with pre-existing research findings, while in other cases, the availability and anticipation of such data are notably absent. Etemoğlu and Er (2014) conducted a study on motivation factors for the profession in Turkey with 87 industrial designers, most of whom work in the physical product sector. Observe that among the 87 industrial designers who participated in their study, only one or two in each category experienced an improvement in their motivation (Table 2.1).

Table 2.1. Factors enhancing motivation for industrial designers

Job satisfaction	1 in 87 participants
Career plan opportunity	1 in 87 participants
Opportunity to use new technology	1 in 87 participants
Allowing the entire work to be seen	1 in 87 participants

While this study does not explicitly denote that the identified criteria demotivate the remaining 86 participants, the fact that only one participant expressed contentment implies that most individuals exhibit dissatisfaction or neutrality in response to these issues.

Shifting the focus to the second factor, as elucidated by Süner-Pla-Cerdà et al. (2021), it is apparent that the domain of user experience in Turkey is burgeoning in alignment with global trends. Gray (2014) states that over the last ten years, there has been a notable transformation in incorporating UX methodologies across diverse sectors, an escalating demand for well-qualified professionals, and an expansion of educational initiatives to prepare interaction designers and user researchers. For

professionals encountering challenges in establishing their presence within industrial design, the emergence of user experience across product development processes has been interpreted as a motivation source to change fields. On the other hand, despite the less favorable career and salary prospects in industrial design, those working in UX face a more optimistic situation. As shown in Figure 2.10, Rosala and Krause's (2019) work clarifies that the majority of UX professionals are satisfied with work conditions and salary. The authors have delineated the reasons for participants' passion for the profession as follows: "they love the process and the work," "seeing the impact of their work," "receiving recognition for their work," and "having opportunities to grow and excel" (p. 63). While no specific research was conducted on industrial designers, Gonzalez et al. (2014) identify motivations for entering the UX field among members of the Human Factors and Ergonomics Society. These motivations include the perception of a growing and appealing job market that complements the human factors domain and a perceived deficiency of comprehensive, specialized training during graduate school for this emerging job market.



Figure 2.10. Satisfaction scores for career and pay (Rosala & Krause, 2019, p. 62)

2.3.2 Titles and Backgrounds of Professionals

In the context of relatively earlier times, Ramoğlu and Coşkun (2017) point out that the evolving concept of the product has given rise to new designer titles and job descriptions, such as interaction designer, service designer, and experience designer, reflecting the changing landscape of product development and design. They also express that collaboration with individuals from diverse fields, encompassing engineering, psychology, management, and others, has become increasingly prevalent in contemporary design practice. In addition to the historical development of design, since user experience emerged as a profession and started to take an active role in design and product development processes in business life, many titles have occurred and shared responsibilities at a detailed level. Gonzalez et al. (2017) state that job postings reflect the growing tendency among companies to distinguish between UX Design, UX Research, and UX Writing, highlighting the increased specialization within the UX field. Furthermore, survey results conducted with 693 participants from 65 different countries by Nielsen Norman Group detect 134 distinct job titles associated with the UX field (Rosala & Krause, 2019). The most recurring ones are listed in Table 2.2. This study grouped the titles under four headings: designer, nonspecialized UX, researcher, and content specialist.

Table 2.2. Job titles UX practitioners have (Rosala & Krause, 2019, pp. 16-18)

Job-title category	Job titles UX practitioners have	Frequency
Designer (n=328)	UX designer	171
	Product designer	46
	UX/UI designer	44
	Designer	8
	Interaction designer	8
	Experience designer	8
	UI designer	7
	Graphic designer	4
	UX / product designer	3
	Visual designer	3
	Digital designer	2
	Digital product designer	2
	Service designer	2
Nonspecialized UX (n=86)	UX consultant	15
	UX specialist (or UX/UI specialist)	15
	UX architect	13
	UX strategist	7
	UX expert (or UX/UI expert)	6
	UX analyst	4
	UX designer and researcher	4
Researcher (n=83)	UX researcher	60
	User researcher	10
	Design researcher	6
	UX-research coordinator	2
Content specialist (n=8)	Content strategist	4
	UX writer	2
	Content designer	1
	Web content specialist	1

Although information cannot be accessed directly in the literature for every title, it is possible to obtain information about the definitions and responsibilities of some of them. Starting with the designer titles, Gonzalez et al. (2014) provide definitions for two of them:

- **Interaction Designer:** “Designing experience, process and transaction of information between users and products” (p. 1810)
- **Visual Designer:** “Applying visual treatments to existing work or creating new visual work” (p. 1810)

In the detailed explanations, while competencies in strategic thinking and decision-making are mentioned for the interaction designer, only visual editing skills are mentioned for the visual designer. Without commenting on which department trains employees for which title, another approach to designer titles by Rosala and Krause (2019) point out that designers often hold degrees in design-related disciplines, such as graphic design, industrial design, product design, digital media, visual communications, and fine arts.

Transitioning to the research section, Yargin et al. (2018) state that independently planning, conducting, analyzing, and communicating user research is crucial in the ever-evolving technological landscape and professional practices. User experience research (UXR) has become a central skill in the broader UX process and is emerging as a specialized expertise within the professional UX field. A study by Forlizzi and Battarbee (2004) summarizes the work done in the field of UXR as comprehending experience concentrating on the interactions between individuals and products, encompassing the entirety of the product experience, spanning physical, sensory, cognitive, emotional, and aesthetic dimensions. There is a definition for the title provided by Gonzalez et al. (2014) again as follows:

- **User Researcher:** “Developing and testing prototypes and analyzing quantitative and qualitative user data” (p. 1810)

In their study, Gonzalez et al. (2014) highlight the researcher title with its competencies in analysis, interpretation, communication, rapid prototyping, interviews, and other research methods. At the same time, its skills in using visual tools were stated as average. In UXR, professionals enter with mainly social science degrees such as psychology, sociology, and anthropology. Also, some have computer science, information science, and systems engineering backgrounds,

highlighting their interdisciplinary nature (Gonzalez et al., 2017; Rosala & Krause, 2019).

There are still a few studies on content in user experience. In an article by Nielsen Norman Group, Kaley (2022) defined the profession as follows.

- **UX Writer:** Involves writing content that considers and meets users' specific contexts, needs, and behaviors.

Kaley (2022) also states that writing copy shares numerous skills with visual or interaction design; however, writers communicate with users throughout the experience using words instead of pixels. Regarding educational background, Rosala and Krause (2019) indicate that individuals specializing in content creation typically possess formal writing training acquired through an English, journalism, advertising, or communications degree.

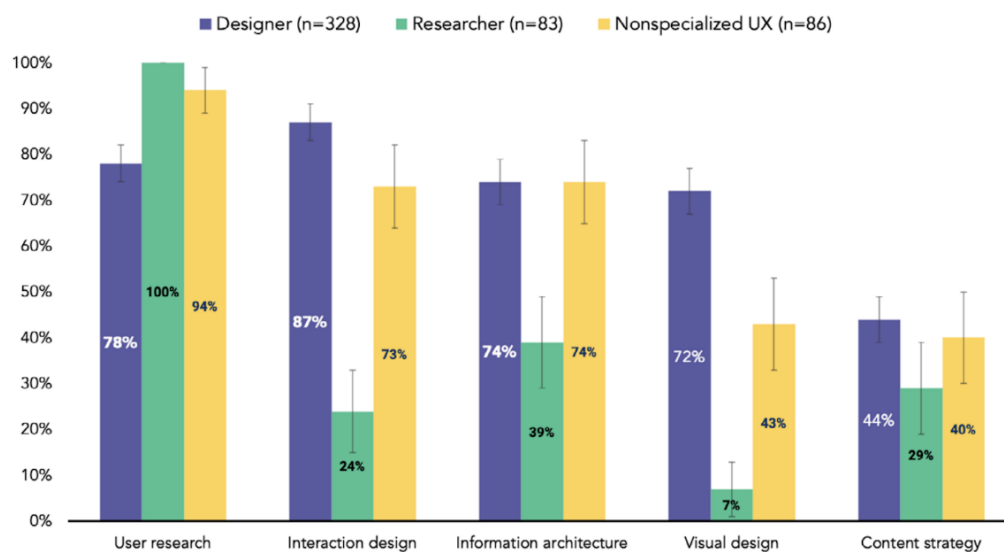


Figure 2.11. Percentage of respondents with UX responsibilities (Rosala & Krause, 2019, p. 19)

In the previous table (Table 2.2), Rosala and Krause (2019) examined the professional skills of the titles, which they grouped as designer, nonspecialized UX, and researcher. In Figure 2.11, the professional skills of the titles mentioned by the authors are examined under five main headings: user research, interaction design,

information architecture, visual design, and content strategy. Designers and non-specialized UX groups exhibit comparable performance across various categories. The most notable disparity arises in visual design, where designer titles demonstrate heightened proficiency. While the variance is less pronounced in interaction design, designer titles possess more outstanding expertise. Furthermore, non-specialized UX titles demonstrate superior performance in user research. Notably, the researcher group, characterized by a distinct skill set, achieves a 100% performance in the user research category but demonstrates relatively basic skills in other categories. Since content strategy shows a rate below 50% for all three groups, these titles need to be managed professionally.

2.3.3 UX Career Journey Shaped by Industrial Design Education

Regarding the relationship between industrial design and user experience, Morris (2021) states that the domains of industrial design and user experience exhibit a connection, with numerous industrial design graduates shifting their careers to UX. This transition is facilitated by the similarity in design processes, user-centered focus, and creative thinking between the two fields. Supporting his statement, Süner-Pla-Cerdà et al. (2021) point out that industrial design provides a solid foundation for transitioning into UX design. Comparably, Hamurcu (2014) indicates that the domain of industrial design, which emerged historically prior to the field of UX, shares specific characteristics with it, both in its practices for developing new products and in its exploration of the product-user relationship.

Assessing this situation within the industry context, Budd and Wang (2017) summarize the situation. The rapid growth of innovative technologies has also led to significant job opportunities. However, a high percentage of new jobs related to the design development of intelligent products necessitate a combination of skills and knowledge in the areas of design research, user studies, and user-centered design to enhance the user experience not commonly associated with either the technology-based disciplines like engineering and computing or the art-based disciplines such as

digital media. As a result, the field of industrial design has a distinct advantage and is uniquely positioned to take on the challenge of innovative technologies and products. In a study conducted in 2014, Hamurcu asked questions to understand why companies employ industrial designers in their UX departments. The companies' responses were analyzed as follows:

- User-centered design methods and tools, introduced in their educational journey, equip industrial designers with a user-centric approach to problem-solving.
- The ability to translate user data into meaningful design solutions through conducting user research empowers industrial designers to create products that align with user needs.
- Industrial designers excel in identifying problems and devising innovative solutions, pushing the boundaries of design thinking.
- Industrial designers can adapt to the field in a very short time.

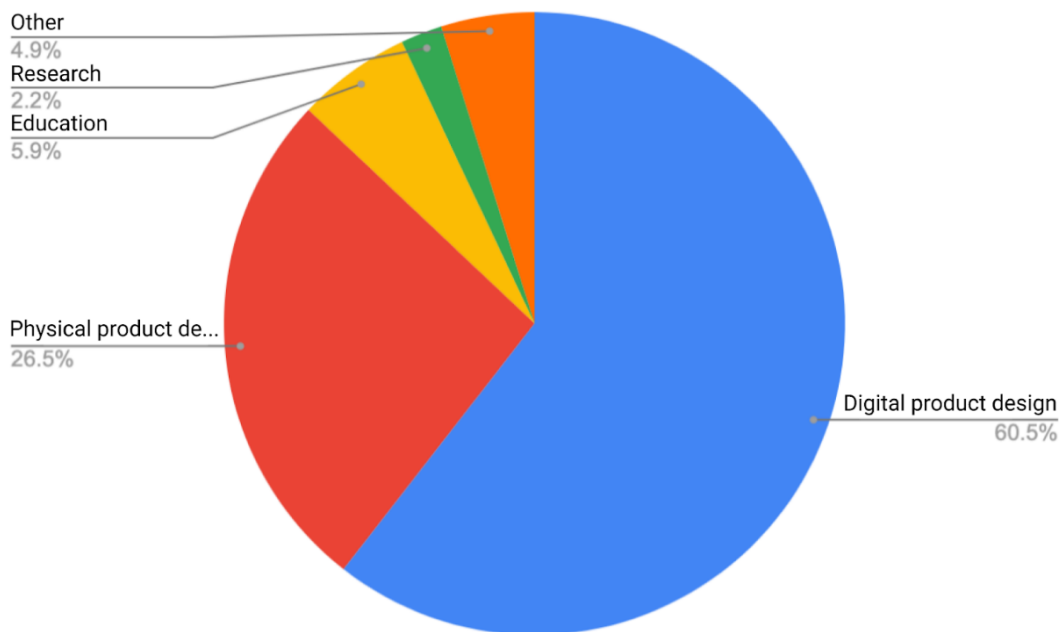


Figure 2.12. Design activity types of graduates between 2016 and 2020 (METU, Department of Industrial Design, 2023. Self-Evaluation Report, Unpublished)

The accreditation prepared by METU Industrial Design Department displays the data of 209 graduates and the design activities in which they worked between 2016 and 2020. Figure 2.12 reveals that 60.5% of industrial design graduates between 2016 and 2020 are employed in the rapidly expanding realm of digital products. The primary industries in which graduates find employment include information technology services, software services, digital game design, e-commerce, finance, communication, and business development services. Within these industries, industrial designers hold positions such as UX designer, UI designer, user experience researcher, interaction designer, service designer, and digital product designer. The accreditation also included the title distribution of 58 graduates out of 209 who worked in user studies in their profession, shown in Table 2.3.

Table 2.3. Roles of 2016-2020 METU Industrial Design grads in user studies (METU, Department of Industrial Design, 2023. Self-Evaluation Report, Unpublished)

Position	Count
User experience / User interface designer	24
User experience designer	19
User experience researcher	3
Interaction designer	2
Service designer	2
Experience architect	1
Interaction design senior analyst	1
Service and interaction designer	1
User interface designer	1
User experience consultant	1
User experience strategist	1
Customer experience designer	1
Gamification and experience designer	1

2.4 Working from Home During the COVID-19 Pandemic

In March 2020, numerous governments globally opted to implement measures aimed at limiting the mobility of their citizens to curb the ongoing transmission of COVID-19. Commonly referred to as ‘lockdown,’ these constraints involved the temporary shutdown of businesses deemed ‘non-essential,’ compelling millions worldwide to adopt remote work arrangements (Richter, 2020). Since this study intersects with the pandemic period, it is crucial to investigate the impact of the global health crisis that started with the spread of the virus on professionals’ experiences. As Al-Habaibeh et al. (2021) stated, the demand for remote work from home significantly rose in 2020/21 due to the COVID-19 pandemic. Consequently, individuals and organizations quickly train their employees and adopt online working methods, aiming to maintain the same level of productivity as in-office work. At this juncture, examining the definition of remote work and assessing this situation is crucial, focusing mainly on its implications during the pandemic. Di Martino and Wirth (1990) define the term remote work as follows: “a flexible work arrangement whereby workers work in locations, remote from their central offices or production facilities, the worker has no personal contact with co-workers there, but can communicate with them using technology” (p. 530). Wand et al. (2021) indicate that the current understanding of remote work primarily stems from a context where it was infrequently adopted. It was only acknowledged by specific individuals within an organization rather than being embraced universally or by most workers. Within the scope of this definition and approach from various authors, it is imperative to conduct distinct evaluations of remote work under typical circumstances and its distinctive occurrence during the pandemic. The obligation of working from home during this specific period requires a nuanced analysis. Accordingly, the ensuing section predominantly delves into the literature on working conditions, with a specific focus on the pandemic period.

The COVID-19 pandemic and subsequent lockdowns forced many office workers to embrace digital work, leading to the discovery of its numerous advantages (Richter,

2020). Al-Habaibeh et al. (2021) surveyed individuals engaged in remote work to identify the challenges and opportunities presented by this shift in work practices with 212 respondents. Figure 2.13 represents the software preferences of employees for communication prescribed by their employers.

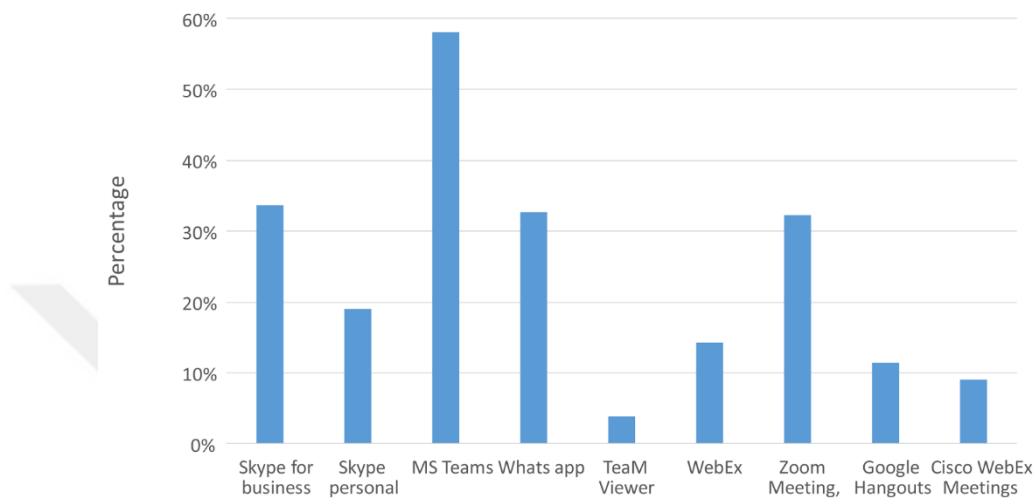


Figure 2.13. Software use for communicating during remote home working (Al-Habaibeh et al., 2021, p. 103)

The work culture is also transforming with the adaptation of online communication tools. Non-verbal communication through body language is absent in videoconferencing, and casual conversations before and after meetings are omitted (Jacks, 2021). Another aspect related to culture and communication, stated by Phillips (2020), is that remote teams need to consciously initiate and maintain social connections among colleagues, as these interactions are vital for building trust and fostering a positive work environment. Creating informal meeting opportunities can replace the organic conversations that often arise naturally in co-located teams, allowing employees to form genuine friendships and derive greater job satisfaction. While these social engagements are inherently beneficial, their occurrence in remote settings requires deliberate planning and execution. Moreover, Kossek and Lautsch (2018) point out that an unaccommodating work environment, health and safety regulations, and managerial apprehensions regarding trust and performance uncertainties also limit remote work's efficacy (as cited in Adekoya et al., 2022).

The COVID-19 pandemic has presented a distinctive context for comprehending the remote working experiences of employees, especially considering the mandatory directive to work from home (Adekoya et al., 2022). In the research conducted by Wang et al. (2021), remote work challenges and virtual work characteristics are explored. The challenges related to remote work involve the immediate psychological experiences of workers, encompassing task completion, interpersonal collaborations, and social interactions with family and friends. During the pandemic, four key challenges are identified in remote work: procrastination, ineffective communication, work-home interference, and loneliness. Additionally, the study identifies four virtual work characteristics—social support, job autonomy, monitoring, and workload—which define the nature of the job when performed remotely from home. Considering these challenges and characteristics, Figure 2.14 displays how an employee’s experience is shaped in remote work. These parameters and the effect of self-discipline as an individual factor result in employee performance and well-being.

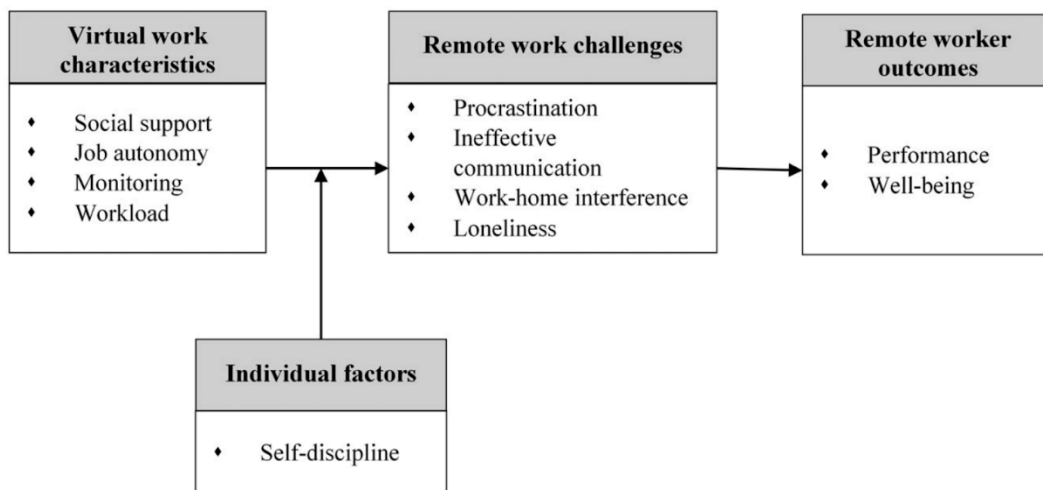


Figure 2.14. Employee experience chart in a remote working setup (Wang et al., 2021, p. 32)

While many employees perceived increased available time when transitioning to remote work, a more significant proportion encountered challenges. These difficulties stemmed from diverse factors such as managing responsibilities around

children not attending school, sharing a home office space with a partner, and facing obstacles in adhering to regular daily routines. The heightened frequency of video conferences and the absence of in-person interactions contributed to heightened stress and fatigue associated with working from home (Richter, 2020). In their previously mentioned survey, Al-Habaibeh et al. (2021) analyze the challenges of working from home during COVID-19 for each variable represented in Figure 2.15 and benefits of working from home during the COVID-19 situation represented in Figure 2.16. The research highlights prominent challenges in remote work, including issues related to communication, loneliness, physical activity, and environmental conditions, while commonly reported benefits encompass a reduction in the expenditure of time and money associated with commuting to offices, the ability to dress comfortably, and an increase in time spent with family.

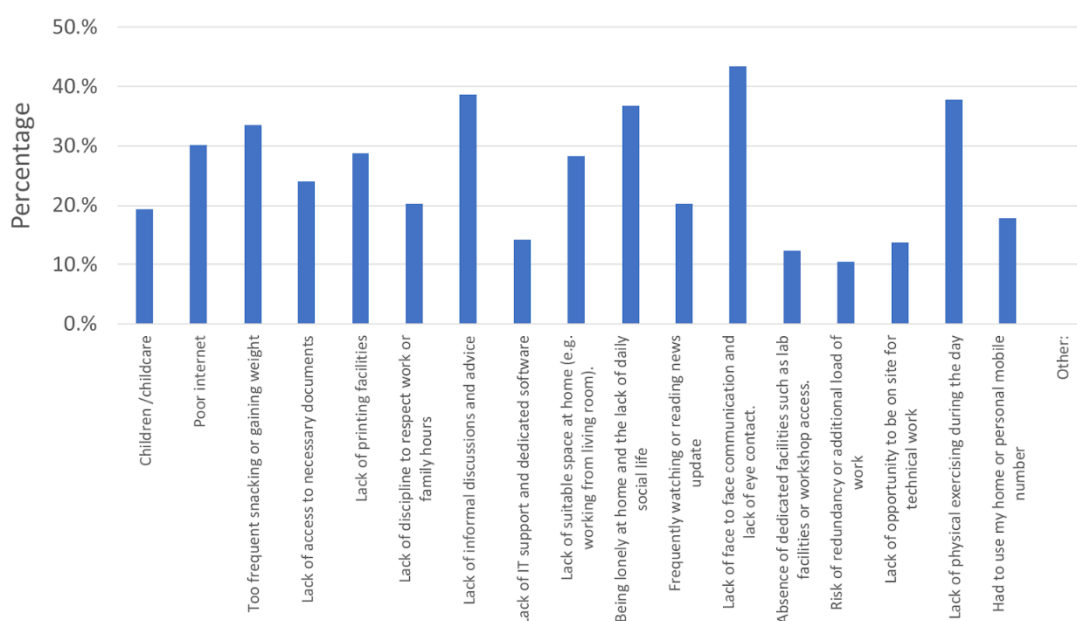


Figure 2.15. Work from home challenges during Covid-19 across variables (Al-Habaibeh et al., 2021, p. 104)

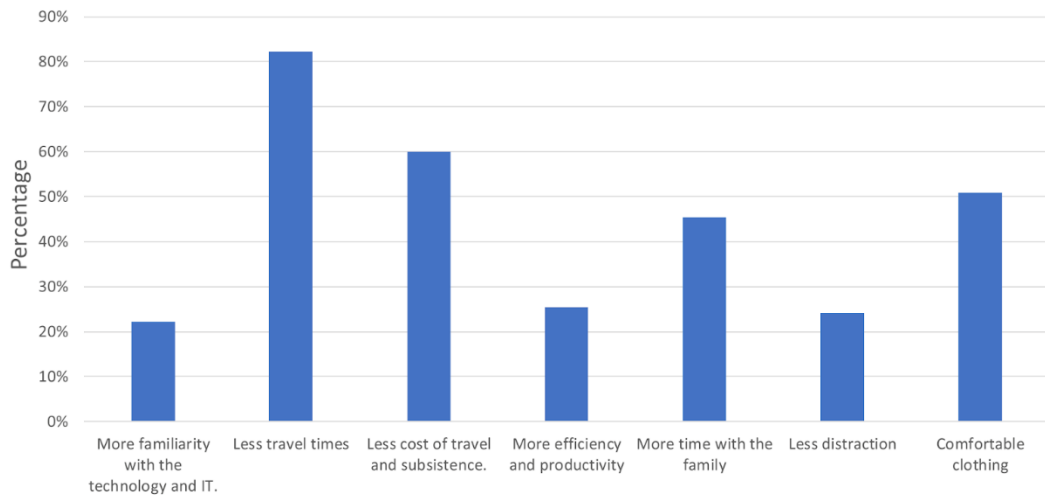


Figure 2.16. Benefits of working from home during Covid-19 situation (Al-Habaibeh et al., 2021, p. 104)

CHAPTER 3

METHODOLOGY

This chapter discusses the research method used throughout this study, which is the semi-structured interviews. In this chapter, the research approach will be presented first to clarify why this method is used. Then, details of the data collection phase, which consists of the design of the interview, the sampling method, and the process of conducting these interviews, will be explained. After data collection, the data analysis process will be mentioned, from transcribing the interviews to coding and analyzing the data. Before summarizing the methodology chapter, the limitations faced in the data collection process will be explained. Figure 3.1 illustrates the stages of the research process in the thesis, providing dates and information for each stage.

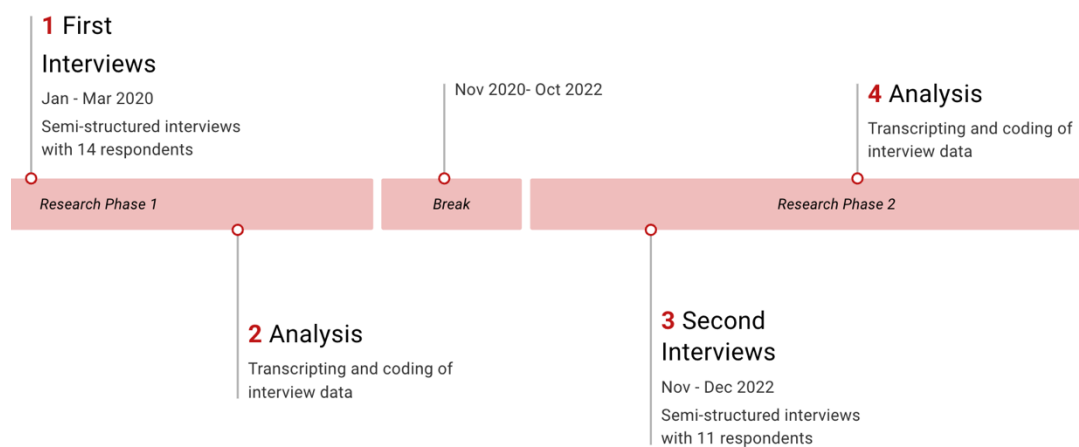


Figure 3.1. Timeline of the research

3.1 Research Approach

The present study used a qualitative research technique to address inquiries about personal experiences, interpretations, and viewpoints, often from the respondent's perspective (Hammarberg et al., 2016). According to Strong (1992), unlike

quantitative research, which seeks to answer the ‘how often’ question, qualitative research aims to answer the ‘what’ question, taking a holistic perspective that considers the complexities of human behavior instead of adopting a simplified approach to measure and count the occurrence of states or events (as cited in Black, 1994). In the sense of measurability, Hammanberg (2016) also argues that data gathered with qualitative research is usually not quantifiable or measurable. In line with Strong’s consideration, the focus of this study was not on measuring a subject but instead on analyzing the reflection of the complexity of human behavior in professional life. When qualitative research methods were narrowed down within the scope of this study, the semi-structured interview method was adopted. The method is utilized to elicit opinions on a specific subject matter or, in the case of key informants, to gather background information to cover specific topics while listening to the respondents’ stories (Hammarberg et al., 2016; Rabionet, 2011). To enrich the details in the stories of the respondents, ‘why’ and ‘how’ questions also benefited this research, in addition to the ‘what’ question mentioned above. The following section will present detailed information on the motivations for using the semi-structured interview method and its application.

3.2 Data Collection Methods

The research utilizes the semi-structured interview technique to gather information regarding respondents’ knowledge obtained during their undergraduate education, career orientations, professional life experiences, and observations. Alsaawi (2014) states that the semi-structured interview method, which involves pre-planned questions but allows for elaboration on specific topics using open-ended questions, is appropriate for researchers with a good understanding of their topic. In the present study, the semi-structured interview method is highly appropriate since the research is based on the author’s experiences and the sector in which she is situated. There are many sources in the literature on which situations of semi-structured interview technique will be helpful. In one of them, McIntosh and Morse (2015) state that the

semi-structured interview is utilized to gather individuals' subjective responses to a specific situation or phenomenon they have encountered. This type of interview can be applied in cases where there is enough objective understanding of a phenomenon or experience but a deficiency of subjective knowledge. Since this research requires an in-depth understanding of the respondents' choices and individual experiences in their career paths, it is critical to collect subjective data in the UX practice. Apart from the situations where the semi-structured interview is used, what should be considered in this type of interview is a separate issue that should be emphasized. In this regard, Adams (2015) indicates that the semi-structured interview is conversationally administered on a one-to-one basis, utilizing a combination of closed and open-ended questions. The interviewer may also pose follow-up queries in the form of 'why' or 'how' questions to further explore the interviewee's responses. On the same subject, Blaxter et al. (2010) explain that the semi-structured interview entails questioning or discussing topics with individuals to gather their insights and opinions.

Therefore, the semi-structured interview was considered the most suitable technique for gathering data on how respondents utilized their professional expertise in the UX practice, their perceptions regarding the discipline, and their experiences as industrial design graduates in this field due to the abovementioned reasons. During the study, the methodology was implemented while adhering to established guidelines outlined in the literature, including using relevant sub-questions to enhance questions, conducting individual interviews with each respondent, and creating a comfortable and conversational atmosphere to encourage discussion on various subjects. The following sections will elucidate the data collection procedure in further detail. The forthcoming sections will provide an in-depth account of the content and implementation of the interview methodology.

3.3 Design of the Interviews

According to the thesis progress, two different semi-structured interviews were applied in early 2020 and at the end of 2022. Before starting the interviews, approval was obtained from the METU Human Research Ethics Committee with the protocol number '471 ODTU 2019' (Appendix D). Each of these interviews will be elaborated on separately in this section.

The first interview consists of several open-ended questions with related sub-questions (Appendix B). Depending on the respondent's answers, the total number of questions in the interview varies between twelve and sixteen. The interviews were planned to comprehend multiple aspects of the respondents' journeys from their undergraduate education to their professional experiences and establish the basis for answering the research questions highlighted in Chapter 1. The initial phase of the interview focused on comprehending the respondents' approaches and professional interests during their undergraduate education and the factors that influenced their tendency towards this particular practice. In the next part of the interview, attention turned to the respondents' knowledge and expertise in the field of UX obtained directly in industrial design education or an event like a seminar and a workshop they attended as undergraduate students. Questions were asked to determine the use of design understanding and skills drawn during their bachelor's education in UX practice. This was followed by an investigation of transferring professional knowledge from their industrial designer background to their current role; the adequacy of industrial design education for the UX practice was also discussed with the respondents. As a part of the adequacy discussion, the interviewees were asked about the supporting outsourced training they enrolled in to improve themselves alongside their reliable source of professional knowledge. Following this, the conversation moved on to respondents' motivations for the career orientation expectations from UX practice and the probable reasons why this practice is so popular among industrial design graduates. After exploring the respondents' journey so far, the interview shifted toward the respondents' professional experiences and

observations as a specialist in UX practice. The respondents provided details about their current professional life, such as job descriptions, team structure, and work distribution, as well as their perspectives on colleagues from other disciplines compared to industrial design backgrounds. The first interview ended with an evaluating of the design methodology and outputs of industrial design and UX fields regarding similarities and differences.

After the first interview, the research process was interrupted, and the pandemic intervened. To analyze the data collected at the beginning of 2020 more efficiently in 2022, it became necessary to collect information about the experiences of the same respondents during the pandemic period. To bridge the gap, the second phase is to explore respondents' experiences during the pandemic in the past three years. At the beginning of the research study, fourteen respondents were contacted to participate in the interview. However, as the study progressed into its second phase, the number of respondents was reduced to eleven. This reduction may be due to being in an unpredictable situation that hinders their participation or a loss of interest in the study.

The second interview comprises a set of six open-ended questions that are accompanied by related sub-questions (Appendix C). There are two objectives for carrying out the second interview. The first was to gain a deeper understanding of the career progression and changes experienced by the former interview respondents over the last three years. To collect data on these objectives, the respondents were asked to share their career journeys over the mentioned period, with specific emphasis on their professional development, job changes, and promotions. The further objective of the interview was to elicit the thoughts and perspectives of the interviewees regarding their experiences as professionals in the UX practice during the pandemic period. Respondents were asked to describe the impact of the pandemic on their professional lives and teamwork, focusing on any challenges or opportunities during this period to accomplish the second objective.

By exploring these various aspects of the respondents' educational and professional journeys, this research aims to understand the factors that led industrial design graduates to pursue a career in UX field.

3.4 Sampling Group

The present study used judgemental sampling to select respondents based on predetermined criteria. As Marshall (1996) explains in his article, this sampling approach involves deliberately selecting respondents with the desired qualities or traits to address the research question effectively. This process is based on the researcher's understanding of the research field, relevant literature, and empirical evidence. It is a more nuanced approach compared to the typical demographic stratification found in epidemiological studies, though demographic factors such as age, gender, and social class may still be considered. Ultimately, this method aims to improve the quality and relevance of the study's findings by carefully selecting respondents who can offer valuable insights and perspectives. Therefore, to enhance the overall quality of the research findings, using judgmental sampling was deemed appropriate for this investigation, as it allowed for identifying respondents who were likely to provide valuable insights and perspectives on the topic of interest.

There were two main criteria to participate in the study. First, respondents had to possess a bachelor's degree in industrial design. Second, they needed to have work experience in the UX field. These criteria were essential for the study to examine the work experience of the respondents in the UX field after studying industrial design. While considering the first criterion, to ensure a diverse pool of respondents for the study, deliberate efforts were made to reach out to individuals who had obtained their bachelor's degree in industrial design from three different universities, each with a unique history and reputation within the field. The universities are, in alphabetical order, Istanbul Technical University (ITU), Kadir Has University, and METU. While ITU and METU are schools that have been observed to train many people in this field due to their teaching styles and technical university approach, Kadir Has

University has been the subject of the thesis study because it offers a master's program in user experience. Following the second criterion, the sectors and companies in which the respondents worked were carefully selected to ensure diversity. The companies' work areas encompassed digital products, including but not limited to banking and e-commerce, physical products, and consultancy. Furthermore, the cities of Istanbul and Ankara were chosen as the study sites due to the abundance of job opportunities in these regions. Respondents were contacted through LinkedIn. This approach was taken to broaden the range of experiences and perspectives represented in the study and to minimize potential biases or limitations that might arise from a more narrow respondent pool. Through this intentional effort to include individuals from various educational and professional backgrounds, the study aimed to offer a nuanced understanding of the topic under investigation. Details about respondents' information are summarized in Figure 3.2 and presented with pie charts. Apart from the abovementioned criteria, the study did not include individuals directly known to the author of the thesis to promote more natural and transparent communication. Instead, efforts were made to include respondents with at least secondary or distant contacts. This approach was taken to mitigate potential biases or power imbalances that might arise from closer personal connections and to foster a more open and collaborative research process.

As previously mentioned, this study was carried out with fourteen respondents. There needs to be definite information on the adequate number of respondents in a semi-structured interview, as described above. Onwuegbuzie and Leech (2005) state that while the number of respondents is sufficient to provide saturation in the data, it should also be at a level that does not create redundancy in in-depth analysis. If examples are given from a few studies in the literature to support this statement, Guest et al. (2006) suggest that 6 to 12 interviews may suffice to achieve saturation with a relatively homogeneous population. Similar findings are reported by Francis et al. (2010) and Marshall (1996), with numbers ranging from 13 to 15.

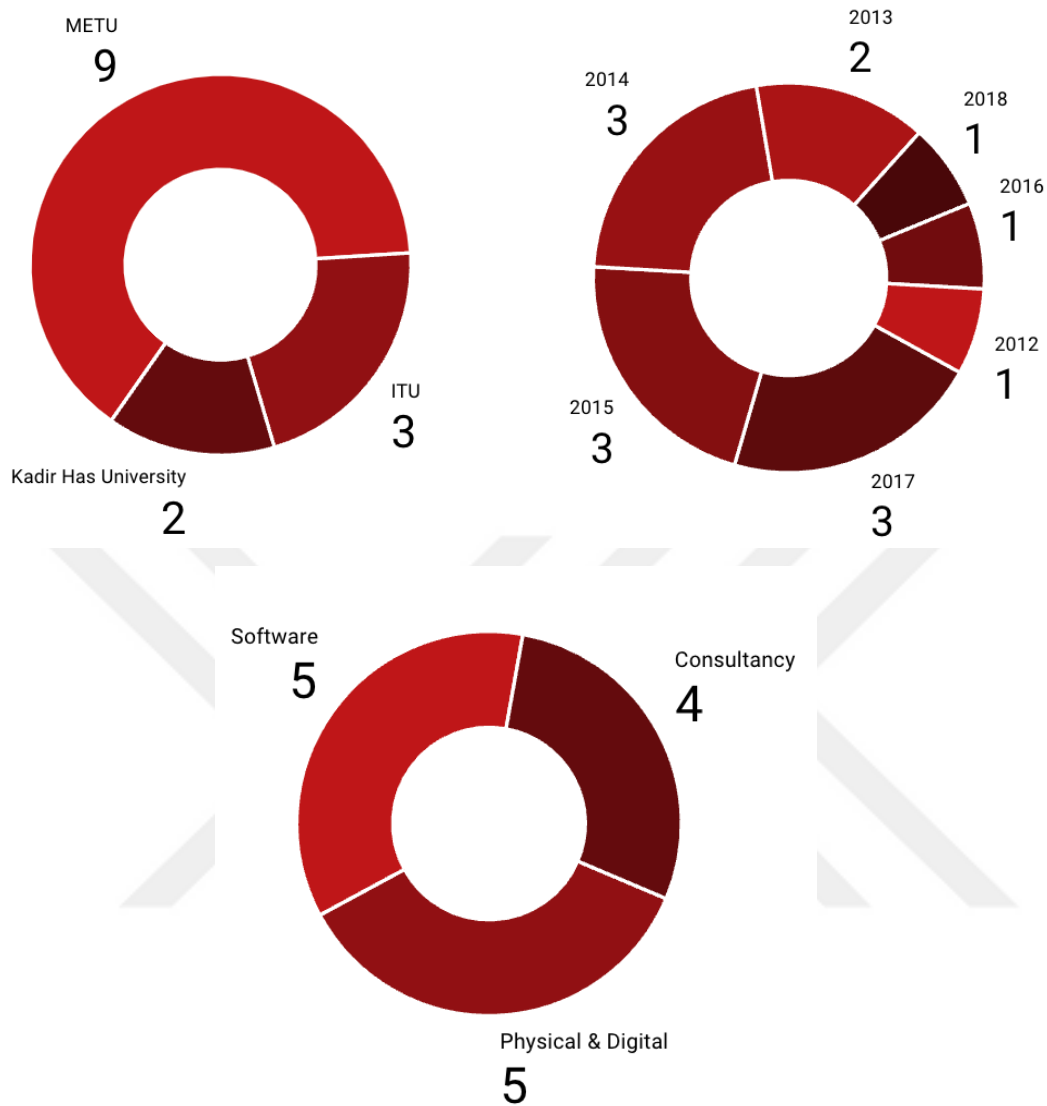


Figure 3.2. School, graduation year and sector distributions of respondents

3.5 Interview Procedure

The respondent group, selected through the judgmental sampling approach, was contacted through LinkedIn and provided a brief overview of the thesis. The possible respondents were asked to take part in the study voluntarily. Fourteen respondents, whose information is given anonymously in Table 3.1, responded to this invitation and were interviewed in the first phase of the study, conducted in early 2020.

Table 3.1. Respondent information included in the first interview phase

Respondent Number	Graduation Year	School	Job Title	Sector
R1	2018	METU	UX Designer	Healthcare Products
R2	2014	METU	UX Designer	Software (Cyber Security)
R3	2012	ITU	UX Designer	White Goods & Software (Cyber Security)
R4	2013	METU	UX Researcher	UX Consultancy & Software (E-Services)
R5	2017	Kadir Has	UX Strategist	UX Consultancy
R6	2015	METU	UX Designer	White Goods & Smart Products
R7	2015	METU	UX Designer/Researcher	Software (E-Services)
R8	2015	METU	Experience Designer	Software (Finance)
R9	2017	ITU	UX Designer/Researcher	UX Consultancy
R10	2017	Kadir Has	UX Designer/Researcher	UX Consultancy
R11	2014	METU	UX Researcher	Software (E-Services)
R12	2014	ITU	UX Designer	White Goods
R13	2013	METU	UX Designer	Software (Finance)
R14	2016	METU	Customer Experience Designer	Automotive

While face-to-face interviews were conducted with respondents in Ankara, online interviews were arranged with respondents in Istanbul and one respondent living abroad. Face-to-face interviews took place at various coffee shops or the offices where respondents work. Before the beginning of the interviews, respondents were

asked to provide informed consent (Appendix A), either by signing a form or via email in the case of online interviews. Audio recordings were taken during the interviews with the respondents' permission for later analysis. With the semi-structured interview technique, a set of questions ranging from twelve to sixteen were posed to the respondents during the initial round of interviews, lasting between 30 minutes to 1 hour, depending on how willing they are to talk, their working life, and how much they have experienced in their educational and professional lives. Details of the first interview phase process are summarized in Figure 3.3.

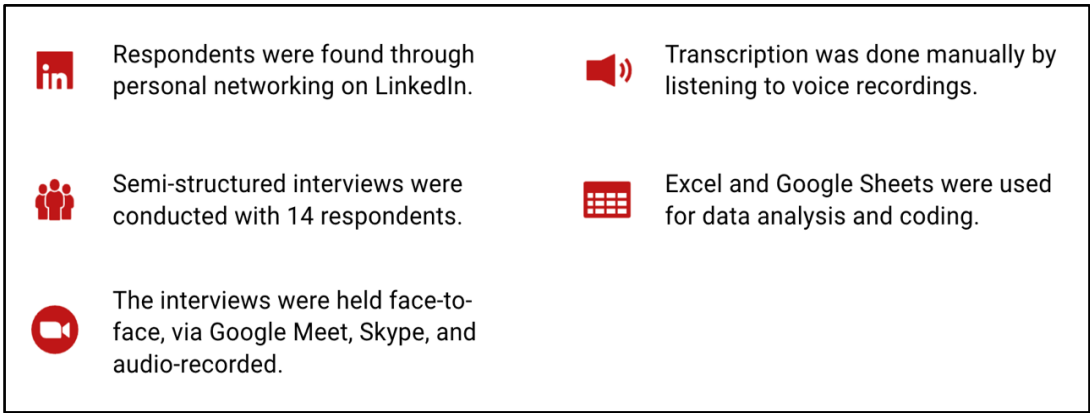


Figure 3.3. Details of the first interview phase

In the second interview phase, the same process was applied to eleven respondents, whose information is given anonymously in Table 3.2. The * symbol in the first column indicates respondents whose information was updated. The table shows that R8, R11, and R12 could not participate in the second stage. All interviews at this stage were conducted online, the updated work information of the respondents was noted, and questions were asked to understand their career development and work experiences during the pandemic. Details of the first interview phase process are summarized in Figure 3.4.

Table 3.2. Respondent information included in the second interview phase

Respondent Number	Graduation Year	School	Job Title	Sector
R1*	2018	METU	Co-Founder	Healthcare Products
R2*	2014	METU	Sr. Product Designer	Software (E-Commerce)
R3	2012	ITU	UX Designer	White Goods & Software (Cyber Security)
R4*	2013	METU	UX Specialist	Software (E-Services)
R5*	2017	Kadir Has	UX Research and Strategy Manager	Software (Finance)
R6	2015	METU	UX Designer	White Goods & Smart Products
R7*	2015	METU	Sr. UX Researcher and Product Designer	Software (E-Services)
R9*	2017	ITU	Sr. UX/UI Designer	Software (E-Services)
R10*	2017	Kadir Has	Sr. Interaction Designer	Software (E-Services)
R13*	2013	METU	Experience Design Lead	Software (E-Services)
R14	2016	METU	Customer Experience Designer	Automotive

 Semi-structured interviews were conducted with 11 respondents. They are the same respondents as in the first phase. Three of them could not participate due to personal reasons.	 Transcription was done using Sonix and Maestra programs.
 The interviews were held via Google Meet, Skype, and audio-recorded.	 Excel and Google Sheets were used for data analysis and coding.

Figure 3.4. Details of the second interview phase

3.6 Data Analysis

Thematic analysis, a qualitative data analysis procedure, was employed to analyze the raw data collected. Alhojailan and Ibrahim (2012) explain thematic analysis as a systematic approach that enhances the accuracy and complexity of data analysis, making it ideal for studies focused on interpretation and discovery. According to Saldaña (2013), codifying involves organizing and categorizing information systematically. In qualitative data analysis, coding applies repeatedly to identify patterns. This method allows grouping similarly coded data into categories or families, forming the basis for pattern recognition. The comparison and consolidation of significant categories lead to a transition from the concrete reality of data toward thematic, conceptual, and theoretical understanding. The process of codifying follows an ideal and streamlined scheme illustrated in Figure 3.5.

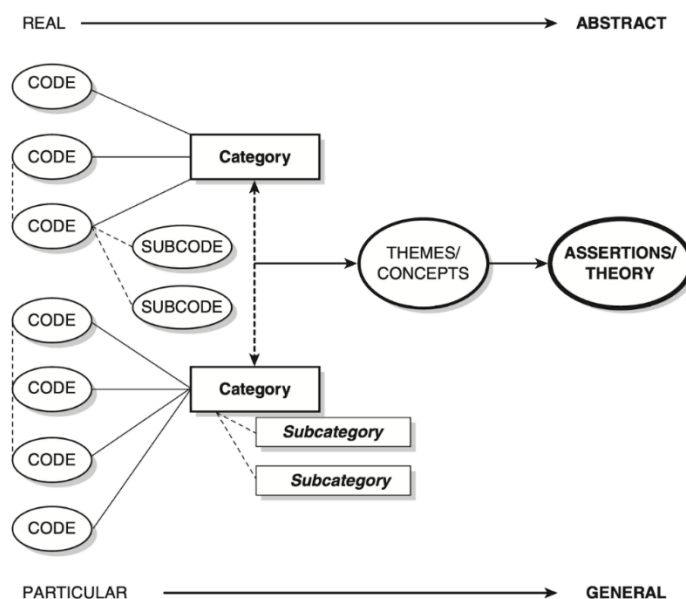


Figure 3.5. Codes to theory model for qualitative inquiry (Saldaña, 2013, p. 13)

It has been considered an appropriate analysis method, as this study tries to make sense of the data collected from the unique experiences of industrial design graduates in their careers in the field of user experience. The process's first step involved transcribing the interview's voice recordings into a Microsoft Word document. The

transcription process involved a combination of manual and automated transcription tools (Sonix and Maestra). As can be seen in Figure 3.6, the transcriptions were subsequently read multiple times to identify recurring patterns.

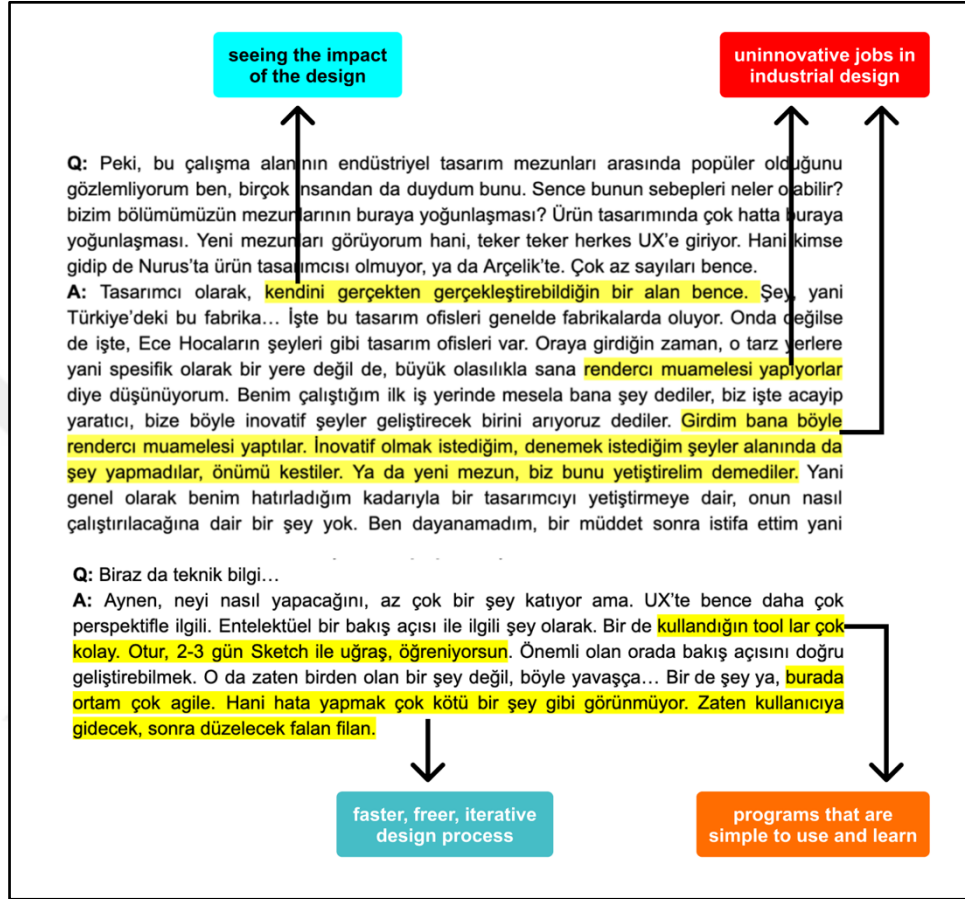


Figure 3.6. Identifying patterns through transcriptions in the original language

For the patterns in Word Documents to be transformed into codes, they are grouped under different subcategories according to their semantic integrity. Patterns touching on similar topics were then coded. An example of the analysis study on classifying the quotes as codes by listing them with the respondent number and creating subcategories of these codes is shown in the 'Interest in the UX Field' title example in Table 3.3. Category, subcategory and coding studies, which are the main data source of the analysis, were carried out manually using the Google Sheets application. As the study was conducted with Turkish respondents, the analysis

materials are presented in Turkish. However, in the Findings chapter, quotes are translated into English.

Table 3.3. Example analyzing table

Subcategory1.2. Interest in the UX Field		
P. Number	Quotation	Codes
R1	yeni bir trend	learning something new
R1	Çok az arkadaşım product designer olarak işe başladı	needs in the sector
R1	sektörün ne kadar büyük olduğunu, ne kadar talep olduğunu görebiliyorsun, bu da bu alana kaymak için sana bir motivasyon sağlıyor	needs in the sector
R1	arayüz kısmını da öğrenmek istiyordum.	learning something new
R1	iş imkanları da bence bahsettiğim gibi. Mezun olduk, piyasaya geldik ve baktık ki ürün tasarımcısı arayan yok. Bu da bizi çok yönlendirdi.	learning something new
R2	Tasarımcı olarak, kendini gerçekten gerçekleştirebildiğin bir alan bence	seeing the impact of the design
R2	Ya iş imkanı anlamında, çok daha gerçekten... bu da bir sebep. Ama mesela benim o zamanki tercihim yaparkenki şeyim "ben bu alanı denemek istiyorum" du.	learning something new
R2	UX tasarımın bilim olduğunu gösteren en yetkin alanlardan biri.	seeing the impact of the design
R2	Bir problemi bir ürünle, mümkünse fiziksel bir ürünle çözmemeye çalış çünkü bu sürdürülebilir bir şey değil. Onun için bir hammadde üretilecek, onun için işte fabrikaya girecek bir takım gazlar mazlar bir şeyler şey olacak. Enerji gerekecek, o olacak, bu olacak...	seeing the impact of the design
R3	daha bir kaymak tabakayla beraber çalışıyorsun. Yani bundan kastım şu, insanlar alaylı bile olsa kendini geliştirmiş, bir şekilde bir şeyleri yapmaya çalışan ve bir şekilde seninle aynı kafada olmasalar bile bir noktaya gelmiş insanlar. Yani bir şeyleri belki tartışabilirsin, belki konuşabilirsin ama iletişim kurmak için farklı bir yöntem deneyebiliyorsun.	working environment

Categories obtained as a result of the analysis process are motivations, knowledge and education, the status in the industry, and the COVID-19 pandemic. Categories and subcategories were filtered using Microsoft Excel during the coding process to express them in the Findings Chapter. The process described was made separately for the interviews made in 2020 and 2022, and these categories were created by combining the relevant data.

The initial category, motivations, encompasses the respondents' reasons for pursuing a career in the user experience field. This category is further delineated into three distinct subcategories, namely a comparison between fields, interest in user

experience practice, and awareness of the user experience field in accordance with the gathered data.

The subsequent category, knowledge and education, examines the respondents' professional knowledge, providing insights into their career choices before entering the UX field and during their professional journey. This category encompasses three distinct subcategories: method, tools, and skills from bachelor education, sense of competence in the user experience field, and professional information sources to adapt. These subcategories serve as analytical dimensions to explore the respondents' expertise and educational background within the user experience.

The third category, the status in the industry, focuses on the experiences and observations of the respondents within the UX and industrial design sectors throughout their professional careers. This category is examined through three distinct subcategories: demand in the sector, working conditions, and interdisciplinary teams in the user experience field. By exploring these areas, the category delves into the dynamics and interactions within the sectors, shedding light on the respondents' perceptions of disciplinary boundaries, collaborative practices, and the sector's overall approach to UX and industrial designers.

The final category, the pandemic period, seeks to comprehend the respondents' experiences within their professional lives during the COVID-19 pandemic and analyze them concerning their career choices. By exploring the challenges, adaptations, and decisions made during this period, the category aims to provide insights into how the pandemic has influenced the respondents' career journeys and professional decision-making processes.

CHAPTER 4

FINDINGS

This chapter delves into an analysis of the data acquired through semi-structured interviews conducted with 14 designers, all holding bachelor's degrees in industrial design and actively engaged in the field of user experience. The respondents selected for this study were drawn from three distinct universities, and their work areas spanned diverse sectors, including software development, consultancy services, healthcare products, intelligent products, white goods, and automotive design. Including respondents in the study from different sectors was intentional to ensure a diverse dataset to improve the findings' quality and scope.

Throughout the interviews, respondents were probed on various aspects of their professional journey, shedding light on their motivations, educational background, industry status, and the unprecedented impact of the COVID-19 pandemic on their work. The emphasis on these four key dimensions provides a nuanced understanding of the factors affecting industrial design graduates' work in the user experience field.

As this chapter progresses, the gathered data will be unpacked and organized into four main sections:

1. The motivations driving industrial design graduates to pursue a career in user experience will be explored.
2. The respondents' knowledge and educational experiences will be delved into, elucidating the factors that have shaped their expertise.
3. The status of industrial designer role within the industry will be examined in the third section, offering insights into the challenges and opportunities they encounter.

4. The impact of the COVID-19 pandemic on professional life will be navigated through, considering how the experiences and perspectives of these designers have been shaped.

Through this exploration, a picture of the dynamics within the industrial design and user experience sector will emerge, providing insights for academia and industry.

A notation (R+Number) was used when quoting respondents' answers. For example, if respondent 8 is quoted, (R8) will be written next to the quote.

4.1 Motivations

During the interviews, respondents were asked open-ended questions concerning their reasons and motivations for involvement in the field of user experience:

- Reasons behind their decision to engage in the user experience field.
- Engagement in this discipline throughout university education.
- Perspectives on factors contributing to the recent popularity of the UX field.
- Their expectations and motivations upon embarking on a career in this field.

Beyond the explicit queries, respondents also spontaneously cited the factors motivating them while responding to various other questions. Responses to these questions provided direct and indirect insights regarding respondents' involvement in the user experience field. Those who articulated their viewpoints on these matters approached the topics in three principal ways: comparing working in the field of user experience and industrial design, the aspects that captivated their attention within the realm of user experience, and lastly, familiarity with the field during their bachelor's degree education. This matter will be delineated from three viewpoints and further elaborated upon in the Motivations section, with the first topic detailed under 'Comparison Between Fields,' the second under 'Interest in the User Experience Field,' and the third under 'Awareness of the User Experience Field.' The narrative within these headings unfolds using codes that employ Saldana's methodology.

4.1.1 Comparison Between Fields

In delineating their motivations to embark on a career in the user experience field, respondents articulated their reasons through a comparative analysis of industrial design and user experience. The resulting subcategory, characterized by four distinct patterns derived from the comparative discussions in the interviews, underwent systematic coding and thorough analysis. The outcomes are presented in Table 4.1.

Table 4.1. Patterns for ‘Comparison Between Fields’

Patterns	Number of respondents
faster, freer, iterative design process	11
industrial design processes are tiring and limited	10
product design processes are very similar	6
programs that are simple to use and learn	2

First, the predominant pattern within this category was identified as a ‘faster and iterative design process,’ recurrently articulated by 11 respondents. In utilizing design processes within the user experience domain, notable observations indicate a predominant reliance on digital products. Respondents consistently expressed that the design process is notably simplified, expedited, characterized by increased agility, and more enjoyable when dealing with digital products.

1. “The environment here is very agile. Making mistakes does not seem like such a bad thing. It will go to the user anyway, then be fixed.” (R2)

Respondents also mentioned that working by producing design versions, preparing a prototype, and receiving feedback is faster.

2. “I can finish the feedback I received in the morning during the day, revise it, and present it back to the company. This is a great comfort.” (R1)

3. “Producing something digitally is much more practical than producing something physically. When making a physical mock-up, I sand styrofoam, cut wood, etc. I spend a lot of time with different materials. But you know, when we do this on a screen, in an hour, for example, while I can create 1 model for a physical product on that side, I can design many alternatives on the digital side.” (R7)

One of the frequently emphasized points was that the process was quite iterative. When easy production and iterative methods are combined with user data, one respondent explained his motivation to improve the product continuously.

4. “There is never a final product because there is always a problem, or you want to change something since it depends entirely on user feedback.” (R6)

Secondly, a repetitive pattern in the respondents’ answers is ‘industrial design processes are tiring and limited.’ Specifically, respondents viewed sketching, mock-up creation, modeling, and rendering as significantly more demanding and time-consuming than the design processes encountered in the UX field. Furthermore, respondents expressed concern that the physical product design process experienced in the industry would be more challenging and require greater accuracy than their academic training prepared them for. This disparity was perceived as a source of potential fatigue and frustration.

5. “Our product processes are pretty long: sketches are made, mock-ups are made, 3D modeling is done, etc. The product has to go through a long process until we receive it as a product.” (R7)

Another negative aspect highlighted by the respondents was the cost associated with iterative development in physical product design. Due to the reliance on concrete materials, prototyping with various versions was deemed significantly more expensive than the agile prototyping methods employed in user experience design, thereby limiting the freedom and flexibility of designers.

6. “The physical manufacturing of things takes a little longer, and the iteration is less in product design. It may not be possible to have the mold made 3-5 times and finish the product.” (R12)

There is an emphasis on the agile and iterative nature of user experience processes contrasted with the more restrictive and challenging aspects of industrial design processes. Nevertheless, respondents agreed that ‘product design processes are very similar’ in UX and industrial design, reiterated by six individuals. Despite respondents predominantly experiencing the product design process within the physical product design during their academic life, it is noteworthy that the design process consistently exhibits a uniform approach and motivation, irrespective of whether the resultant product is tangible or intangible. Respondents affirm that the nomenclature ‘industrial design’ does not enforce a discord or constraint regarding the nature of the final product.

7. “I don’t see design fields as very different fields. It just depends on what tools you choose to address the problem.” (R8)
8. “I believe the design process has no distinction between tangible and intangible. This industrial design training is a little more in the tangible part; traditionally, it gets stuck there.” (R5)

Moreover, respondents expounded that the product design process initiates with problem identification, including product development practices tailored for a specific user group, inherently incorporating user experience considerations within the procedural framework. Consequently, respondents asserted that the UX is a part of this process, and the design is already made with this in mind.

9. “When doing product design or UX, you must start with research. You need to know who this person is. Secondly, it is necessary to learn what this person's behavior is and what he is prone to. In both cases, you need to do this research. If you want to design a good product, it is like God’s command, so you must do it.” (R10)

Lastly, while less frequently reiterated than other findings, the ‘programs that are simple to use and learn’ pattern emerged as a motivation highlighted by respondents in their comparative assessment of the two fields. The proficiency in three dimensional product design acquired in the industrial design department often transforms two dimensions in the context of user experience. Moreover, respondents noted a substantial reduction in the complexity of digital design tools in transitioning to the user experience field.

10. “I mean, I really didn’t have any difficulties the first day I opened Sketch (One of the design tools used in the UX field, like Figma and Adobe XD). Learning the program was extremely easy for me.” (R7)

4.1.2 Interest in User Experience Practice

Respondents provided insights into the reasons underpinning their interest in this domain by articulating their motivations for entering the user experience field subsequent to their studies in industrial design. This interest was sparked for specific individuals before their transition, whereas others gained awareness of factors that fortified their motivation to persist in the user experience field following the transition. The interviews revealed seven distinct patterns, as outlined in Table 4.2, collectively influencing the subcategory.

First, repeated by eight respondents, the prominent influencing factor identified was the ‘needs in the sector.’ Predominantly, respondents recurrently highlighted that while the demand for industrial designers in the sector remains relatively low, many vacancies exist in companies for roles associated with user experience. Furthermore, it has been noted that, in addition to the limited availability of job postings for industrial designers, the number of companies offering positions under this title is quite limited.

11. “Instead of saying “I could be a UX designer,” I thought “I must be.” Then, I realized that all the job ads and everything is about this field, market and working conditions are good. I said, then let’s become a UX designer.” (R13)
12. “This is a trending profession.” (R11)

Table 4.2. Patterns for ‘Interest in the User Experience Field’

Patterns	Number of respondents
needs in the sector	8
career opportunities	7
seeing the impact of the design	7
design scope and processes	6
working environment	8
learning something new	4
better salary	3

The respondents concurrently hold the perspective that their professions necessitate alignment with the evolving digital landscape in tandem with advancing technological developments.

13. “The world is already going digital. It is a physical product, for example a mobile phone, but we do everything through an interface and application. Therefore, wanting to design something with a digital component rather than that physical product.” (R7)

Second, closely tied to the industry’s demands, the factor of ‘career opportunities’ also stands out as a significant consideration, repeatedly emphasized by seven respondents. They perceived the abundance of job postings on platforms like Kariyer.net and LinkedIn as advantageous for their career advancement. This circumstance is attributed to the multitude of options available to them when faced

with workplace dissatisfaction, a desire for improved conditions, or the prospect of encountering more favorable opportunities.

14. “It didn’t happen here, can it happen here or there... The facilities there are better... etc. In fact, it is also an increase.” (R13)

Drawing from their professional observations, respondents noted that their colleagues in the user experience field tended to attain higher titles, such as senior and lead, at a more accelerated pace compared to those in industrial design. Some respondents regarded working in the user experience field as a distinct career focus and a strategic step toward their plans to settle abroad, given the widespread global popularity of this field of study.

15. “I will be able to go abroad more easily and it will be a new and rising field of work.” (R11)

Following this, the ‘observing the impact of design’ pattern was highlighted, aligning with the aforementioned one, and standing out as a significant motivator for respondents’ engagement in the user experience field. In this context, all respondents expressed satisfaction in witnessing the tangible impact of their designed products on addressing genuine problems, their successful resolution, and the actual presence of these products in the market with real user interactions. Consequently, some respondents noted an increase in their professional satisfaction due to these circumstances.

16. “It is actually a product that people use in real life. And when you solve a problem and see that a person is able to do their job well, it definitely boosts morale and motivation.” (R11)
17. “I want to see it actually produced, to see people using it, to see people being happy and satisfied with it while using it. That’s why I think it is more for me.” (R12)

The pattern denoted as ‘design scope and processes’ encapsulates respondents’ perspectives, emphasizing the need for designers to assume a more adept role in user

experience design processes. This includes the recognition that tasks are not predetermined, the work is conducive to problem discovery, and there is a heightened opportunity for collaboration with users. Six people mentioned these issues, emphasizing that they find these aspects interesting in their work.

18. “I want to solve problems, so I want to go to a field where I can explore the problem.” (R7)

19. “It was important to be able to do research in a more practical sense, by going deeper and deeper into the research topic, with the user.” (R9)

Subsequently, the ‘working environment’ pattern, raised by eight respondents, revolves around aspects related to the physical characteristics of workplaces and social interactions within these settings. Respondents express a preference for working in modern offices or plazas and engaging with their university graduate colleagues, as opposed to functioning as industrial designers in a factory and communicating primarily with technical staff such as carpenters or machinist.

20. “Rather than working in a factory, it feels like an office environment, where there are software developers, different designers, where you can communicate more strongly with people.” (R7)

21. “Software companies become a place where you feel like you belong much more, people are much more intellectual. The more you can talk and understand each other... Well, you see serious differences in communication, even in terms of gender. It is like an environment you belong to.” (R2)

Thereafter, given that user experience is a dynamic and interdisciplinary field with evolving trends, necessitating ongoing user interaction, respondents regarded the ‘learning something new’ pattern as a captivating aspect.

22. “Being in contact with people through my job and learning things about people.” (R4)

Finally, respondents expressed the belief that professionals working in the user experience field receive a ‘better salary’ than industrial designers, a perception supported by their firsthand observations.

23. “I am thinking they pay around 3K in industrial design, but it could be as much as 5K here. That’s what I believe, at least.” (R2)

4.1.3 Awareness of the User Experience Field

The respondents were asked directly whether they were aware of the existence of the UX field during their student years or when they recently graduated. The examination and coding of interviews revealed six distinct patterns, as outlined in Table 4.3, influencing the subcategory.

Table 4.3. Patterns for ‘Awareness of the User Experience Field’

Patterns	Number of respondents
course/internship impact	5
awareness in erasmus experience	4
guidance of others	4
sector analysis	3
associate with service design	2
unaware	5

Initially, the pattern of ‘course/internship impact’ is recurrently articulated by five respondents. Noteworthy aspects encompassed within this category include immersive engagement with end-users throughout the graduation projects, exposure to the entire product development process, integration of digital components within the organizational context of the graduation project, and participation in an internship within a company concurrently engaged in user interface design integrated to

physical products. These specific encounters are explicitly cited by respondents as pivotal instances contributing to an elevated understanding and recognition of the user experience domain. Furthermore, the ergonomics course emerges as an additional factor that significantly contributes to respondents' cognizance during their bachelor's degree.

24. "During my graduation project, I spent most of my time with users." (R8)

25. "I did my first internship at Arçelik on user interface design." (R12)

The second observed pattern, 'awareness in erasmus experience,' emerged in the responses of four respondents. All four respondents had engaged in the erasmus exchange program at TU Delft. While two of them distinctly expressed a notable impact stemming from the interaction design department/course, not all respondents provided information into this facet. Their thoughts highlighted that going abroad for studies made them more aware, especially in seeing how industrial design connects with digital products. They also emphasized that learning about interaction and research is crucial in the field of product design.

26. "I went to Delft with the exchange program and there I learned the digital side of our profession. Interaction design, service design, user experience design... I saw how essential research really is in the course I took in the Netherlands." (R7)

Another influential factor fostering awareness among respondents is the guidance received from individuals already established in the user experience field. These mentors include well-known designers who are followed in the industry, peers from academic institutions, and university professors. As graduates familiarize themselves with the nuances of the user experience sector, they enhance their engagement with professional networks, contributing to an increased representation of industrial design graduates in this specialized domain.

27. "One of my teachers guided me. Well, I guess she probably knew or noticed that I was also interested in something like this. She said there is a search at

Arçelik, would you be interested, and I said I would be interested. That was the beginning of an internship.” (R12)

28. “Since my other friends all started working in the UX field, we started to exchange information with each other.” (R1)

Like the aforementioned pattern, the ‘sector analysis’ enabled the respondents to create self-awareness through interpersonal influences. The distinguishing feature lies in the absence of a singular instigator or guide; rather, individuals independently recognized the prominence of the user experience field, prompting them to independently develop an interest and engage in research within the user experience sector.

29. “I knew people working in the UX field, graduates of our school. Here are people working at Userspots, etc. You know, when I saw the work, they were doing, it attracted my attention.” (R6)

The ultimate factor contributing to respondents’ heightened awareness was ‘associate with service design.’ Respondents interconnected the disciplines of user experience and service design, utilizing their knowledge and enthusiasm for service design as a facilitator in navigating their transition into the user experience field.

30. “While I was wandering around trying to get more into service design and do something, I saw Userspots’ intern ad.” (R3)
31. “Service design, for example, was something that interested me a lot, especially since the end of my third year at university.” (R5)

In addition to respondents detailing the evolution of their awareness, five individuals conveyed that they were not aware of the user experience field during their student years and did not make a conscious decision to switch to this discipline. One respondent expressly attributed this unawareness to the absence of a dedicated course within their department, while another articulated a general lack of guidance on the practical application of their education within the user experience field.

32. “It wasn’t something I made many career plans for, and my career path wasn’t something I had ever dreamed of. I can say that it developed a little by chance.” (R4)

4.2 Knowledge and Education

Throughout the interviews, respondents answered open-ended questions about the specifics of their industrial design training. They delineated how this training has proven advantageous in their professional endeavors within the user experience field. Inquiries were directed to respondents on the following topics:

- Preferences for self-improvement using external resources.
- The sense of adequacy or inadequacy fostered by undergraduate education.
- Application of knowledge and skills acquired during undergraduate education.
- Comparing industrial design and user experience roles across design, processes, and final products.

This subject will be examined from three perspectives and expounded upon in the forthcoming Knowledge and Education section. The initial topic will be addressed under ‘Methods, Tools, and Skills from Bachelor Education,’ focusing on acquiring knowledge and skills during undergraduate studies. The second perspective will be explored in the ‘Sense of Competence in the UX Field’ section, where respondents’ perceived proficiency in the user experience domain will be discussed. Finally, the third viewpoint will be covered in the ‘Professional Information Sources to Adapt’ segment, examining respondents’ utilization and adaptation of professional information sources. The analysis under these headings utilizes codes based on Saldana’s methodology.

4.2.1 Methods, Tools, and Skills from Bachelor Education

Respondents were directly questioned about integrating design methods, skills, or technical tools from their industrial design education into their current professional roles. While addressing various queries, some respondents highlighted the practical implications of their educational achievements in their professional lives. The coding and analysis of the interviews unveiled six patterns, outlined in Table 4.4, collectively shaping the subcategory.

Table 4.4. Patterns for ‘Methods, Tools, and Skills from Bachelor Education’

Patterns	Number of respondents
user research & testing	11
user-centered design	8
problem-solving & questioning	6
design thinking	5
ideation	6
presentation skills	2

The predominant pattern in this category emerged as ‘user research & testing,’ garnering a higher frequency compared to the remaining five patterns. Reiterated by eleven individuals, it primarily encompassed the utilization of prototype development to gather user information, engage in research, and test ideas. Noteworthy methods explicitly mentioned included persona creation, interviewing techniques, netnography, ethnography, snowballing affinity mapping, paper prototyping, tree testing, and card sorting. Some respondents noted that while they were not familiar with these methods by name during their student years, they occasionally employed them in their projects.

33. “I learned how to access information through industrial design education, which I think is a skill you need very much in user experience design and

design. Because you can't really know everything. You cannot know every user, nor can you assume everything.” (R6)

34. “Maybe you didn't know a method like tree testing or card sorting, you don't know it by name, or you don't know how to do it theoretically. But we used it in our own project.” (R7)

‘User-centered design,’ reiterated by eight respondents, prominently surfaced as a significant aspect of respondents’ educational experiences. They highlighted the acquisition of usability knowledge in their department, the insights gained from ergonomics courses, and achievements in user-oriented or human-oriented design as key components encapsulated within this thematic pattern.

35. “We are talking about usability on the screen, its basis is ergonomics... We are already learning its lesson. ... I actually felt like the lessons we took were filling the foundation of this profession.” (R7)
36. “At least in our minds we have a narrow idea of the user’s existence. In other words, as the creator of a product, we are more prone to the idea of a user than the idea of a computer engineer. Therefore, as graduates, we may be prone to user experience because of that predisposition and because our perspective is at least prepared for it.” (R4)

Concerning ‘problem-solving & questioning,’ six respondents expressed the significant impact of problem-solving oriented design processes acquired during their training on their effectiveness in the UX field. Moreover, they emphasized the importance of decisions within the design process having strategic reasoning, advocating for a perspective that asks ‘why’ strategically rather than solely from an artistic standpoint when addressing challenges. The deliberate approach of posing questions was identified as a valuable outcome by the respondents.

37. “Designers approach the problem a little more systematically. I can say that he is really trying to get to the heart of the problem and solve it in a more systematic way.” (R12)

The ‘design thinking’ method, a common approach in the user experience field, was underscored from five respondents. They expressed a heightened sense of competence through their extensive engagement with the foundational processes of this methodology, namely understanding, exploring, and materializing ideas. Additionally, the culture of receiving feedback on design concepts, closely linked to the testing phase within the design thinking methodology, emerged as a noteworthy aspect according to respondents. In connection to design thinking, and explicitly as a step within this methodology, ‘ideation’ was mentioned by six respondents. This method is incorporated into the study as a discernible pattern.

38. “We were using the design thinking methodology... What we call design thinking is, define the problem, research, produce a solution, then prototype and test. In fact, it was something we practiced at school, too.” (R9)

Finally, ‘presentation skills’ touches upon a noteworthy aspect, although it was only brought up by two respondents. The ability to effectively communicate a design concept to team members or decision-makers, with a strategic emphasis in the appropriate areas, emerged as a crucial skill highlighted by respondents. Their confidence in this skill is rooted in their four-year experience in preparing project materials and delivering presentations to juries.

39. “You can make a product very well, but unless its presentation is good, that product may not be well received. Visualizing it, choosing the right words in the narrative, or internalizing it and presenting it to the public is truly as valuable as the product. And as designers, we benefit greatly from the education or practicality we received at school when it comes to selling our products in business life.” (R9)

4.2.2 Sense of Competence in the User Experience Field

Questions were posed to the respondents to evaluate their perceived competence upon entering or engaging in the UX field. Respondents shared insights into the skills

they considered strengths, as well as areas where they perceived a lack of competence or opportunities for improvement. The analysis and coding of interviews unveiled six patterns, detailed in Table 4.5, collectively shaping the subcategory.

Table 4.5. Patterns for ‘Sense of Competence in the User Experience Field’

Patterns	Number of respondents
product design process knowledge	7
feeling familiar but inadequate	6
industrial design education provides a basis	7
lack of jargon	6
user focus	5
digital domain ignorance	3

Gaining knowledge in the product design process over four years of industrial design education contributes significantly to a sense of professional competence, as emphasized by seven respondents. While acknowledging that familiarity with the product design process alone may not meet the requirements for roles in the UX field, respondents widely believe that it positions industrial design graduates as highly advantageous candidates for such positions. Some of them view this as entirely satisfactory, asserting that the product design process remains consistent across both fields, with only a shift in the medium through which the design materializes.

40. “Since we receive training for designing a physical product, there is literally no perception that when I study industrial design, I can also do user experience design. So, but it is very similar in process. It is actually a design process. So, I think working as a user experience designer becomes a little easier when you master the basic design process.” (R14)

41. “I am an industrial design graduate, I did not think about whether they would accept me as a user experience designer. We use another delivery tool instead of Rhino, all processes are the same. I did these in my graduation project. I came with this diploma.” (R8)

While gaining expertise in the product design process positively influences respondents’ proficiency, a recurrent theme of ‘feeling familiar but inadequate’ emerged, highlighted by six respondents. For some of the respondents, this situation is linked to the dynamic evolution of the UX field, while others attribute it to the department’s education being overly centered on physical products. Additionally, they expressed that although their industrial design education provided fundamental knowledge, they perceived a significant gap in practical application.

42. “Of course, only industrial design education is not enough, but I think there must be a design education. This is how much of this job we can say, I think 50% of this job is about having a design education.” (R12)
43. “None of us have enough knowledge. We cannot expect it to be sufficient because it is something that transforms and develops very quickly.” (R2)

Evident in the initial two patterns, ‘industrial design education provides a basis’ emerges as a significant idea, reiterated by seven respondents. It has been emphasized that the education received in the department furnishes respondents with a strong professional foundation, which they subsequently mold according to the requirements of their work. Achieving familiarity with usability concepts, understanding design principles, and experiencing the product design process are notable accomplishments frequently highlighted. The fact that industrial design education provides a basis supports the first two patterns specifically for these achievements.

44. “I think it is very easy for the industrial designer, when she separates herself from certain things and passes through a certain filter, it is a background that she can easily hold onto and be successful in.” (R5)

45. “In general terms, I think the training provided is sufficient for the beginner level. After I started working, I did not experience any problems such as what are these terms, how will I do research on the user, what conclusions will I come to, and how will I improve the user experience.” (R1)

The concern of ‘lack of jargon’ was raised by six respondents. They pointed out that the methods they learned in the department were named using specific terminology in the user experience field and presented in a more sophisticated manner. After transitioning to the field, many respondents discovered that the unfamiliar terms were actually methods they were already familiar with and had used.

46. “There was a problem with professional jargons, then what is this, what is that, what is html etc. As an industrial designer, I would actually encounter something similar when changing sectors such as from furniture to white goods.” (R13)

‘User focus,’ reiterated by five respondents, emerges as another beneficial aspect. Acknowledging the user as a crucial stakeholder in the design process, possessing empathetic skills towards the user, adopting a user-oriented mindset, and conducting user research were cited as accomplishments that enhance the competencies of industrial design graduates in the user experience field.

47. “We actually have the ability to empathize, and this way we understand the user more easily. In this way, we can establish that connection well and deliver the results to the solution well and quickly, in research studies.” (R9)

Lastly, while only a few respondents brought it up, the matter of ‘digital domain ignorance’ and the predominant focus of industrial design education (at the time of the respondents’ graduation) on physical product design were highlighted as drawbacks affecting professional competence.

48. “I have a product design background, but the area I am currently working in is a web domain. I do my job on digital products. Therefore, I was not very equipped in that sense.” (R11)

4.2.3 Professional Information Sources to Adapt

Respondents were requested to share the resources they employed for self-improvement in the user experience field or, if applicable, to enhance skills they felt were lacking or insufficient in their professional journey. As outlined in Table 4.6, the examination and coding of interviews revealed five distinct patterns in this subcategory.

Table 4.6. Patterns for ‘Professional Information Sources to Adapt’

Patterns	Number of respondents
online articles	10
workshops & events	7
universities	3
books	2
online courses & certification programs	2

First, the predominant resource choice in this category was ‘online articles,’ highlighted by ten respondents. Respondents referred to articles published by dedicated design platforms like the IDEO, IDF, and Nielsen Norman Group, as well as literature on human-computer interaction. Additionally, articles from valuable accounts on the Medium platform were also cited.

Secondly, ‘workshops & events’ were identified as critical professional development resources, receiving mention by seven respondents. Notably, the UX Camp training program, provided by the Userspot company, emerged as a prominently referenced option. Subsequently, the UX Alive conference garnered attention, with respondents highlighting the conference and its associated workshops as valuable resources that they actively followed and engaged with. While design hackathons and the Global Service Jam (a non-profit volunteer organization dedicated to advancing service

design and customer experience) were mentioned less frequently than the options above, they were still acknowledged as valuable sources for improvement.

Subsequently, within the ‘universities’ pattern, respondents explicitly highlighted opportunities for self-improvement, including pursuing a master’s degree at TU Delft and completing the online course ‘Thing Centered Design’ offered by the same institution. Additionally, they identified the semantic course, deemed beneficial for user experience research, and emphasized the importance of selecting a research topic aligned with the user experience field during their master’s education as valuable avenues for enhancement.

Furthermore, opting for ‘books’ as a source for personal development, two respondents specifically cited Don Norman’s ‘The Design of Everyday Things’ and ‘Don’t Make Me Think.’ Though not specifying titles, respondents expressed a general engagement with books on the subject.

Regarding the ‘online courses & certification programs category,’ one respondent mentioned taking courses on the Udemy platform but found them less beneficial. In addition, another respondent favored IBM’s certification programs.

4.3 Status in the Industry

Throughout the interviews, several inquiries were conducted to comprehend the professional dynamics encountered by the respondents within the field of user experience. Inquiries were directed to respondents on the following topics:

- Investigating prior experience in industrial design or user experience
- Exploring team dynamics and assessing diversity of discipline and background within teams
- Observing professional approaches of industrial design graduates in teams.
- Examining perspectives on working with industrial design graduates in the absence of background diversity
- Identifying roles undertaken by a single designer without team

This subject will be examined from three perspectives and expounded upon in the forthcoming Status in the Industry section. The initial topic will be addressed under ‘Demand in the Sector,’ delving into the industry’s requirements for industrial design and user experience roles. It will specifically examine the distinctions brought about by holding a degree in industrial design. The second perspective will be explored in the section titled ‘Working Conditions,’ analyzing the physical and social aspects of workplaces and the contextual factors influencing the practice of the profession. Finally, the third viewpoint will be covered in the segment titled ‘Interdisciplinary Teams in the User Experience Field,’ which investigates the advantages or disadvantages conferred by the respondents’ educational background and the department from which they graduated on their experiences working in the user experience field. The analysis under these headings utilizes codes based on Saldana’s methodology.

4.3.1 Demand in the Sector

Respondents were not explicitly queried about their perspectives on job opportunities within the sector. Rather, discussions about motivations and working conditions prompted respondents to spontaneously express their thoughts on these matters. Despite being consistent with the theme of ‘Motivations,’ this section, delving into the respondents’ reasons for entering the user experience field, was considered more appropriately placed under the heading ‘Status in the Industry’ for a more precise representation. The coding and analysis of interviews identified three distinct patterns detailed in Table 4.7, collectively shaping the subcategory.

‘No demand for industrial designer,’ repeated by five respondents, underscores the notion that the sector exhibited minimal demand for industrial designers during the years when the respondents completed their education (2012-2018). Furthermore, it is widely believed that those who secure positions as industrial designers face limited opportunities for career transitions due to the scarcity of job openings, as only a few companies tend to hire professionals with an industrial design background.

49. “For example, I can change jobs a lot. But my industrial design friends do not have such a chance. If people are not happy in the environment they work in, they cannot find a place to relocate.” (R3)
50. “Why did I and my period switch to this? Because there really is no future on the other side, unfortunately the end of the road is in sight.” (R13)

Table 4.7. Patterns for ‘Demand in the Sector’

Patterns	Number of respondents
no demand for industrial designer	5
demand in the UX professions	6
the privilege of industrial design education	4

Unlike the limited demand for industrial designers, the recurring theme of ‘demand in UX professions,’ expressed by six respondents, underscores the abundance of job opportunities in the user experience field, providing individuals with various options. Respondents, noting a substantial need for UX roles in the industry, believe that major companies, influencing others in the field, contribute to the abundance of job postings across various organizations. Additionally, when experiencing negative situation in the companies they work for, respondents think that it is much easier to change jobs than in industrial design because there are so many postings and companies.

51. “Popularity... companies’ needs are actually increasing. When the needs of companies increase, they realize that there are employees like this, there are experts working on this field, let’s hire people like that.” (R10)
52. “Actually, if things don’t go well here one day, there is always somewhere to pass. It feels good in that sense.” (R13)

Finally, while only a few respondents discussed it, some conveyed the notion of the ‘advantage conferred by industrial design education.’ They observed that when

companies place an industrial design graduate in their user experience units, this educational background can be more easily adapted to the field.

53. “I think those who recruit from the company think that industrial design graduates already know this process and will learn it quickly.” (R14)

4.3.2 Working Conditions

In this section, respondents’ experiences, observations, and sentiments regarding working conditions in the fields of industrial design and user experience are shared. The examination and coding of interviews revealed five distinct patterns, as outlined in Table 4.8, collectively influencing the subcategory.

Table 4.8. Patterns for ‘Working Conditions’

Patterns	Number of respondents
issues in the UX field	7
issues in industrial design working conditions	6
good work environment in the UX field	4
uninspired jobs in industrial design	6
transferable know-how between UX roles	3

The research results revealed that, despite the respondents opting to pursue their careers in the user experience field, working in this domain is not universally perceived positively. Negative situations, grouped under the ‘issues in the UX field’ pattern, and highlighted by seven respondents, reveal as follows; lack of clarity in job descriptions, allocation of additional responsibilities to designers under the UX designer title, perceiving user experience as just user interface, inability of companies to provide designers with an efficient working environment, and consideration of some colleagues working in user experience without a design background as professionally incompetent.

54. “We are not wizards. We work with data, if the data comes from the user, we give output accordingly. I have seen such a perception in some places, it’s like “I’m a user experience designer but I know the user.” I don’t know the user. I can know if I do research on the user.” (R2)
55. “Unfortunately, when it comes to user experience, there is a perception that only interface design is done in Turkey.” (R14)
56. “I am listed as UX designer, that is my title in the company, but for example, I also designed the packaging of this product. I also followed the production of the box design, I went to the industry and supervised the work of the boxer and the packager. Apart from that, if we are going to a fair, I also design a brochure and poster about the it.” (R1)

While deciding to continue their professional journey in the field of UX, some negative observations caused the respondents not to consider working as industrial designers. These are encapsulated within the ‘issues in industrial design working conditions’ pattern. As stated by six respondents, working in a factory environment is perceived unfavorably by designers, and advancing in job titles is considered difficult while working as industrial designers. Moreover, it has been noted that, in numerous sectors, products are designed with general ideas without defining specific user groups. Although articulated by only two individuals, the fact that industrial designers collaborate with blue-collar personnel due to their working conditions was mentioned. They expressed an inability to accept the unfair working conditions applied to their blue-collar colleagues, even though they operated in the same environment.

57. “It is a factory environment. So, it gets boring after a while.” (R13)
58. “We are not trying to solve it with the product, in fact, we are trying to create a concept there without knowing the user.” (R8)
59. “It is not just about the money I earn or the well-being of the system I live in; it is also important to me that the people I work with can accomplish things.” (R3)

Respondents, while acknowledging the challenges of working in the user experience field, also highlighted several positive aspects. Specifically, this perspective, expressed by four respondents, emphasized the notion of a ‘good work environment in the UX field.’ Key factors within this pattern encompass the chance to work in well-designed office spaces, a more vibrant and aesthetically pleasing office environment, increased social interaction within offices, the option for remote work, access to superior equipment (computers, etc.), and the advantage of collaborating with teammates who are software developers rather than foremen.

60. “Expectations and services provided such as hardware, software, etc. In other words, the opportunities provided are very different. For example, as I said, we were given to work from home indefinitely.” (R13)
61. “You have conversations like “what are you doing in the evening?”, you have happy hours, you meet people. Designers and people like you are more common. That’s why, when I think about it in a social sense, I can say that it is an area where I would like to work more.” (R10)

In relation to working conditions, the pattern of ‘uninspired jobs in industrial design’ was identified, reiterated by six respondents. They expressed that numerous industrial design positions lacking innovation. Also, they highlighted observations such as low learning curve in these roles, a prevalent reliance on the 3D model designer approach, and a limited opportunity to apply problem-solving skills in such positions.

62. “Either you become a modeler, you become a technical problem solver, or you become a painter in the creative department, etc.” (R6)
63. “There is nothing for you to learn anymore, there is nothing for you to improve yourself. You start not to enjoy the job anymore.” (R13)

Lastly, three respondents emphasized the existence of ‘transferable know-how between UX roles.’ They noted that transitioning between user experience roles, which encompass various titles in numerous sectors, is notably more straightforward compared to the conditions in industrial design. Respondents highlighted that

acquiring new knowledge when transitioning to a different sector is not daunting and is highly adaptable. Concerning job titles, they mentioned that although there is a learning curve, changing roles at different points in one's career is considered normal in the industry and does not pose significant challenges.

64. "When you move to another field, you don't have to worry about "how am I going to change this know-how?" I think it's not that difficult to change sectors in UX." (R10)

4.3.3 Interdisciplinary Teams in the User Experience Field

As outlined in the literature review, given the absence of formal education specifically focused on user experience, individuals from diverse professional backgrounds contribute to this field. This section explores the experiences of industrial design graduates collaborating with counterparts from other departments with similar titles. The coding and analysis of interviews identified four distinct patterns detailed in Table 4.9, collectively shaping the subcategory.

Table 4.9. Patterns for 'Interdisciplinary Teams in the User Experience Field'

Patterns	Number of respondents
industrial design graduates have more advantages	6
other department graduates don't look for why	5
social sciences graduates tend to be researchers	5
communicate of design graduates is better	4

Under this section, a recurrent notion repeated by six participants emerges: 'industrial design graduates have distinct advantages.' Respondents emphasized that individuals with a background in industrial design education stand out among various departments due to their problem-solving orientation, heightened awareness

of the user's role in the design process, and proficiency in fundamental design principles.

65. "As the designer of a product, we are more inclined towards the user's perspective compared to a computer engineer. Therefore, as graduates, we may be prone to user experience because of that predisposition and because our perspective is at least prepared for it." (R4)

Another notable pattern observed by five respondents is that 'other department graduates don't look for why.' According to their observations, graduates from other design-related departments exhibit a limited awareness of supporting design decisions with data, or they are perceived as less proficient compared to industrial design graduates. Respondents mentioned that, while the aesthetic appeal or alignment with trends alone is inadequate for an average industrial design graduate to make a design decision, these factors may be satisfactory for colleagues who graduated from other departments. Furthermore, it has been asserted that industrial design graduates approach design issues and problems in a more systematic and strategic manner.

66. "Sometimes they act very instinctively when forming their opinions and may not have an answer to the question of why they do this." (R7)
67. "Industrial design graduates approach the problem a little more systematically. I can say that they are really trying to get to the heart of the problem and solve it in a more systematic way." (R12)

The observation that 'social sciences graduates tend to be researchers' surfaced as a result of five respondents. This was particularly noted among respondents engaged in research roles or those with experience collaborating with researchers. In the user experience field, which centers on the interaction between people and products, individuals with education in social science departments were observed to excel in researching human factors. It is presumed that these individuals have acquired research skills in their respective departments, although they may lack expertise in design focus to thrive in this field.

68. “I believe that an anthropologist or a psychologist can prepare questions to understand the psychology of users better than we can.” (R7)

69. “There are people with anthropology and psychology degrees. Yes, it masters all reserach methods, but perhaps this is not very close to what we call user-centered design. They need to improve themselves a little in this area. Yes, they have great knowledge of research methods, they know all the methods, but they are not very familiar with design thinking and human-centered design.” (R11)

Lastly, as four respondent stated, ‘communicate of design graduates is better’ even if they do not have an industrial degree but instead graduate from a different design department. It is emphasized that industrial design graduates share a common professional language with individuals who have received training in graphic design, visual communication design, or other design disciplines that come to mind.

70. “Since we come from the same ecole and are interested in the same things, I think we are people who complement each other and whose professional approach to each other is very clear and beautiful.” (R8)

4.4 Professional Changes during the COVID-19 Pandemic

This section unveils the outcomes of the second stage interviews. Based on insights gathered from interviews, this section will delve into five distinct topics: advancements in employee careers (2020-2022), the predominant motivations driving job changes, renewed emphases on professional development, an assessment of industrial design education for roles in user experience, and an examination of working conditions amid the pandemic. The Methodology chapter outlined that the first stage involved 14 respondents, while the second stage featured 11. The subsequent presentation of data exclusively pertains to the latter group. It is crucial to recognize that the first interview extensively addressed issues related to the main research questions, framing the second interview as a complementary contribution.

Unlike the first stage, where Saldana's coding method was utilized for analysis, the more direct nature of the second stage questions necessitated a distinct approach. Transcriptions of audio recordings were meticulously analyzed, and the resulting data are presented in the subsequent paragraphs.

Advancements in employee careers

Based on insights gathered from interviews, it was revealed that four respondents have been promoted to managerial positions over the past three years. While one respondent (R10) remained dedicated to their designer role, the other three (R5, R13, R14) exclusively embraced managerial responsibilities. Notably, two interviewees (R2, R9) continued their careers abroad. Information on the overseas employment of three respondents (R8, R11, R12) who could not participate in the second-stage interview was acquired through LinkedIn. One respondent (R1) has embarked on the entrepreneurial path, founding a startup where they serve as both the founder and a hands-on designer. Another respondent (R4) underwent a career transition, shouldering UX designer responsibilities concurrently with her role as researcher. Meanwhile, two individuals (R3, R6) remain employed at the same organization, retaining their initial job titles. Lastly, one respondent (R7) changed jobs while continuing to work with the same title.

Motivations driving career changes

Over the past three years, 11 out of 14 respondents have undergone job changes, with some of them transitioning between jobs multiple times. A prominent factor driving these changes is the perception that salaries stagnate when one remains in the same position for an extended period, particularly when compared to prevailing market rates. Another salary-related motivation for job changes is the observation that agencies tend to offer lower pay than corporate firms.

71. “Frankly, the wage you receive when you work in an agency differs from the wage you receive when you work in a corporate company.” (R10)

The second significant motiv for job changes is a perceived lack of career progression within the current workplace. Respondents sought new opportunities with the aspiration of attaining higher-level job titles and advancing their professional trajectories.

72. “Now I need to move forward in my career. Right now my future is off in this department and this company, so I need to do something.” (R14)

A third driver is observed among individuals employed in environments where multiple projects and products are developed (such as agencies or consultancy firms) to explore roles in what they term product companies. They seek a more focused experience where they can dedicate their efforts to a single product.

73. “I wanted to move to a more corporate company to understand the product because since I was working in an agency, we were providing consultancy to different companies and the process was a bit divided, so we could not see much of the next stage after the design.” (R10)

The fourth noteworthy reason is the difficulty in adapting to the company culture, encompassing interpersonal relationships and business processes. Some respondents expressed a desire to work in different organizational cultures, prompting them to seek employment elsewhere.

74. “I was really tired and couldn’t do what I wanted. My demands were not met. I was working in jobs I didn’t want and the team was starting to have such a toxic environment. I started to feel very uncomfortable about this. I was tired, bored, and had no energy left.” (R2)

Renewed emphases on professional development

Respondents highlighted new areas of professional development essential for adapting to their evolving careers and dynamic professional conditions. These focal points encompass data analysis, people management, visual design, accessibility concepts, design systems, work prioritization skills, motion design, UX writing, workshop design, proficiency in Figma (a design tool), and product management.

Notably, the previously mentioned IDF training from the initial interviews and research publications on the Nielsen Norman Group's website were reiterated as valuable resources. Furthermore, one respondent stated the significance of staying updated on current product trends through the Product Hunt platform. Additionally, one underscored the value of receiving mentoring support through the ADP list platform, indicating its specific relevance in their professional growth and adaptation efforts.

Assessment of industrial design education for roles in user experience

The insights on this matter align with the findings discussed in the section titled Sense of Competence in the User Experience Field. There is a prevailing belief that industrial design education, while not exhaustive in covering every facet of the UX field, does furnish a foundational skill set essential for engaging in it. A significant majority of respondents express confidence in their grasp of the design thinking methodology, considered a crucial competence in both UX and product management. Furthermore, they hold the view that the knowledge acquired in industrial design education concerning the product design process is applicable across diverse sectors, irrespective of the design output format. The acquired mindset from the department is perceived to enhance respondents' problem identification and solving skills.

75. "I think it is very similar in terms of design thinking. Here, come up with a concept and work on a user journey based on this concept. We can carry out the process based on the basic principles we learned at school. I still use the same basic principles." (R3)
76. "In fact, there is a very serious connection between product design and UX in terms of mindset. In industrial product design, I actually design a product by determining the needs of the user. Being three-dimensional is just the output of this. In fact, the basic point in UX is to find the points that affect the user's experience and make a design accordingly, to determine their pain points and their motivations." (R9)

However, some respondents assert that the undergraduate education pertaining to user and design research is insufficient. While this subject is introduced in studio projects, there is a consensus that it is not sufficiently emphasized and tends to be overlooked.

77. “Since digital interactions in product design were not included in the design process in our time, practices in the digital channel were not included in our training.” (R4)

78. “Research, testing the design and understanding the data related to these are important details, but they are areas that we do not handle professionally in education life. Were the teachers making us do it? Yes, but they didn’t have it done professionally. I learned all of this as a professional and how to do it after I started this job.” (R14)

Examination of working conditions amid the pandemic

Respondents shared a range of perspectives, both positive and negative, regarding the experience of working from home during the pandemic and the subsequent adoption of hybrid working models. Beginning with the positive aspects of professional life during this period, several advantages were highlighted. These included the elimination of commute time, the flexibility to wake up later, the comfort of working in casual clothes, the freedom to work in a flexible manner, the expedited handling of short-term non-work tasks without seeking permission, the ability to work without interruptions from others, and the option to multitask during meetings (such as attending to household chores, self-care, or other work-related responsibilities). Specifically noteworthy positive outcomes include the enhanced development of team awareness for companies with offices in different cities, the mitigation of disadvantages stemming from location differences, and a notable improvement in everyone’s proficiency in utilizing digital tools.

79. “It was very nice not to waste time in transportation. To be able to spare time for oneself and exercise.” (R10)

80. “There are many online tools we use as designers. Before working remotely, I did not use online to that much. Nowadays, it has become very easy to get together with someone, wherever they are in the world, and work on something, make a sketch, or put their ideas on a whiteboard.” (R3)

Negative aspects include feelings of social isolation, the challenge of addressing quickly resolvable issues in a remote work setting due to communication barriers, prolonged adaptation processes, especially challenging for new graduates entering the work remotely, diminished efficiency in research processes, disruptions in test procedures for products with physical touchpoints, and the need to abandon remote work for seamless workflow continuity. Particularly significant is the contrast between the strong communication and increased intimacy experienced with colleagues met face to face versus the limitations encountered in remote work environments. Moreover, respondents involved in ideation processes expressed difficulties in making digital ideation as effective as physical ideation. Some voiced a longing for the collaborative nature of in-person ideation with post-it notes in a meeting room, underscoring the irreplaceable aspect of physical presence in certain creative processes.

81. “Since we were in the same office, I would go to my teammate while I was doing some work. It is not that easy when working remotely.” (R13)
82. “For example, I did this or got stuck in a flow. I miss the times when we were all in a room, literally writing on post-its and brainstorming. I think this feeds into the design process.” (R7)

4.5 Summary and Discussion of the Field Study

The Findings chapter examines data from 14 semi-structured interviews conducted in 2020 and 11 semi-structured interviews conducted in 2022 with industrial design graduates who engaged in the UX field. The initial interview encompassed open-ended inquiries addressing respondents’ university education, extracurricular

educational resources, motivations for venturing into the UX domain, professional experiences, and collaborative practices in their current roles. In the subsequent interview, respondents were queried about their professional experiences during the pandemic period and any developments in their career trajectories over the intervening three years.

Respondents were selected from three different universities of graduation, representing various sectors and job titles, to ensure a diverse range of perspectives. The respondents graduated between 2012 and 2018. Despite their diverse sectors and job titles, respondents commonly shared insights into their decisions, motivations, and experiences within the UX field. The analysis of findings is structured around four main themes: motivations, knowledge and education, the situation in the sector, and professional changes during the COVID-19 pandemic. The subsequent discussion of interview findings will be framed within the context of the relevant literature.

The data analyzed in the Findings chapter is presented under four main headings: Motivations, Knowledge and Education, Status in the Industry, and Professional Changes during the COVID-19 Pandemic.

Motivations

While examining the literature on the career trajectories of industrial designers, Valtonen's (2005) analysis reveals a noteworthy shift in the design process after the 1970s. Designers transitioned towards a more systematic and data-driven approach, departing from traditional arts and crafts methodologies. Coşkun and Ramoğlu (2017) similarly characterize designers as scientific craftsmen, distinguishing them from 20th-century traditions. These designers employ multidisciplinary scientific methods and theories, emphasizing collaboration with digital resources. Both studies underscore a transformative professional evolution in industrial design, showcasing an increased reliance on research data over time and a heightened emphasis on the scientific aspects of design.

In the fieldwork conducted on motivational factors influencing the shift to UX, while literature highlights the growing prevalence of designers engaging in processes guided by scientific data and diverse methodologies, respondents perceive that the current working conditions for industrial designers lack scientific and innovative elements. Simultaneously, they view the user experience field as a realm where the impact of design is more visible than industrial design and emphasize the scientific nature inherent in design. The widespread perception that current working conditions for industrial designers lack scientific and innovative elements is coupled with the reality of limited demand for industrial designers in the job market. In contrast, there is a burgeoning demand for professionals in the user experience field, a domain that respondents believe they are well-prepared to enter. Consequently, transitioning to roles in user experience is deemed a highly rational and justifiable outcome.

Additionally, within the category labeled ‘career opportunities’ in this section, respondents discussed the driving factors behind seeking higher job titles and pursuing employment abroad. This study, having conducted two distinct interviews with the same respondents over three years, allows respondents to self-reflect on their journey. As highlighted in the earlier section addressing the pandemic, four respondents with aspirations for career growth now hold managerial positions. In the meantime, five others have secured employment abroad and established themselves in new professional environments in Europe.

Knowledge and Education

Reviewing the literature, it is evident that many industrial design graduates gravitate toward the user experience field, corroborated by Morris’s (2021) observations on the commonalities in design processes, user-centered focus, and creative thinking. Respondents’ experiences further reinforce this trend during their four years of industrial design education, where the emphasis on product experience aligns with the UX domain. This situation can also be supported by the ‘product design process knowledge,’ ‘user research and testing,’ ‘ideation,’ ‘design thinking,’ and ‘user-centered design’ patterns that emerge in fieldwork. Despite this alignment,

respondents express a sense of inadequacy in areas such as designing for digital products, user data collection and analysis practices, and web and mobile interface design. They acknowledge these gaps as areas for development, consistently making efforts to enhance their skills.

Regardless of their experience levels, respondents, including those with over 5-6 years in the field, exhibit a similar approach to their profession. The majority take a stance that emphasizes ongoing commitment to professional development. Some respondents attribute this mindset to a 'learning to learn' approach ingrained in their university education, cultivating a proactive attitude toward acquiring new skills and knowledge.

On a broader scale, Getto and Beecher (2016), discussed in the literature, emphasize the interdisciplinary nature of the UX field and note the challenges in creating departments that integrate the diverse disciplines inherent in UX. This statement suggests that no undergraduate program can fully equip graduates with the entire skill set required for UX work. Consistent with past research and respondent experiences, it is reasonable to consider the transition of industrial design graduates into the UX field and ongoing efforts to increase their competency as an appropriate progression.

In summary, the study has uncovered areas where industrial design graduates feel confident in their experiences within UX roles, as well as areas where they acknowledge the need for improvement. Many respondents offered both positive and negative critiques of industrial design education. Generally, industrial design programs focus on comprehensive product development processes, providing students with essential knowledge through compulsory or elective courses. Given the broad nature of industrial design, expecting students to specialize in a particular sector during their four-year education may not be realistic. The primary aim of such training is to equip students with a thorough understanding of product development principles, enabling them to navigate various professional paths as industrial designers. Therefore, it is natural for students to feel both knowledgeable and

inexperienced in UX roles, gradually mastering the intricacies of the field as they gain practical experience.

When evaluating educational criticisms, it is necessary to consider that the respondents graduated between 2012 and 2018. Since the respondents graduated, the industrial design department has adapted to this field to some extent, and there has been an effort to follow the sector closely. Since there is a high proportion of METU graduates in the study, the current curriculum of the university was examined. It is seen that courses named Service Design, User Research in Design, and User Experience for Special User Groups have been added to the program.

While Turkey currently lacks an undergraduate program in the field of user experience, it is evident on an international scale that numerous relevant undergraduate programs have emerged globally. Notably, the United States hosts several distinguished programs, such as those at Carnegie Mellon University (Human-Computer Interaction), the University of Washington (Human Centered Design & Engineering), and the Savannah College of Art and Design (UX Design). Likewise, European countries offer university programs in UX Design or UX/UI Design, with Germany, the Netherlands, and the UK being prominent in research on user experience training.

Status in the Industry

It becomes evident that the inclination towards a career in the UX field is shaped by the industry's demands while examining the findings presented in this section. There is a scarcity of companies seeking industrial designers, in contrast with the high demand for roles in the UX field. This situation shaped the other motivations mentioned previously. Therefore, sectoral demand stands out as the most influential factor.

Hamurcu's (2014) study, as outlined in the Literature Review chapter, explores why companies employ industrial design graduates in their UX departments. The study identifies a user-centric problem-solving approach, the ability to translate user data

into meaningful design solutions, proficiency in problem identification and innovative solutions, and swift adaptation to the field as critical reasons. Aligning with the ‘the privilege of industrial design education’ finding under the Demand in the Sector section, Hamurcu’s findings and this study appear in the same direction.

Transitioning to the discussion of working conditions, respondents shared unfavorable experiences and expectations concerning industrial designer roles. Etemoğlu and Er’s (2014) study, as mentioned in Chapter 2, on motivation factors within the industrial design profession, involving 87 professionals in Turkey, indicated that job satisfaction, career planning opportunities, access to new technology, and the visibility of the entire work process were perceived as notably deficient, with only one out of 87 individuals expressing motivation in these areas. In parallel, initiated in 2020, this study mirrored these findings, capturing predominantly negative opinions regarding the working conditions within the industrial design profession while receiving positive feedback on the UX field.

Respondents who initially found fulfillment in the UX field also encountered challenges once they began working in this domain. Collaborating within the same team with graduates from diverse design-focused departments, including industrial design, contributed to a high-quality work environment. Collaborating within the same team with graduates from various design-focused departments, including industrial design, has fostered a positive and high-quality work environment. Respondents believed they shared common ground with these individuals, facilitating seamless communication. On the other hand, collaborating with individuals who have received short training for UX roles, like online courses or boot camps from companies, has resulted in negative experiences for design-oriented titles. This situation was attributed to the absence of user focus and problem-solving approaches. Furthermore, respondents highlighted a negative aspect wherein jobs in the UX field tend to prioritize the visual output, UI, potentially oversimplifying the perception of the role. According to the respondents, this problematic perspective is observed within companies and among colleagues.

Moreover, respondents perceive professionals with a background in industrial design as more skilled in design-focused roles within the UX field. Many companies have established a dedicated user researcher position responsible for user research. Designers occupying these roles expressed limited benefits from their industrial design education, leading to the inference that departments within the faculty of social sciences, such as psychology, sociology, and anthropology, are deemed more suitable for researcher positions. Graduates from these disciplines are seen as inherently human-oriented, aligning well with the requirements of the UX field. However, a challenge exists in connecting this human-centric perspective with being user-oriented in design.

In line with the subject of this study, the intersection points of industrial design and user experience fields were examined. Although the general opinion is that many industrial design graduates are now starting to work in the field of user experience, the percentage of designers who continue in the role of industrial designers throughout Turkey cannot be underestimated. Under the umbrella of The Chamber of Architects of Turkey, the Commission of Industrial Designers published a report titled 'Industrial Design Professional Field Status Assessment 2023' in January 2024, in which 501 industrial design graduates participated. People who graduated between 1977 and 2023 participated in the survey, and the participants were concentrated between 2009 and 2023. According to this report, approximately 35% of the people currently work in industrial designer roles. The rate of participants working in user experience roles is close to 11% (Hasdoğan, 2024).

As a final consideration, although the term user experience has been around in various design and technology circles for a while, it is relatively new as a direct job title in Turkey. This field is growing as technology keeps advancing and digital products become more common. Since the demand for this title is relatively high in the current market, favorable conditions such as competitive salaries and ample job opportunities exist. However, the future trajectory of the industry remains uncertain, particularly regarding the potential saturation of UX roles as demand fluctuates.

Therefore, it is essential to approach the evolving landscape of this field with caution, considering its increasing prominence and the potential for future shifts.

Professional Changes during the COVID-19 Pandemic

Returning to the literature, Di Martino and Wirth's 1990 definition of remote work notably does not encompass any restrictions or home confinement considerations. Based on this definition, a critical examination of the remote working culture is needed since the phenomenon was relatively uncommon before the pandemic. This evaluation extends beyond the pandemic, considering people's attitudes towards remote work independently of the global crisis. After three years of practical experience, the prevailing sentiment among most respondents is that remote working does not align well with the productivity expectations in the design profession, though there are dissenting opinions. It is crucial to contextualize these individual perspectives within the broader strategies companies adopt. Observations indicate that respondents in companies treated remote work as a temporary response to the pandemic and struggled to break away from a dependency on physical office spaces. In contrast, companies embracing remote work as a more permanent practice, despite the pandemic, reported no issues and productivity levels remained consistent among designers. This distinction becomes especially pertinent when considering companies developing products with physical touchpoints, where the necessity for a physical presence may differ significantly from those focused on digital product development.

CHAPTER 5

CONCLUSION

This chapter comprises four subheadings. Initially, it presents an overview of the thesis titled ‘Motivation and Professional Capabilities of Industrial Design Graduates for Roles in the User Experience Field.’ Subsequently, a segment is dedicated to revisiting the research questions and clarifying pertinent issues. Finally, the chapter explains the study’s limitations and suggests future studies.

5.1 Overview of the Study

The introduction established the research foundation, giving an overview of the study’s background, research questions, and objectives (Chapter 1).

The literature review examined industrial design and user experience, exploring their evolution, educational aspects, and professional paths, along with the impact of COVID-19 on working life (Chapter 2).

The methodology outlined the study approach, detailing research methodology, data collection methods, interview design, sampling group, procedures, and analytical approaches for understanding industrial design graduates’ motivations and capabilities (Chapter 3).

Findings revealed outcomes from the field study, covering motivations, knowledge, education, sector situations, and the impact of the COVID-19 pandemic. The chapter connected these findings with the literature review (Chapter 4).

This chapter, Conclusion, synthesized key study conclusions, offering a holistic perspective on industrial design graduates’ motivations and capabilities in transitioning to the user experience field.

5.2 Revisiting the Research Questions

The central focus of the thesis centered on three key research questions, with the literature review and qualitative data analysis contributing comprehensive insights and answers to these particular questions.

- How do industrial design graduates transform and adapt their professional knowledge to the recently emerging user experience jobs?
- What are the roles of industrial design graduates in the user experience field?
- What are the industrial design graduate's interests and motivations for pursuing a career in user experience jobs?
- What strategies can be recommended for industrial design education to better integrate user experience topics?

The research questions were thoroughly explored by initially presenting respondents with a set of interview questions aimed at gathering detailed data on the subject. Open-ended questions were utilized to minimize influence on respondents. The primary goal was to encourage respondents to share stories about their educational experiences, career journeys, and the intricate connection between them. As a result, some interview questions were strategically designed to contribute to more than one research question.

Q1: How do industrial design graduates transform and adapt their professional knowledge to the recently emerging user experience jobs?

According to the respondents, the product design practices taught in industrial design education were closely parallel to those in the field of user experience. The theoretical knowledge acquired in the department and the practical insights gained through projects could be seamlessly applied without the need for adaptation. As frequently emphasized by respondents, the primary distinction is the design output. In industrial design education, most projects involve designing physical products, with rare instances of system or service design and even rarer occurrences of digital

product design. Consequently, respondents graduating between 2012 and 2018 often lacked experience in digital product design.

For the roles in the UX field, design output predominantly consists of digital products, with a minority of companies incorporating physical and digital elements. Despite the noted difference in design output, respondents underscore that it does not significantly impact the design process. Whether the output is physical or digital, they follow similar steps in the design process, including problem definition, ideation, conceptual design, and prototyping.

Specific professional skills and perspectives from their education have equipped respondents for their careers in user experience. Notable strengths include problem identification and solving skills, a user-centered design approach, familiarity with design thinking methodology, and a feedback and product development culture. Problem identification and solving skills are considered essential aspects of the design process and are the primary motive for idea generation. Most respondents considered these skills solid and believed that by focusing on design with this competency, they could successfully manage the entire process, regardless of the specific design deliverable. Respondents consistently conducted the design process following a design brief throughout their education, highlighting that their approach centered on a specific user group during this undertaking. This consistent practice facilitated the improvement of a user-centered design focus, a skill they consider highly beneficial in user experience. Applying design thinking methodology, taught in education and implemented in various studio projects, has enhanced respondents' proficiency and readiness, both in designer roles and broader business contexts. They are familiar with the product development culture through feedback benefits the iteratively conducted product development process.

Therefore, industrial design graduates did not need to transform and adapt the professional knowledge they learned and benefited from in the department, although the design output changed its form from physical to digital in the transition from industrial design to user experience.

Q2: What are the roles of industrial design graduates in the user experience field?

This research question aimed to ascertain the impact of professionals' educational backgrounds in the user experience field on their job responsibilities and titles. The research findings indicate that while education does not significantly impact roles, responsibilities, or titles, it plays a crucial role in influencing the execution of the design process and the approach to design-related challenges.

Respondents frequently underscored their professional strengths, a pivotal element in responding to the initial research question. They expressed those colleagues from diverse academic backgrounds, whether design-focused or not, exhibited greater openness to professional development in the specified areas. These are problem identification and solving skills and a user-centered design approach. Industrial design graduates were observed to excel in recognizing problematic aspects for users during the design process, addressing the entire product/service with a holistic perspective to propose comprehensive solutions. In contrast, respondents find that colleagues who graduated from different departments perceive the practice of grounding design in a problem to be less significant. They believe that emphasizing the aesthetics of design is prioritized more than problem-solving.

While not directly linked to their education, the titles used by respondents and those commonly associated with industrial design graduates working in the user experience field were enumerated as follows:

- UX Designer
- UX/UI Designer
- Product Designer
- UX Researcher
- UX Designer/Researcher
- Experience Designer
- UX Strategist

- Customer Experience Designer

Q3: What are the industrial design graduate's interests and motivations for pursuing a career in user experience jobs?

The exploration of industrial design graduates' interest and motivation in pursuing a career in the user experience field was a prominent theme throughout the research. The analysis of the collected data reveals three main themes encompassing interests and motivations: demand in the sector, challenges in industrial design, and positive expectations from the user experience field.

Respondents highlighted a minimal demand for industrial designers within the sector. Notably, among those who participated in the study, individuals who completed their studies in 2015 or earlier reported having experience as industrial designers. In contrast, respondents who graduated in 2016 and later noted a lack of such opportunities. While the respondent pool may need to be more extensive to assess trends over the years comprehensively, it offers a tentative insight into the issue. Despite the challenge of finding job postings specifically for industrial designers, there is a noticeable emergence of positions related to user experience on platforms like LinkedIn and Kariyer.net. The quantity of such postings has demonstrated an upward trajectory over time. Respondent's feedback states a growing awareness of the value of designers in software development companies, resulting in a consistent rise in job opportunities. The variation in demand for designers in two fields within the industry is considered the most significant factor discussed throughout the research regarding career transitions.

Experience or the perception of being an industrial designer is frequently negatively interpreted by respondents. There are various reasons for this, and the notable ones are listed as follows: companies lacking innovation, working in a factory environment, standardization of the product design process due to company expectations, working without defining the user group, and the challenging nature of career advancement with this title. Industrial design graduates, encouraged to be innovative throughout their education, often collaborate with companies prioritizing

sales and cost reduction upon entering the industry. The resultant disappointment is a significant factor noted by respondents. Subsequently, many respondents view being an industrial designer as synonymous with working in a factory. While a few agencies are mentioned, it is observed that their numbers are already relatively low, and only a tiny minority are employed there. Before the emergence of the field of user experience, working in a factory was an accepted situation. However, with the advent of office opportunities in the user experience field, working in a factory environment has taken a negative turn. Respondents working as industrial designers have communicated that design processes become overly constrained and repetitive over time due to company expectations and brand identities. Another negative aspect emphasized by these individuals is the situation of working without defining the user group. Lastly, most respondents concur on the final point, which is that industrial designers must exert considerable effort or patience to advance in their careers.

Several points motivate respondents and capture their interest in user experience. The prominent ones can be listed as follows: the ability to design based on data, more agile design processes, the tolerance for making mistakes without significant consequences, the opportunity to work in a beautiful office, socialization opportunities in the workplace, having many options in terms of job changing, and the perceived ease of finding jobs abroad and advancing in their careers in this field. First, in a field where user research is more advanced than in industrial design, designers believe they can express themselves more effectively in professional terms. Second, since most job listings in this field are in the software industry, the concept of the physical production line is eliminated. Third, the software production process appears much more agile to industrial design graduates than to industrial design graduates. Related to agileness, making mistakes is considered quite normal because errors do not lead to significant financial losses and are seen as a step towards the right path. Fourth, the office itself and social interactions and opportunities in offices are better than in industrial design.

Then, respondents mentioned that they have more options when they want to change jobs because there are many job advertisements in the market. The respondents

confirmed this motivation during the second interview; in the three years between the two interviews, 11 out of 14 respondents changed jobs. The motivation to find a job abroad also emerged as a situation confirmed by the respondents between the two interviews. While only one respondent lived abroad during the initial interviews, this number increased to five after three years. Lastly, respondents believe they can advance more quickly in their careers while working in the field of user experience. The respondents between the two interviews have confirmed this. Four respondents have risen to managerial positions in the three years that passed.

Consequently, in the challenging conditions created by the industrial design profession in the sector, industrial design graduates have become interested in working in the field of user experience. Motivations include the opportunity to work with user data, a better office environment, more job options, higher income, faster career advancement, and the possibility of working abroad.

Q4: What strategies can be recommended for industrial design education to better integrate user experience topics?

Based on the issues that the respondents felt inadequate and their comments & suggestions about industrial design education, this study proposes recommendations for enhancing the educational approach by emphasizing the training of designers with the necessary knowledge and skills for the roles in user experience field.

While respondents have undergone substantial exposure to the product development process during their academic journey and feel competent in that realm, translating this experience into the distinct field of user experience remains debatable. To better prepare students for a career in the user experience field upon graduation, the initial recommendation is to integrate projects related to digital products into studio courses. The suggestion could involve projects incorporating physical and digital interaction points, such as smart products. Alternatively, introducing a dedicated course to the curriculum for acquiring and developing digital product design skills is a viable option. To enrich this experience, collaboration with professionals actively

engaged in the user experience sector, whether in studio courses or a separate mandatory/elective course, is seen as beneficial.

The second recommendation underscores the need for a more comprehensive approach to the user research phase within studio projects. Respondents who reported previous experience with user research often admitted to treating it casually within their department. Addressing this, a suggested solution is introducing a separate course teaching research methods independent of the studio course. Augmenting the clarity of briefs for the research phase of studio projects, explicitly outlining expected outputs, and allocating a distinct timeframe for the research phase without compromising the design phase duration can substantially alter students' perspectives on the subject.

The third and final recommendation proposes an elective course focusing on technical details, such as accessibility in mobile interface product development. This course can be viewed as analogous to industrial design education's emphasis on production methods and material knowledge. Whether or not industrial design graduates directly engage in UI design, possessing insights into the environment where their designed product will be implemented enhances their professional readiness.

While reading these suggestions, it should be known that these conclusions were reached due to interviews with professionals who graduated between 2012 and 2018. Since industrial design departments also improved themselves during data collection and thesis writing, some of the suggestions may have been implemented in some educational institutions.

5.3 Limitations of the Study

Commencing data collection through interviews in early 2020, the initial plan involved conducting face to face interviews with respondents in Ankara and virtual interviews with those in Istanbul. Given the relatively limited popularity of remote

tools, face-to-face meetings were deemed more productive. However, with the onset of the Covid-19 pandemic in March 2020 during the fieldwork phase, a shift to online meetings with respondents in Ankara became necessary.

Following the completion of fieldwork, a second meeting with respondents was deemed necessary due to the suspension of work between 2020-2022 and substantial changes in the business landscape caused by the ongoing COVID-19 pandemic. Contact was reestablished with each of the 14 respondents, but regrettably, some did not respond, and others, even if willing, could not allocate time. Consequently, three respondents were absent from the second round of interviews.

5.4 Suggestions for Further Studies

While analyzing the findings of this research, certain points were identified that could be noticed and serve as subjects for future research. In order to stay focused and not deviate from the main topic, this thesis did not delve into the following areas.

- Updates that can be made in education to ensure industrial design training produces more well-equipped professionals for the field of user experience.
- How the expectation of data-driven design, highlighted as a significant motivation, manifests in jobs within the field of user experience and how designers experience this aspect.
- Whether the expectations set when starting to work in the field of user experience align with the realities of professional life and to what extent these expectations are met.
- The reasons behind the scarcity of industrial designer job postings in Turkey and why graduates from this department tend to move away from this profession.

REFERENCES

- Adams, W. C. (2015). Conducting Semi-Structured Interviews. In K. E. Newcomer, H. P. Hatry, & J. S. Wholey (Eds.), *Handbook of practical program evaluation* (4th ed., pp. 492-505). Jossey-Bass. <https://doi.org/10.1002/9781119171386.ch19>
- Adekoya, O. D., Adisa, T. A., & Aiyenitaju, O. (2022). Going forward: remote working in the post-COVID-19 era. *Employee Relations: The International Journal*, 44(6), 1410-1427.
- Akoğlu, C. (2009). Etkileşim Tasarımının Bilgi ve İletişim Teknolojileri Gömülü Ürünlerin Tasarım ve Geliştirilme Sürecindeki Rolü (Doctoral dissertation, Fen Bilimleri Enstitüsü).
- Al-Habaibeh, A., Watkins, M., Waried, K., & Javareshk, M. B. (2021). Challenges and opportunities of remotely working from home during Covid-19 pandemic. *Global Transitions*, 3, 99-108.
- Alhojailan, M. I. (2012). Thematic analysis: a critical review of its process and evaluation. *West East Journal of Social Sciences*, 1(1), 39-47. <https://citeseerx.ist.psu.edu/pdf/688d4a3fbeada5adfc67c8b2b8f5a6d7355ab94c>
- Alsaawi, A. (2014). A critical review of qualitative interviews. *European Journal of Business and Social Sciences*, 3(4), 149-156. <http://dx.doi.org/10.2139/ssrn.2819536>
- Black, N. (1994). Why we need qualitative research. *Journal of Epidemiology and Community Health*, 48(5), 425. <http://dx.doi.org/10.1136/jech.48.5.425-a>

Blaxter, L., Hughes, C., & Tight, M. (2010). Collecting Data. *How to research* (4th ed., pp. 193–196). McGraw-Hill Education.

Budd, J. (2011, September). *Can Industrial Design Education Turn the Corner: Setting a New Trajectory for the Future of Industrial Design Education*. 2011 IDSA National Design Educator's Conference, New Orleans, USA. <https://www.idsa.org/wp-content/uploads/CanIndustrialDesignEducationTurntheCorner.pdf>

Budd, J., Taylor, R., Wakkary, R., & Evernden, D. (2003). Industrial Design to Experience Design: Searching for New Common Ground. *Proceedings of ICSID 2nd Education Conference*, 137-141. https://www.academia.edu/download/68560525/ICSID_final.pdf

Budd, J., & Wang, W. (2017). Industrial design education: Taming technology to enhance user experience. *Archives of Design Research*, 30(3), 17-27. <https://doi.org/10.15187/adr.2017.08.30.3.17>

Di Martino, V., & Wirth, L. (1990). Telework: A new way of working and living. *Int'l Lab. Rev.*, 129, 529.

Er, A. (2007). Industrial design: Design-driven innovation. In *International Cultural and Academic Meeting of Engineering Students (ICAMES) '07*.

Etemoğlu, Ş., & Er, A. (2014). Türkiye’de Endüstri Ürünleri Tasarımcılarının Motivasyon Faktörleri Üzerine Bir Çalışma. *UTAK 2014 Bildiri Kitabı Eğitim, Araştırma, Meslek Ve Sosyal Sorumluluk, (10-12 Eylül 2014)*.

- Fallman, D. (2003, April). Design-oriented human-computer interaction. In *Proceedings of the SIGCHI conference on Human factors in computing systems* (pp. 225-232).
- Forlizzi, J., & Battarbee, K. (2004, August). Understanding experience in interactive systems. In *Proceedings of the 5th conference on Designing interactive systems: processes, practices, methods, and techniques* (pp. 261-268).
- Fox, M. (2013, February 9). John E. Karlin, who led the way to all-digit dialing, dies at 94. *The New York Times*.
<https://www.nytimes.com/2013/02/09/business/john-e-karlin-who-led-the-way-to-all-digit-dialing-dies-at-94.html>
- Francis, J. J., Johnston, M., Robertson, C., Glidewell, L., Entwistle, V., Eccles, M. P., & Grimshaw, J. M. (2010). What is an adequate sample size? Operationalising data saturation for theory-based interview studies. *Psychology and Health*, 25(10), 1229-1245.
- Getto, G., & Beecher, F. (2016). Toward a model of UX education: Training UX designers within the academy. *IEEE Transactions on Professional Communication*, 59(2), 153-164.
- Gonzalez, C. A., Ghazizadeh, M., & Smith, M. (2014, September). Perspectives on the training of human factors students for the user experience industry. In *Proceedings of the Human Factors and Ergonomics Society Annual Meeting* (Vol. 58, No. 1, pp. 1807-1811). Sage CA: Los Angeles, CA: SAGE Publications.
- Gonzalez, C. A., Smith, M. A., & Youmans, R. J. (2017, September). Are human factors students prepared for careers in user experience research? A survey

of predicted and actual skill utilization. In *Proceedings of the Human Factors and Ergonomics Society Annual Meeting* (Vol. 61, No. 1, pp. 1101-1105). Sage CA: Los Angeles, CA: SAGE Publications.

Gray, C. M. (2014, April). Evolution of design competence in UX practice. In *Proceedings of the SIGCHI Conference on human factors in computing systems* (pp. 1645-1654).

Gray, C. M. (2016, May). " It's More of a Mindset Than a Method" UX Practitioners' Conception of Design Methods. In *Proceedings of the 2016 CHI conference on human factors in computing systems* (pp. 4044-4055).

Guest, G., Bunce, A., & Johnson, L. (2006). How many interviews are enough? An experiment with data saturation and variability. *Field Methods*, 18(1), 59-82. <https://doi.org/10.1177/1525822X05279903>

Hammarberg, K., Kirkman, M., & de Lacey, S. (2016). Qualitative research methods: when to use them and how to judge them. *Human Reproduction*, 31(3), 498-501. <https://doi.org/10.1093/humrep/dev334>

Hamurcu, A. (2014). Türkiye’de kullanıcı deneyimi tasarımının doğuşu ve gelişimi sürecinde endüstriyel tasarımcıların rolü. *UTAK 2014 Bildiri Kitabı Eğitim, Araştırma, Meslek Ve Sosyal Sorumluluk* (333-347). https://utak.metu.edu.tr/files/2014/10/UTAK2014_BildiriKitabi.pdf

Hasdoğan, G. F. (2024). Endüstriyel Tasarım Meslek Alanı Durum Saptaması 2023. TMMOB Mimarlar Odası, Endüstriyel Tasarımcılar Komisyonu.

Hasdoğan, G. F. (2011). Türkiye’de Endüstriyel Tasarım Sektörünün Gelişme Trendleri ve İstanbul’un bu Gelişmedeki Konumu. In *Yaratıcı İstanbul*

Yaratıcı Sektörler ve Kent. İstanbul Bilgi Üniversitesi Yayınları.
<https://hdl.handle.net/11511/93966>

Hassenzahl, M., & Tractinsky, N. (2006). User experience-a research agenda. *Behaviour & information technology*, 25(2), 91-97.
<https://doi.org/10.1080/01449290500330331>

Hassenzahl, M. (2008, September). User experience (UX) towards an experiential perspective on product quality. In *Proceedings of the 20th Conference on l'Interaction Homme-Machine* (pp. 11-15).

Heskett, J. (2002). *Toothpicks and logos: Design in everyday life*. Oxford University Press.

International Organization for Standardization. (2019). *Ergonomics of human-system interaction-Part 210: Human-centred design for interactive systems* (ISO Standard 9241-210:2019).
<https://www.iso.org/obp/ui/en/#iso:std:iso:9241:-210:ed-2:v1:en>

Jacks, T. (2021). Research on Remote Work in the Era of COVID-19. *Journal of Global Information Technology Management*, 24(2), 93-97.

Kaley, A. (2022, June 26). *UX writing: Study Guide*. Nielsen Norman Group.
<https://www.nngroup.com/articles/ux-writing-study-guide/>

Kaygan, P., Ilhan, A. O., & Oygür, I. (2020). Change in industrial designers' jobs: The case of Turkey, 1984-2018. *The Design Journal*, 23(6), 821-841.
<https://doi.org/10.1080/14606925.2020.1802892>

- Kossek, E. E., & Lautsch, B. A. (2018). Work–life flexibility for whom? Occupational status and work–life inequality in upper, middle, and lower level jobs. *Academy of Management Annals*, 12(1), 5-36.
- Kou, Y., Gray, C., Toombs, A., & Adams, R. (2018). Knowledge production and social roles in an online community of emerging occupation: A study of user experience practitioners on Reddit. In *Proceedings of the 51st Hawaii International Conference on System Sciences* (pp. 2068-2077).
- Lallemand, C., Gronier, G., & Koenig, V. (2015). User experience: A concept without consensus? Exploring practitioners' perspectives through an international survey. *Computers in human behavior*, 43, 35-48.
- Law, E. L. C., Roto, V., Hassenzahl, M., Vermeeren, A. P., & Kort, J. (2009, April). Understanding, scoping and defining user experience: a survey approach. In *Proceedings of the SIGCHI conference on human factors in computing systems* (pp. 719-728).
- Law, E., Roto, V., Vermeeren, A. P., Kort, J., & Hassenzahl, M. (2008). Towards a shared definition of user experience. In *CHI'08 extended abstracts on Human factors in computing systems* (pp. 2395-2398).
- Löwgren, J. (2019), Interaction Design - brief intro, *The encyclopedia of human-computer interaction*. . (2nd ed.) The Interaction Design Foundation. <https://www.interactiondesign.org/literature/book/the-encyclopedia-of-human-computer-interaction-2nded/interaction-design-brief-intro>
- Marshall, M. N. (1996). Sampling for qualitative research. *Family Practice*, 13(6), 522-526. <https://doi.org/10.1093/fampra/13.6.522>

METU, Department of Industrial Design, 2023. Self-Evaluation Report, Unpublished

McGinley, C., & Dong, H. (2011). Designing with information and empathy: Delivering human information to designers. *The Design Journal*, 14(2), 187-206.

McIntosh, M. J., & Morse, J. M. (2015). Situating and constructing diversity in semi-structured interviews. *Global Qualitative Nursing Research* 2, 1-12. <https://doi.org/10.1177/2333393615597674>

Meyer, M. W., & Norman, D. (2020). Changing design education for the 21st century. *She Ji: The Journal of Design, Economics, and Innovation*, 6(1), 13-49. <https://doi.org/10.1016/j.sheji.2019.12.002>

Morris, J. A. (2021). Enhancing industrial design education with user experience design. *Education Papers, Industrial Designers Society of America*. [https://www.idsa.org/sites/default/files/Enhancing% 20ID% 20Education.pdf](https://www.idsa.org/sites/default/files/Enhancing%20ID%20Education.pdf). Accessed, 12.

Norman, D., Miller, J., & Henderson, A. (1995, May). What you see, some of what's in the future, and how we go about doing it: HI at Apple Computer. In *Conference companion on Human factors in computing systems* (p. 155). <https://dl.acm.org/doi/pdf/10.1145/223355.223477>

Onwuegbuzie, A. J., & Leech, N. L. (2007). A call for qualitative power analyses. *Quality & Quantity*, 41(1), 105-121 <https://doi.org/10.1007/s11135-005-1098-1>

- Oygür Ilhan, I., & Karapars, Z. (2019). Industrial design education in the age of digital products. *The Design Journal*, 22(sup1), 1973-1982. <https://doi.org/10.1080/14606925.2019.1594922>
- Öz, G., & Er, Ö. (2016). Hikayeler İş Başında: Türkiye’de Firma İçi Çalışan Endüstriyel Tasarımcıların Çalışma Koşulları Üzerine Bir İnceleme. *UTAK 2016 İkinci Ulusal Tasarım Araştırmaları Konferansı: Sorumluluk, Bağlam, Deneyim ve Tasarım Bildiri Kitabı*, (21-23 Eylül 2016).
- Perks, H., Cooper, R., & Jones, C. (2005). Characterizing the role of design in new product development: An empirically derived taxonomy. *Journal of Product Innovation Management*, 22(2), 111-127. <https://doi.org/10.1111/j.0737-6782.2005.00109.x>
- Phillips, S. (2020). Working through the pandemic: Accelerating the transition to remote working. *Business Information Review*, 37(3), 129-134.
- Rabionet, S. E. (2011). How I learned to design and conduct semi-structured interviews: an ongoing and continuous journey. *Qualitative Report*, 16(2), 563-566. <https://doi.org/10.46743/2160-3715/2011.1070>
- Ramoğlu, M., & Coşkun, A. (2017). Scientific Craftsmanship: The changing role of product designers in the digital era. *The Design Journal*, 20(sup1), 4497-4508. <https://doi.org/10.1080/14606925.2017.1352946>
- Razzouk, R., & Shute, V. (2012). What is design thinking and why is it important?. *Review of educational research*, 82(3), 330-348.
- Richter, A. (2020). Locked-down digital work. *International Journal of Information Management*, 55, 102157.

- Rosala, M., & Krause, R. (2019). User experience careers: What a career in UX looks like today. *Nielsen Norman Group*, 1-89.
- Saldaña, J. (2013). *The coding manual for qualitative researchers*. SAGE Publications.
- Strong, P. (1992). The case for qualitative research. *International Journal of Pharmacy Practice*, 1(4), 185-186.
- Süner-Pla-Cerdà, S., Günay, A., Töre Yargın, G., & Ural, H. (2021). Industrial design students' perceptions towards a career in user experience field in Turkey. *International Journal of Technology and Design Education* 32, 1895-1923. <https://doi.org/10.1007/s10798-021-09666-6>
- Torrens, G. (2000). Understanding the product user: The implementation of a user-centred design approach by student industrial designers when designing for elderly and disabled people. *The Design Journal*, 3(1), 15-30. <https://doi.org/10.2752/146069200789393571>
- Ueda, Y., Matsumoto, K., & Zempo, H. (2018). User experience design in Fujitsu. *Fujitsu Sci. Tech. J*, 54(1), 3-8.
- Valtonen, A. (2005). Six decades – and six different roles for the industrial designer. *Nordes 2005: In the Making*. <https://doi.org/10.21606/nordes.2005.027>
- Wang, B., Liu, Y., Qian, J., & Parker, S. K. (2021). Achieving effective remote working during the COVID-19 pandemic: A work design perspective. *Applied psychology*, 70(1), 16-59.

World Design Organization (n.d.). *Definition of Industrial Design*. Retrieved June 14, 2023, from <https://wdo.org/about/definition/>

Yang, M. Y., You, M., & Chen, F. C. (2005). Competencies and qualifications for industrial design jobs: implications for design practice, education, and student career guidance. *Design studies*, 26(2), 155-189. <https://doi.org/10.1016/j.destud.2004.09.003>

Yargin, G. T., Süner, S., & Günay, A. (2018, July). Modelling user experience: Integrating user experience research into design education. In *International Conferences Interfaces and Human Computer Interaction* (pp. 26-34).

APPENDICES

A. INFORMED CONSENT FORM

ARAŞTIRMAYA GÖNÜLLÜ KATILIM FORMU (TURKISH)

Bu araştırma, ODTÜ Endüstri Ürünleri Tasarımı Bölümü Yüksek Lisans öğrencisi Nazlıcan Serenay Tosun tarafından Doç. Dr. Pınar Kaygan danışmanlığındaki yüksek lisans tezi kapsamında yürütülmektedir. Bu form sizi araştırma koşulları hakkında bilgilendirmek için hazırlanmıştır.

Çalışmanın Amacı Nedir?

Araştırmanın amacı, Türkiye’de endüstri ürünleri tasarımı eğitimi almış insanların kullanıcı deneyimi alanındaki çalışma motivasyonlarını, bu alanda üstlendikleri rolleri ve lisans eğitimde öğrendikleri mesleki bilgileri bu alanda nasıl kullandıklarını anlamaktır.

Bize Nasıl Yardımcı Olmanızı İsteyeceğiz?

Araştırmaya katılmayı kabul ederseniz, 12-15 sorudan oluşan yarı yapılandırılmış bir mülakata katılmanız beklenmektedir. Yaklaşık olarak 45 dakika sürmesi beklenen bu mülakatta sizlere çalışmanın konusu doğrultusunda düşüncelerinizi ve deneyimlerinizi anlayabilmek adına sorular yöneltilecektir. Daha sonra içerik analizi ile değerlendirilmek üzere cevaplarınızın ses kaydı alınacaktır.

Sizden Topladığımız Bilgileri Nasıl Kullanacağız?

Araştırmaya katılımınız tamamen gönüllülük temelinde olmalıdır. Çalışmada size ait kişisel bilgilere yer verilmeyecek, yalnızca katılımcılara ait sektörel bilgiler yer alacaktır. Cevaplarınız tamamıyla gizli tutulacak ve sadece araştırmacılar tarafından değerlendirilecektir. Katılımcılardan elde edilecek bilgiler toplu halde değerlendirilecek ve bilimsel yayımlarda kullanılacaktır.

Katılımınızla ilgili bilmeniz gerekenler:

Mülakat, genel olarak kişisel rahatsızlık verecek sorular veya uygulamalar içermemektedir. Ancak, katılım sırasında sorulardan ya da herhangi başka bir nedenden ötürü kendinizi rahatsız hissederseniz mülakatı yarıda bırakıp çıkmakta serbestsiniz. Böyle bir durumda çalışmayı uygulayan kişiye çalışmadan çıkmak istediğinizi söylemek yeterli olacaktır.

Araştırmayla ilgili daha fazla bilgi almak isterseniz:

Mülakat sonunda, bu çalışmayla ilgili sorularınız cevaplanacaktır. Bu çalışmaya katıldığınız için şimdiden teşekkür ederiz. Çalışma hakkında daha fazla bilgi almak için Endüstri Ürünleri Tasarımı Bölümü öğretim üyelerinden Doç. Dr. Pınar Kaygan (E-posta: -----@----.---.--) ya da yüksek lisans öğrencisi Nazlıcan Serenay Tosun (E-posta: -----@----.---.--) ile iletişim kurabilirsiniz.

Yukarıdaki bilgileri okudum ve bu çalışmaya tamamen gönüllü olarak katılıyorum. (Formu doldurup imzaladıktan sonra uygulayıcıya geri veriniz.)

İsim Soyad

Tarih

İmza

___/___/___

INFORMED CONSENT FORM (ENGLISH)

This research was conducted by Nazlıcan Serenay Tosun, a graduate student at METU Department of Industrial Design. It is carried out within the scope of the master's thesis under the supervision of Assoc. Prof. Dr. Pınar Kaygan. This form has been prepared to inform you about the research conditions.

What is the Purpose of the Study?

The aim of the research is to understand the motivations of people who have received industrial design education in Turkey, their roles in the field of user experience, and how they use the professional knowledge they learned in undergraduate education in this field.

How Do We Ask You to Help Us?

If you agree to participate in the research, you are expected to participate in a semi-structured interview consisting of 12-15 questions. In this interview, which is expected to last approximately 45 minutes, you will be asked questions to understand your thoughts and experiences in line with the subject of the study. Audio recordings of your answers will then be taken to be evaluated by content analysis.

How Will We Use the Information We Collect from You?

Your participation in the research must be entirely voluntary. Your personal information will not be included in the study, only sectoral information of the respondents will be included. Your answers will be kept completely confidential and evaluated only by researchers. The information obtained from the respondents will be evaluated collectively and used in scientific publications.

Here's what you need to know about your participation:

The interview generally does not contain questions or practices that may cause personal discomfort. However, if you feel uncomfortable during participation due to questions or any other reason, you are free to leave the interview midway. In such a

case, it will be sufficient to tell the person applying the study that you want to quit the study.

If you would like more information about the research:

At the end of the interview, your questions about this study will be answered. Thank you in advance for your participation in this study. For more information about the study, you can contact Assoc. Prof. Dr. Pınar Kaygan (E-mail: -----@----.--.--) or graduate student Nazlıcan Serenay Tosun (E-mail: -----@----.--.--).

I have read the above information and participate in this study completely voluntarily. (After completing and signing the form, return it to the researcher.)

Name Surname

Date

Signature

____ / ____ / ____

B. QUESTIONS OF THE FIRST INTERVIEW

BİRİNCİ MÜLAKAT SORULARI

1. Kullanıcı deneyimi alanında çalışmaya nasıl karar verdiniz?
2. Lisans eğitimi aldığınız dönemlerde bu alana ilgi duyuyor muydunuz?
3. Eğitim hayatınızda aldığınız dersler veya etkinlikler bu kararınıza nasıl ve ne kadar etki etti?
4. Lisans eğitiminiz haricinde bu alanla ilgili olduğunu düşündüğünüz dış kaynaklı eğitim aldınız mı?
5. Aldığınız eğitim sizce kullanıcı deneyimi alanında çalışmakta olduğunuz işin mesleki gereksinimlerini ne derecede karşılıyor?
6. Bu çalışma alanının son yıllarda endüstriyel tasarım mezunları arasında popüler olduğunu gözlemliyoruz. Bunun sebepleri sizce ne olabilir?
Not: Verilen cevaplara ve gidişata göre aşağıdaki sorulardan uygun olanları yöneltilecektir.
 - a. Eğitim ile ilgili olabilir mi?
 - b. İş imkanlarıyla ilgili olabilir mi?
 - c. Çalışma ortamıyla ilgili olabilir mi?
 - d. Kariyer yükselişleri ile ilgili olabilir mi?
7. Lisans eğitiminizde öğrenmiş olduğunuz ve bu alanda kullandığınız bilgi ve beceriler var mı? Varsa bunları detaylandırıp nasıl kullandığınızdan bahsedebilir misiniz?
8. Mesleki veya sizin için önemli olan başka kriterler bazında düşünecek olursanız, bu alanda çalışmaya başlarken beklentileriniz ve motivasyonlarınız nelerdi? Bunlar karşılandı mı?
9. Güncel pozisyonunuzda çalışmalarınızı bir ekip içerisinde mi yoksa bireysel mi yürütmektesiniz?
 - a. **Evet** yanıtı gelirse; Takımınızda hangi disiplinlerden meslektaşlarınız var?

- i. *Disiplin çeşitliliği varsa;* Takımınızdaki iş dağılımını düşündüğünüzde, kendinizi veya endüstriyel tasarım eğitimi almış diğer meslektaşlarınızı bu alanda nasıl rollerde ve statülerde görüyorsunuz?
 - ii. *Disiplin çeşitliliği varsa;* Farklı disiplinlerden gelen meslektaşlarınızı düşündüğünüzde, endüstriyel tasarım mezunu olarak bu alanda çalışmanın etkileri nelerdir?
 - iii. *Disiplin çeşitliliği yoksa;* Endüstriyel tasarım mezunlarından oluşan bir ekip ile çalışmak ile ilgili ne düşünüyorsunuz? Sizce bu durum süreçlerinize ve ürünlerinize nasıl etki ediyor?
- b. **Hayır** yanıtı gelirse; İş yerinizde kullanıcı deneyimi tasarımı alanında çalışan tek tasarımcı olarak, nasıl roller üstleniyorsunuz?
10. Daha önce tasarımcı olarak çalışmış mıydınız? Ne tür işlerde çalışmıştınız?
- a. **Evet** yanıtı gelirse; Çalışma alanınızı neden değiştirmek istediniz?
 - b. **Evet** yanıtı gelirse; Ürün tasarımcısı olarak çalışmayı, kullanıcı deneyimi alanındaki çalışmak ile kıyaslayabilir misiniz? Hangisi ne açılardan sizde pozitif/negatif etkiler oluşturdu?
 - c. **Hayır** yanıtı gelirse; Ürün tasarımı ve kullanıcı deneyimi alanlarını tasarım/iş yapma süreçleri ve final ürün olarak düşündüğünüzde, bu alanları birbirleri ile nasıl kıyaslıyorsunuz?
11. Ürün tasarımı ve kullanıcı deneyimi alanlarını tasarıma bakış açısı, tasarım süreçleri ve çıktısı olarak değerlendirdiğinizde, bu alanları birbirleri ile nasıl kıyaslıyorsunuz?

FIRST INTERVIEW QUESTIONS

1. How did you decide to work in the user experience field?
2. Were you interested in this field during your undergraduate education?
3. How and to what extent did the lessons or activities you took in your education life affect your decision on your career?
4. Apart from your undergraduate education, have you received any training that you think is related to the user experience field?
5. To what extent do you think the training you received meets the professional requirements of your job in the field of user experience?
6. We observe that this field of study has become popular among industrial design graduates in recent years. What do you think could be the reasons for this?

Note: According to the answers given and the progress, appropriate questions will be asked.

- a. Could it be related to education?
 - b. Could it be about job opportunities?
 - c. Could it be related to the work environment?
 - d. Could it be related to career advancement?
7. Could you tell us in detail how you used the knowledge and skills you learned in your undergraduate education?
8. If you think in terms of professional or other criteria that are important to you, what were your expectations and motivations when you started working in this field? Did the user experience field meet your expectations?
9. In your current position, do you work in a team or individually?
 - a. *If the answer is yes*; Which disciplines do you have colleagues in your team?
 - i. *If there is a diversity of disciplines*; When you think about the work distribution in your team, what kind of roles and status do you see yourself or your colleagues with industrial design education in this field?

- ii. *If there is a diversity of disciplines;* When you think of your colleagues from other disciplines, what are the implications of working in this field as an industrial design graduate?
 - iii. *If there is no disciplinary diversity;* What do you think about working with a team of industrial design graduates? How do you think this affects your processes and products?
 - b. *If the answer is **no**;* As the only designer working in the field of user experience design in your workplace, what roles do you undertake?
10. Have you worked as a designer before? What kind of jobs did you have?
- a. *If the answer is **yes**;* Why did you want to change your career path?
 - b. *If the answer is **yes**;* Can you compare working as a product designer with working in the user experience field? Which one had positive or negative effects on you?
 - c. *If the answer is **no**;* When you think of product design and user experience as design/working processes and the final product, how do you compare these areas with each other?
11. When you evaluate the fields of product design and user experience in terms of design perspective, design processes and output, how do you compare these fields with each other?

C. QUESTIONS OF THE SECOND INTERVIEW

İKİNCİ MÜLAKAT SORULARI

1. 3 yıl nasıl geçti, kariyerinizde nasıl yol katettiniz?
2. Aradan geçen 3 yılda kendinizi geliştirmek için bir şeyler yaptınız mı?
(*Mesela yeni bir eğitim almak gibi.*)
3. İş değiştirdiyseniz sebepleri nelerdi?
4. Pandeminin çalışma hayatınıza nasıl etkileri oldu?
(*Uzaktan çalışma olanakları ve ekstra vakitlerde iş dışı yapılabilecek sosyal & profesyonel aktivitelerden bahsedilebilir.*)
5. Pandemi ekip çalışmanızı nasıl etkiledi?
6. Ürün Tasarımı ve Kullanıcı Deneyimi karşılaştırmasını bugün yapsanız neler söylersiniz?

SECOND INTERVIEW QUESTIONS

1. How were your last 3 years, how did you progress in your career?
2. Have you done anything to improve yourself in the intervening 3 years?
(For example, getting a new education.)
3. If you changed jobs, what were the reasons?
4. How has the pandemic affected your working life?
(Remote work opportunities and social & professional activities that can be done outside of work in extra time can be mentioned.)
5. How has the pandemic affected your teamwork?
6. If you were to compare product design & UX today, what would you say?

D. ETHICAL APPROVAL

UYGULAMALI ETİK ARAŞTIRMA MERKEZİ APPLIED ETHICS RESEARCH CENTER	 ORTA DOĞU TEKNİK ÜNİVERSİTESİ MIDDLE EAST TECHNICAL UNIVERSITY
DUMLUPINAR BULVARI 06800 ÇANKAYA ANKARA/TURKEY T: +90 312 210 22 91 F: +90 312 210 79 59 www.ueam.metu.edu.tr	
Sayı: 28620816 / 491	12 Aralık 2019
Konu: Değerlendirme Sonucu	
Gönderen: ODTÜ İnsan Araştırmaları Etik Kurulu (İAEK)	
İlgi: İnsan Araştırmaları Etik Kurulu Başvurusu	
Sayın Doç.Dr. Pinar KAYGAN	
Danışmanlığını yaptığınız Nazlıcan Serenay TOSUN'un "Yeni Ünvanlar, Aynı Tasarımcı: Kullanıcı Deneyimi Alanında Endüstriyel Tasarım Mezunları" başlıklı araştırması İnsan Araştırmaları Etik Kurulu tarafından uygun görülmüş ve 471 ODTU 2019 protokol numarası ile onaylanmıştır.	
Saygılarımızla bilgilerinize sunarız	
	Doç.Dr. Mine MISIRLISOY Başkan
Prof. Dr. Tolga ÇAN Üye	Doç.Dr. Pinar KAYGAN Üye
Dr. Öğr. Üyesi Ali Emre TURGUT Üye	Dr. Öğr. Üyesi Şerife SEVİNÇ Üye
Dr. Öğr. Üyesi Müge GÜNDÜZ Üye	Dr. Öğr. Üyesi Süreyya Özcan KABASAKAL Üye

Figure F.1. Ethical Approval Form